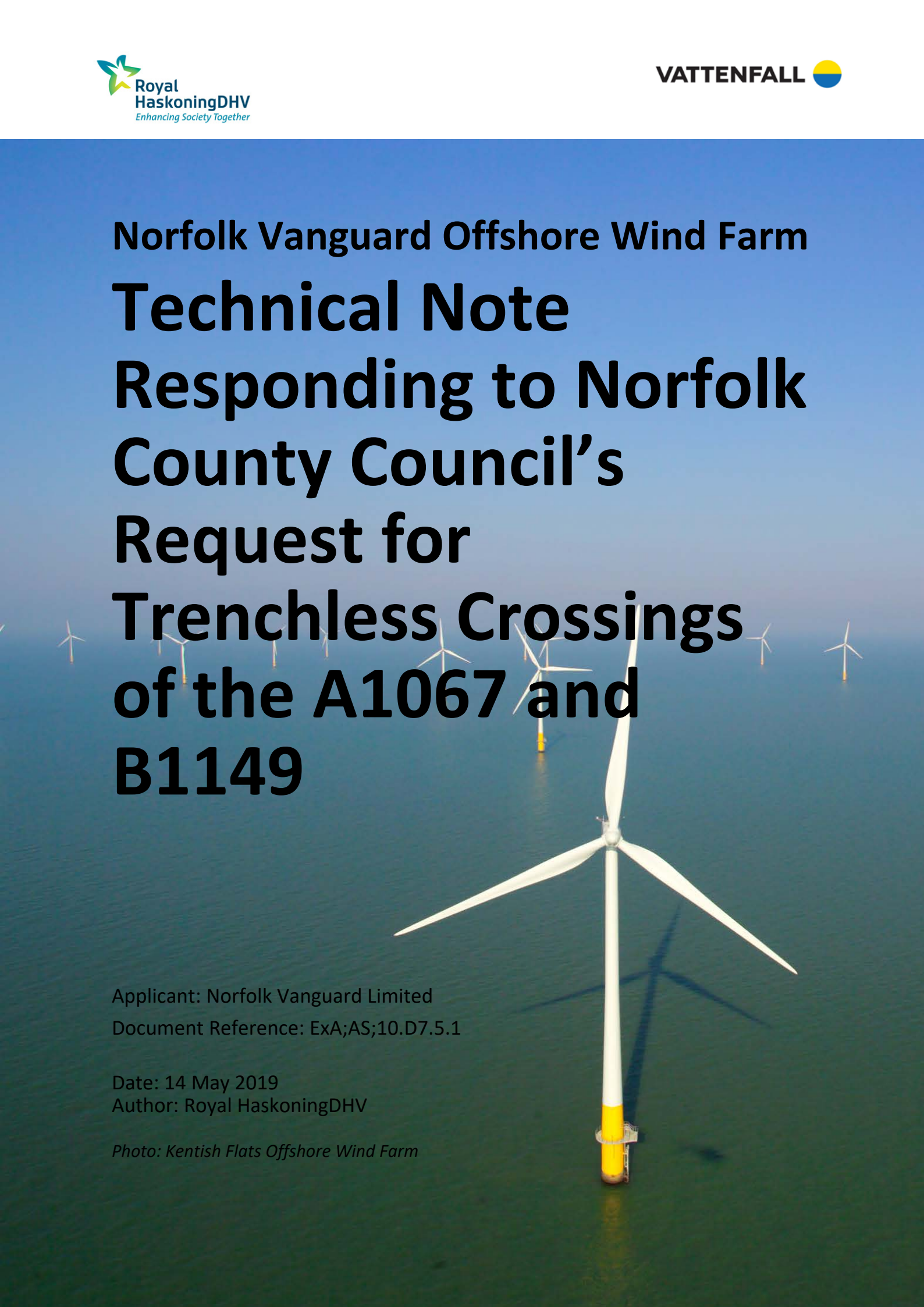


Norfolk Vanguard Offshore Wind Farm Technical Note Responding to Norfolk County Council's Request for Trenchless Crossings of the A1067 and B1149



Applicant: Norfolk Vanguard Limited

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EXECUTIVE SUMMARY

This Technical Note has been prepared on behalf of Norfolk Vanguard Ltd (the Applicant) in relation to the Norfolk Vanguard Offshore Windfarm ('the Project') to consider concerns raised by Norfolk County Council (NCC) in relation to the proposed 'open cut' method for duct installation when crossing the A1067 Fakenham Road (Sparham) and the B1149 Holt Rd (north of Cawston).

Following submission of the Norfolk Vanguard application for development consent in June 2018 NCC requested that additional trenchless crossings should be undertaken for following road crossings:

- A1067 - to take into account potential changes in traffic flows following the opening of the Norwich Northern Distributor Road (NNDR) in April 2018; and
- B1149 – to take into account disruption to the network by the potential cumulative interaction of the Project's traffic with the Hornsea Project Three main compound at Oulton, details of which became available in May 2018.

An investigation has been undertaken in response to the concerns raised by NCC on the potential impacts of open cut trenching on the A1067 and B1149, with the following findings:

- A1067 – Forecast traffic flows would exceed the total vehicles per hour level at which single lane traffic management may be undertaken without network disruption. It is therefore now recommended that a trenchless crossing is implemented to mitigate the potential road network disruption. This trenchless crossing will be captured an update to DCO Requirement 16 submitted at Deadline 8.
- B1149 – Forecast cumulative traffic flows were examined and would fall well below the total vehicles per hour level at which single lane traffic management would lead to network disruption.
- B1149 – Norfolk Partnership Laboratory (NPL), investigated ground conditions at the B1149 and ascertain if an appropriate road reinstatement specification (to address additional concerns raised by NCC) is feasible. The testing indicates that the road subsurface has good load bearing properties and a specification was identified for the reinstatement that will minimise the potential for future maintenance liability.
- B1149 – An open cut trench crossing is therefore still deemed appropriate as there is no evidence from the investigations to suggest that this form of open cut crossing and associated reinstatement will cause significant adverse impacts or present a maintenance liability for NCC.

Consideration of the potential environmental impacts of undertaking a trenchless crossing of the A1067 was also undertaken. Predicted noise levels for the nearest noise sensitive receptor were calculated during the daytime, evening, weekends, and night time periods.

The predicted noise levels at the nearest noise sensitive receptor associated with a trenchless crossing of the A1067 represent an impact of **negligible** significance during the daytime, evening and weekend reference periods.

The predicted noise levels at the nearest noise sensitive receptor associated with a trenchless crossing of the A1067 represents in impact of **major adverse** significance during the night-time reference period. A requirement for further 'enhanced mitigation' was therefore identified.

Enhanced mitigation in the form of standard 3.5m high noise absorptive barriers were introduced and the noise levels re-modelled. With enhanced mitigation, the modelled noise level at the nearest noise sensitive receptor reduced to 39.3dBA, representing a residual noise impact of **negligible** significance. A Construction Noise Management Plan (CNMP) will be included in the final Code of Construction Practice (CoCP) as required under Requirement 20 (2)(e) of the DCO. Enhanced mitigation at the closest noise sensitive receptor to the A1067 crossing will be captured within an update to the Outline CoCP.

No changes were identified for other relevant onshore environmental topics associated with the proposed trenchless crossing of the A1067. The findings of the submitted Environmental Statement therefore remain valid for those topics.

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1 INTRODUCTION

1.1 Purpose of this Document

1. This Technical Note has been prepared on behalf of Norfolk Vanguard Ltd (the Applicant) in relation to the Norfolk Vanguard Offshore Windfarm ('the Project') to consider concerns raised by Norfolk County Council (NCC) in relation to the proposed 'open cut' method for duct installation when crossing the A1067 Fakenham Road (Sparham) and the B1149 Holt Rd (north of Cawston). **Appendix A** shows these two locations, and **Appendix B** contains the relevant extract from the joint position statement submitted by the Applicant and NCC at Deadline 6 (ExA; ISH4; 10.D6.3).
2. Following submission of the Norfolk Vanguard application for development consent to the Planning Inspectorate in June 2018, NCC requested that additional trenchless crossings should be undertaken for following road crossings:
 - A1067 - to take into account potential changes in traffic flows following the opening of the Norwich Northern Distributor Road (NNDR) in April 2018; and
 - B1149 - NCC expressed concern that the disruption to the network would be exacerbated by the potential cumulative interaction of the Project's traffic with the Hornsea Project Three's main compound traffic located on The Street at Oulton and questioned if a feasible traffic management solution could be identified for the forecasted cumulative vehicle movements. The introduction of this main compound was first reported in the Hornsea Project Three application documentation submitted in May 2018.
3. The specific concerns raised by NCC in relation to the proposed open cut method are:
 - 1) Disruption to the network associated with temporary traffic management (i.e. delays to traffic); and
 - 2) The long-term maintenance liability to the reinstatement of an open cut trench on the affected roads, in the context of the Project forecast Heavy Goods Vehicle (HGV) traffic (it should be noted that after an initial guarantee period of three years the maintenance of the reinstatement would become the responsibility of the local highway authority).
4. The Applicant has undertaken further traffic count surveys along the A1067 as requested by Norfolk County Council (NCC) to investigate potential changes in traffic flows following the opening of the NNDR in April 2018. In addition, the Applicant has commissioned local pavement specialists, the Norfolk Partnership Laboratory (NPL) to investigate ground conditions at the B1149 and ascertain if an appropriate road reinstatement is feasible.

5. This note examines the points of concern raised for the proposed open cut method at both the A1067 and the B1149 and applies the latest traffic and engineering data to provide a recommendation to the Examining Authority (ExA).

2 Traffic Considerations for the Proposed Open Cut Method at the A1067 and the B1149

2.1 Road Network Disruption Review - A1067 and B1149

6. The principal guidance for temporary traffic management situations in the UK is Chapter 8 of the Traffic Signs Manual (Department for Transport, 2009) ('Chapter 8'). Chapter 8 gives detailed specification for roadworks for a wide range of traffic situations.
7. Open cut trenching for the Project would be carried out by closing a lane of the carriageway and providing traffic signal control to safely introduce single file traffic (known as 'one-way working'). Paragraph D5.1.6 of Chapter 8 details the maximum vehicle flows at which significant delays would be experienced by traffic subjected to one-way working as follows:

'On roads where flows are very high, overload of the controlled area is possible and exceptional delays may result. This can occur with two-way flows as low as 1,300 vehicles per hour (for sites about 50m long)....' (Department for Transport, 2009)
8. Thus, the 1,300 vehicle per hour is adopted as the 'Chapter 8 thresholds' to determine if the open cut method would lead to significant network disruption at either of the two proposed open cut sites.

2.1.1 Traffic Flow Data

9. Baseline traffic flow data was captured via seven-day Automatic Traffic Counters (ATC) commissioned by Norfolk Vanguard Limited. The locations, dates and requirements of the surveys were as follows:
 - A1067, at the point of the cable crossing; undertaken on the 23rd April 2019 to 30th April 2019, data provided in **Appendix C**. An additional ATC commissioned at NCC's request to assess the potential re-assignment of traffic to/from the recently

- completed A1270 (Norwich Northern Distributor Route) and calibrate the count data presented in the DCO application¹.
- B1149, approximately 65m north of crossing point; original ATC captured as part of Chapter 24 ES assessment undertaken on the 19th April 2017 to 25th April 2017, data provided in **Appendix D**.
10. The traffic count data is summarised in **Table 1.1**.
 11. A review of the surveyed traffic data identifies network peak hours of 7:30am to 8:30am and 4:30pm to 5:30pm for both sites.
 12. Within Table 1.1, the surveyed flows have been growthed to the forecast year of 2022 (the earliest start of construction for Norfolk Vanguard). Annual Average Weekly Traffic (AAWT) has been derived to reflect the Project's predominate weekday traffic demand. The growth factors for AAWT peak hours have been derived from the Department for Transport Trip End Model Presentation Programme (TEMPro²) Version 7.2 with data set 7.0 for the Breckland (A1067) and Broadland (B1149) geographical areas respectively.
 13. To account for daily fluctuations in traffic flows a 10% (-5%/+5%) daily fluctuation factor has been applied to the 2022 forecast flows.
 14. In addition, the daily development flows (employees and HGVs) for both Norfolk Vanguard and Hornsea Project Three have been taken from the respective examination documentation (and as presented in the cumulative impact assessment submitted at Deadline 5 - ExA; ISH1; 10.D5.3) and added to the maximum (+5%) 2022 forecast flows.
 15. The final 2022 forecast flows presented in **Table 1.1** are considered to be the maximum worst case flows that both the A1067 and B1149 would experience during open cut trenching for each cable crossing location.

¹ The A1067 crossing bisects two highway links (link 24, east of crossing point and link 29, west of crossing point). The traffic flows presented in the Environmental Statement for the highway links to be crossed (were derived from DfT counts in the locality of the crossing point and an Annual Average Daily Traffic (AADT) flow of 10,328 and 13,065 respectively was presented.

² TEMPro growth factors have utilised National Transport Model (NTM) area providing growth rates for Annual Average Weekly Traffic (AAWT), AM and PM peak hours.

Table 1.1 Traffic Flow Data (two-way flows)

Time Periods	Surveyed Flows	TEMPro Growth Factors	2022 Daily Forecast Flows	2022 Forecast Daily Fluctuations		Norfolk Vanguard 2022 Daily Development Flows		Hornsea Project 3 Daily Development Flows		Total 2022 Daily Forecast Flows with Developments	
				Min (-5%)	Max (-5%)	Employee Vehicles	HGVs	Employee Vehicles	HGVs	Total Vehicles	
A1067											
24hr AAWT ¹	24hrs	11,294	1.0593	11,964	11,366	12,562	148	431	72	86	13,299
Weekday am Peak	7:30am to 8:30am	1,123	1.0556	1,185	1,126	1,244	74	43	36	9	1,406
Weekday pm Peak	4:30am to 5:30pm	1,112	1.0563	1,174	1,115	1,233	74	43	36	9	1,395
B1149											
24hr AAWT ¹	24hrs	5,645	1.1110	6,272	5,958	6,585	156	235	232	162	7,370
Weekday am Peak	7:30am to 8:30am	513	1.1038	566	538	595	78	23	116	17	828
Weekday pm Peak	4:30am to 5:30pm	561	1.1057	620	589	651	78	23	116	17	885
¹ Annual Average Weekly Traffic											

2.1.2 Network Disruption Conclusion

2.1.2.1 A1067

16. As can be seen by **Table 1.1**, both the forecast 2022 AM (1,406) and PM (1,395) peak flows exceed the Chapter 8 threshold of 1,300 two-way vehicle flows for one-way working (for cumulative traffic). The 1,300 threshold is also exceeded with the inclusion of Norfolk Vanguard construction traffic alone.
17. Therefore, the Applicant agrees that the implementation of a trenchless crossing for the A1067 is now deemed appropriate during construction of Norfolk Vanguard, whether alone or in combination with Hornsea Project Three, to mitigate adverse network disruption. DCO Requirement 16 will be amended to capture the A1067 in the list of trenchless crossings committed to by the Applicant.
18. A consideration of environmental impacts associated with this trenchless crossing is included in section 3 of this note.

2.1.2.2 B1149

19. As can be seen by **Table 1.1**, both the forecast 2022 AM (828) and PM (885) peak flows (for both Project alone and cumulative traffic flows) are well below the Chapter 8 thresholds of 1,300 two-way vehicle flows for one-way working.
20. Therefore, it is considered that one-way working remains appropriate for the B1149 and will not result in significant network disruption. It is noted that the B1149 is defined by NCC as a traffic sensitive route and in accordance with this stipulation, all roadworks will be carried out outside of the periods of 7:30am to 9am and 4pm to 7pm and the road would be open to two-way traffic thereafter.
21. With the combination of the identified low traffic flows and previously identified traffic mitigation measures in place, no more than a **minor adverse** residual impact would be experienced on the B1149 during the open cut trench crossing works, which is not significant in EIA terms.

2.2 Long-Term Maintenance Liability Review – B1149

22. As requested by NCC, in April 2019 Norfolk Vanguard Ltd. commissioned local pavement specialists, the NPL to investigate ground conditions at the B1149 and ascertain if an appropriate road reinstatement specification (to address NCC concerns) is feasible. NPL undertook four core sample ground investigations in the approximate location of the proposed open cut trench crossings on the B1149.

23. **Appendix E** contains the core testing results. In summary, the testing indicates that there is good load bearing subgrade (known as the California Bearing Ratio test) and accordingly the road can be suitably reinstated. A specification has been developed for the reinstatements to minimise the potential for future maintenance liability by minimising the risk of differential settlement and reflective cracking. Appendix E also contains the recommended pavement specification for each trench location. The specification uses readily available material and established trenching techniques and would be adopted by a suitably accredited (New Road and Streetworks Act) contractor.
24. Based on the findings of the laboratory tests and the recommended reinstatement specification, it is concluded that adverse maintenance liability can be mitigated and therefore open cut trenching remains an appropriate treatment. The specification (and any variations as agreed with NCC) would be secured in the Outline Traffic Management Plan to be submitted at Deadline 8.

2.3 Cumulative Traffic Management – B1149

25. As previously noted, NCC has specific concerns relating to the cumulative interaction of the Project's and Hornsea Project Three's traffic. With regard to one-way working the specific concerns are:
- 1) Accommodating the large volume of abnormal loads delivering cable drums to the Hornsea Project Three main compound at Oulton; and
 - 2) Ensuring the roadworks do not lead to 'blocking back' of the B1149/The Street, Oulton junction; or vehicles do not approach the back of a queue unsighted from the B1149 south, hump back bridge.
26. **Appendix F** sets out the proposed one-way traffic management concept design for the B1149. The roadworks design incorporates a wide one way lane (4.5m) to accommodate the Hornsea Project Three abnormal loads within the current Order limits for Norfolk Vanguard. It can also be observed from **Appendix F** that the road works terminate some 210m southeast of the B1149/The Street, Oulton junction ensuring that the risk of traffic blocking back to the B1149/The Street junction would be minimised. Furthermore the roadworks terminate some 430m northwest of the hump back bridge ensuring the risk of queue length collision is minimised.
27. It is therefore concluded that the specific cumulative traffic concerns have been designed out at the B1149 crossing.

2.4 Conclusion

28. An investigation has been undertaken in response to the concerns raised by Norfolk County Council on the potential impacts of open cut trenching on the A1067 and B1149.
29. Based on the results of the investigations, the following recommendations are proposed from a traffic and transport perspective:
 - A1067 – It is recommended that a trenchless crossing is implemented to mitigate the expected adverse network disruption. Mobilisation Area 5a and 5b are located either side of the A1067 and are available to facilitate this trenchless crossing without any changes to the Order limits.
 - B1149 – An open cut trench is deemed appropriate as there is no evidence from the investigations to suggest that this form of treatment will cause significant adverse impacts or present a maintenance liability for NCC.
30. It should be noted that there are currently no temporary works areas in proximity to the B1149. As such it would not be possible to undertake a trenchless crossing in this location without additional land outside of the current Order limits. However, the evidence presented within this note demonstrates that an open cut trench solution is appropriate for the B1149.

3 Environmental Consideration for Trenchless Crossing of the A1067

3.1 Methodology for Crossing the A1067

31. The purpose of this section is to consider whether the revised construction methodology for a trenchless crossing solution at the A1067 will give rise to any potentially significant impacts beyond those which have already been assessed and presented in the Environmental Statement (ES) submitted in June 2018 (DCO document 6.1).
32. The construction methodology assessed for the A1067 crossing within the originally submitted application documents was for an open cut trench between Mobilisation Area 5a and 5b located either side of the A1067. These locations are shown on Plate 1 below.

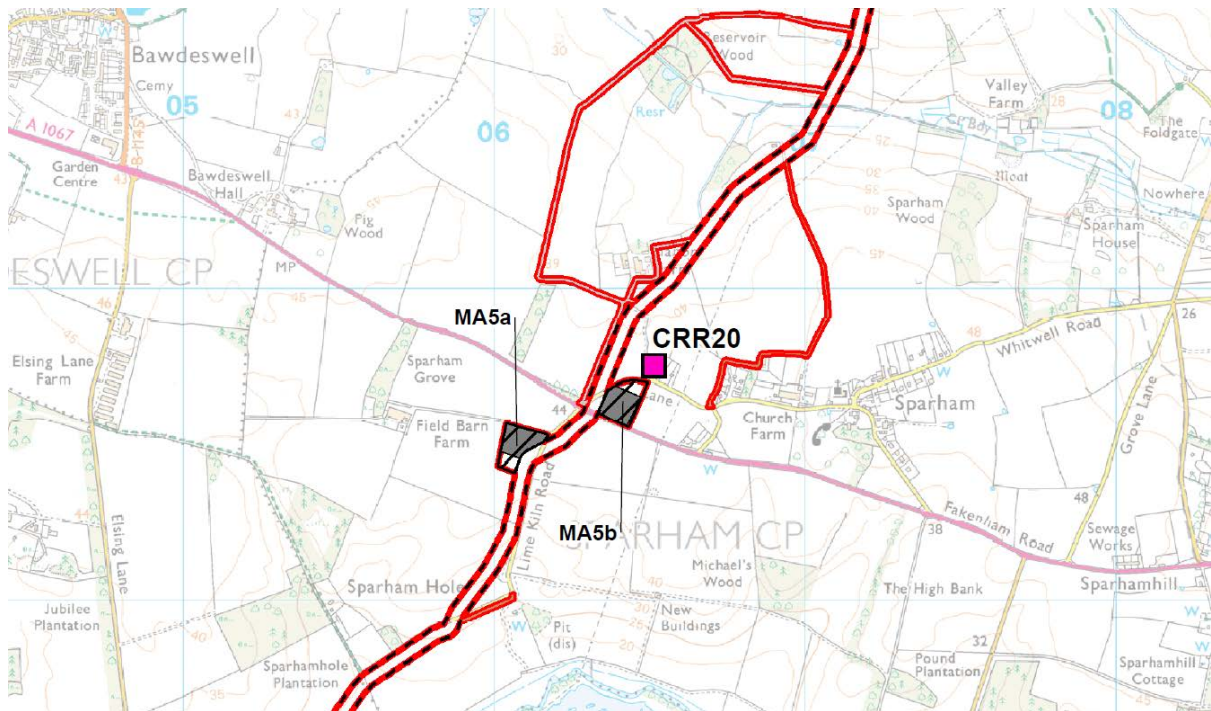


Plate 1: Proposed works area

33. The amended construction methodology is a trenchless crossing of the A1067 using Mobilisation Areas 5a and 5b as trenchless crossing drill and reception sites.

34. With reference to Section 5.5.3.6.3 of ES Chapter 5 Project Description, the worst case maximum dimensions of a trenchless crossing compound are 5,000m² for the drill reception site and 7,500m² for the drill launch site. At the crossing of the A1067, Mobilisation Areas were previously identified on each side of the A1067 (MA5a and MA5b) in order to facilitate the open cut trench solution. Each of these Mobilisation Areas has a footprint of 10,000m², and therefore no additional land take is required to accommodate the trenchless crossing, i.e. compounds to facilitate a trenchless crossing of the A1067 can be accommodated wholly within the current Order limits as shown on Plate 1.
35. This technical note is therefore limited to consideration of the equipment that will now be required at Mobilisation Area 5a and 5b for a trenchless crossing, the timings of the works, and the associated environmental impacts when using this area for trenchless crossing drill and reception sites. The relevant differences between the assessed open cut methodology and the trenchless crossing methodology are presented below in **Table 1.2**.

Table 1.2 Comparison of originally assessed parameters and those associated with trenchless crossing

Parameter	Originally assessed values (mobilisation area / open-cut trench)	Trenchless crossing values												
Working hours	Consented construction hours: 07.00 – 19.00 Monday to Friday 07.00 – 13.00 Saturday No work on Sundays or public holidays. As set out in Requirement 26.	Consented construction hours: 07.00 – 19.00 Monday to Friday 07.00 – 13.00 Saturday Trenchless crossings may require works to extend outside of the consented hours (for technical reasons following commencement of drilling), i.e. works may extend into the evening or night time. Should works be required to extend beyond the consented hours then prior approval would be required from the relevant planning authority as set out in Requirement 26.												
Compound footprint	MA5a = 10,000m ² MA5b = 10,000m ²	5,000m ² drill reception site* 7,500m ² drill launch site*												
Equipment / plant and associated noise levels	Duct installation (daytime)													
	<table border="1"> <thead> <tr> <th>Name</th> <th>LwA dB(A)**</th> <th>On time Correction***</th> </tr> </thead> <tbody> <tr> <td>Bulldozer</td> <td>108</td> <td>75%</td> </tr> <tr> <td>Dump Truck</td> <td>107</td> <td>75%</td> </tr> <tr> <td>Tracked Excavator</td> <td>107</td> <td>75%</td> </tr> </tbody> </table>	Name	LwA dB(A)**	On time Correction***	Bulldozer	108	75%	Dump Truck	107	75%	Tracked Excavator	107	75%	Trenchless crossing (daytime)
Name	LwA dB(A)**	On time Correction***												
Bulldozer	108	75%												
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Name	LwA dB(A)**	On time Correction***												
Tracked Excavator	107	50%												
Backhoe Loader	96	50%												
Bulldozer	108	50%												

Parameter	Originally assessed values (mobilisation area / open-cut trench)			Trenchless crossing values		
		Generator	105	100%	Dumper	101
	Water Pump	93	75%	Mobile Crane	106	25%
	Dump Truck	115	15km/h	Cement Mixer	103	25%
	Lorry	108	15km/h	Concrete Pump	108	25%
	Temporary work areas (daytime)			Piling	118	10%
	Name	LwA dB(A)	On time Correction	Drilling Rig	105	75%
	Tracked Excavator*	107	25%	Water Pump	93	75%
	Bulldozer*	108	25%	Generator	105	100%
	Dumper*	101	25%			
	Mobile Crane*	106	25%	Trenchless crossing (evening / night-time)		
	Generator	105	100%	Name	LwA dB(A)	On time Correction
	Evening / night-time activities			Backhoe Loader	96	50%
	None			Dumper	101	50%
				Drilling Rig	105	75%
				Water Pump	93	75%
				Generator	105	100%
<p>* Normal duct installation works that will progress from Mobilisation Area 5a and 5b will still require the full 10,000m² land take.</p> <p>** A-weighted sound power level in decibels</p> <p>*** Percentage of assessment period that plant is expected to be in operation</p>						

3.2 Consideration of a Trenchless Crossing of the A1067

36. Table 1.3 provides consideration of the proposed change in construction methodology for the crossing of the A1067 in relation to each of the previously assessed relevant onshore EIA topics.

Table 1.3 Environmental considerations

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Ground conditions and contamination (Chapter 20)	The proposed change in construction methodology remains wholly within the previously assessed Order limits and is no closer to any identified sensitive receptors associated with ground conditions and contamination. On this basis there will be no change to the previously reported findings.	No change
Land use and agriculture (Chapter 21)	The proposed change in construction methodology remains wholly within the previously assessed Order limits and no additional land will be affected as a result of this change. The change in construction plant operating within this temporary works area, and the potential for works to extend into the evening / night time, is unrelated to the assessment criteria agreed for land use and agricultural receptors. Therefore there will be no change to the previously reported findings.	No change
Onshore ecology and ornithology (Chapters 22 and 23)	The proposed change in construction methodology remains wholly within the previously assessed Order limits and no additional land will be affected as a result of this change. There are no sensitive ecological receptors in proximity to Mobilisation 5a and 5b and the change in construction plant operating within these areas will not change the previously reported findings.	No change
Traffic and transport (Chapter 24)	<p>The inclusion of a new trenchless crossing would generate a new traffic peak of 48 HGV daily movements.</p> <p>ES Chapter 24 Traffic and Transport details within paragraphs 146 and 147 that a maximum of three trenchless crossing work gangs would be active at any one time across the whole onshore cable route. This constrains traffic demand to a level that would be generated by three trenchless crossings active at any point within the construction programme (an effective traffic demand 'cap' associated with this activity).</p> <p>The A1067 has already been assessed for the maximum HGV peak demand associated with</p>	No change

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
	<p>three active trenchless crossing sites, i.e. the peak traffic demand assessed will not change as a result of the inclusion of the additional trenchless crossing, because there can never be more than three active trenchless crossings at any one time.</p> <p>Therefore, the inclusion of an additional trenchless crossing on the A1067 would result in no change to Traffic and Transport impacts as assessed within the ES Chapter 20 and subsequently within the cumulative impact assessment submitted at Deadline 5 (ExA; ISH1; 10.D5.3).</p>	
<p>Noise and vibration (Chapter 25)</p>	<p>The nearest noise sensitive receptor is CRR20 located approximately 105m from MA5b.</p> <p>A detailed assessment of potential noise and vibration effects associated with the change to a trenchless crossing of the A1067 is provided in Appendix G.</p> <p>Open cut trenching was limited to the consented working hours, i.e. 07.00 – 19.00 Monday to Friday and 07.00 to 13.00 on Saturdays. Trenchless crossings include the potential for work to extend beyond the consented hours due to the continuous nature of the drilling. Therefore evening, weekend and night time working must be taken into consideration. In addition, a trenchless crossing method has the potential for percussive piling to anchor the drills, which is not present in the open-cut methodology.</p>	<p>The assessed noise levels associated with a trenchless crossing of the A1067 at the nearest noise sensitive receptor (CRR20) represent an impact of negligible significance during the daytime, evening and weekend reference periods (reported in full in Appendix G).</p> <p>The predicted noise levels associated with a trenchless crossing of the A1067 represent in an impact of major adverse significance (without mitigation) at receptor CRR20 should night-time working take place. However, with the inclusion of enhanced mitigation in the form of 3.5m high standard noise absorptive barriers, the residual impact is reduced negligible significance.</p> <p>A Construction Noise Management Plan (CNMP) will be included in the final Code of Construction Practice (CoCP), as required under Requirement 20 (2)(e) of the DCO. Enhanced mitigation (including noise absorptive barriers) is captured in the existing outline CoCP (document reference 8.1).</p> <p>The CNMP provided within the final CoCP will apply throughout that stage of construction and will detail standard mitigation (best practical means) and where applicable,</p>

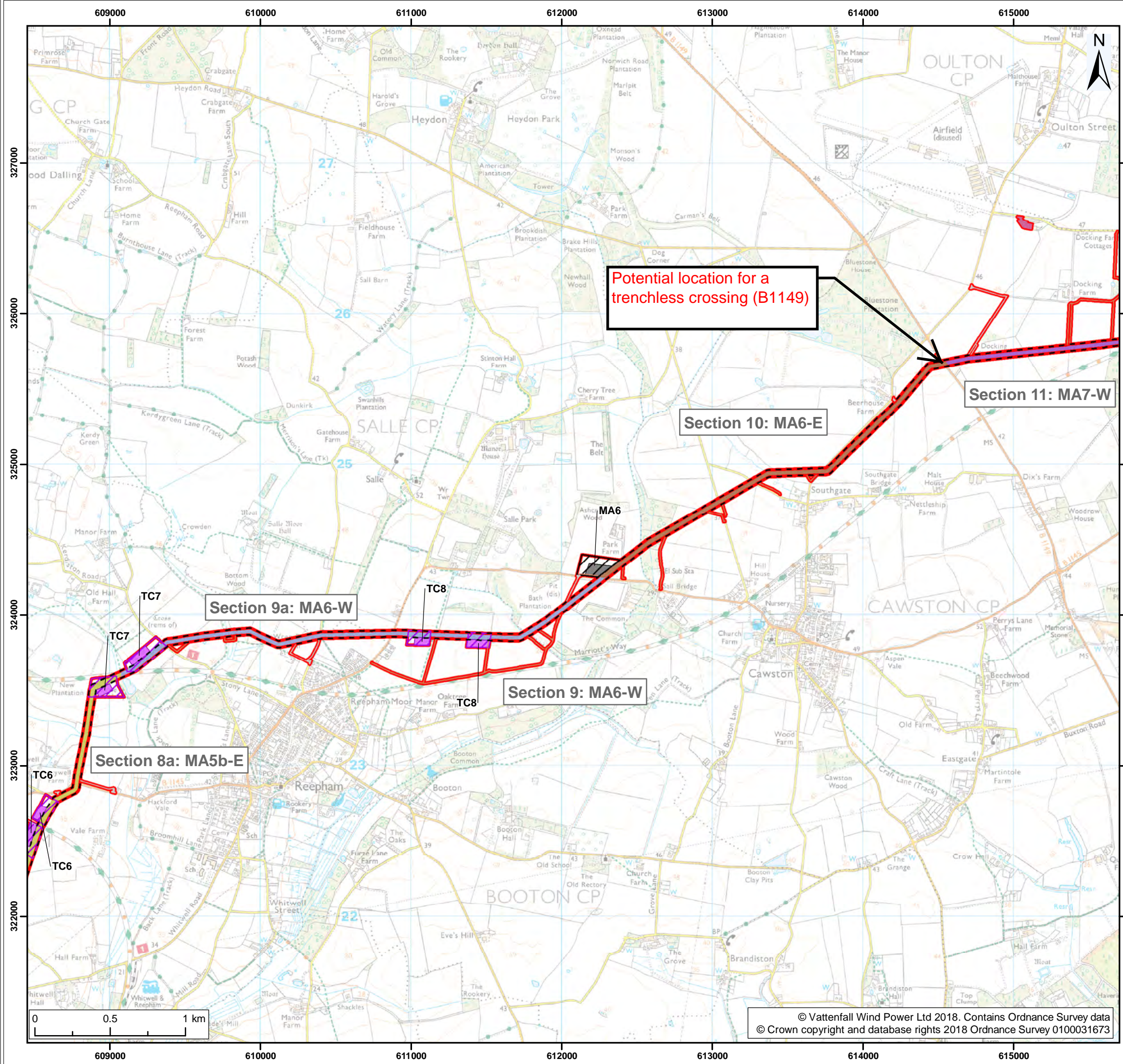
Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
		<p>enhanced mitigation measures. The exact specification of any noise barriers that may be required to mitigate significant residual construction noise will be determined during detailed design. Noise barriers will be introduced with the appropriate specification for the location and noise reduction required.</p> <p>Piling, if required, at a distance of at least 105m (the distance between the works and CRR20) represents a vibration impact of negligible significance.</p>
Air quality (Chapter 26)	<p>The proposed change in construction methodology remains wholly within the previously assessed footprint and does not introduce any new dust generating activities compared to those previously assessed. No significant air quality impacts were identified in the original assessment. Therefore there will be no change to the previously reported findings.</p>	No change
Human health (Chapter 27)	<p>Potential health impacts are related to potential increases to construction noise, air quality and exposure to historic contaminants. There are no identified changes to the findings of the air quality and contaminated land assessments. However, as noted above, there are changes to the previously reported construction noise impacts due to the potential requirement for works to extend into the evening and night time due to the continuous nature of drilling works.</p>	<p>Noise impacts are considered earlier in this table and in detail in Appendix G.</p> <p>Without mitigation there is the potential for significant noise impacts should works extend into the night time reference period. With the inclusion of noise absorption barriers this potential effect will be reduced to not significant. Noise barriers will be introduced with the appropriate specification for the location and noise reduction required. This is captured within the OCoCP and secured through Requirement 20 (2)(e) of the DCO.</p> <p>With the inclusion of appropriately designed noise absorption barriers in the event of night time working being permitted, no significant impacts to human health are anticipated as a result of the proposed change in construction methodology.</p>

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Onshore archaeology and cultural heritage (Chapter 28)	The proposed change in construction methodology remains wholly within the previously assessed footprint and will not lead to any change of effect upon known buried heritage assets or any of the receptors assessed in the heritage settings assessment. Therefore there will be no change to the previously reported findings.	No change
Landscape and visual impact (Chapter 29)	The proposed change in construction methodology remains wholly within the previously assessed footprint. It is no closer to any identified sensitive visual receptors and does not lead to any change in views from previously identified sensitive receptors. The change in methodology would not lead to any increased visibility or change in landscape character. As such, there will be no change to the previously reported findings.	No change
Tourism and recreation (Chapter 30)	The proposed change in construction methodology remains wholly within the previously assessed footprint and is no closer to any identified sensitive receptors associated with tourism and recreation, and therefore there will be no change to the previously reported findings.	No change
Socio-economics (Chapter 31)	The proposed change in construction methodology will not result in any changes to the reported construction workforce numbers, and therefore there will be no change to the previously reported findings.	No change

37. Based on the review provided in Table 2, there are changes to the reported findings associated with noise and vibration and human health impacts (also noise related). These changes relate to the potential requirement for drilling works to extend beyond the consented construction hours. A potential **major adverse** noise impact has been identified at the closest noise sensitive receptor (CRR20) should works be required to take place during the night.
38. With the inclusion of enhanced mitigation in the form of 3.5m high standard noise absorptive barriers, noise levels at CRR20 would be reduced to 39.3dBA representing a residual impact of **negligible** significance.

39. A CNMP will be included in the final CoCP, as required under Requirement 20 (2)(e) of the DCO. The Outline CoCP commits the Applicant to delivering a CNMP, which will apply throughout that stage of construction and will detail standard mitigation (best practical means) and where applicable, enhanced mitigation measures. The exact specification of any noise barriers that may be required to mitigate significant residual construction noise will be determined during detailed design based on the confirmed list of plant and equipment. Noise barriers will be introduced with the appropriate specification for the location and noise reduction required.
40. Piling, if required, at a distance of least 105m from the nearest noise sensitive receptor represents a vibration impact of **negligible** significance.
41. For works taking place during the daytime, evening and weekends potential noise impacts remained of **negligible** significance.
42. There are no changes to the impacts identified for other relevant onshore EIA topics associated with the proposed change in construction methodology for a trenchless crossing of the A1067. The findings of the submitted Environmental Statement therefore remain valid for those topics.

APPENDIX A Trenchless Crossings Locations



- Legend:
- Norfolk Vanguard onshore red line boundary
 - Onshore cable route**
 - Onshore cable route
 - Trenchless crossing zone (e.g. HDD)
 - Indicative trenchless crossing compound
 - Mobilisation zone
 - Indicative mobilisation area compound
 - Cable logistics area
 - Access**
 - Construction access
 - Operation access
 - Cable Route Sections**
 - Section 8a: MA5b-E
 - Section 9a: MA6-W
 - Section 10: MA6-E
 - Section 11: MA7-W

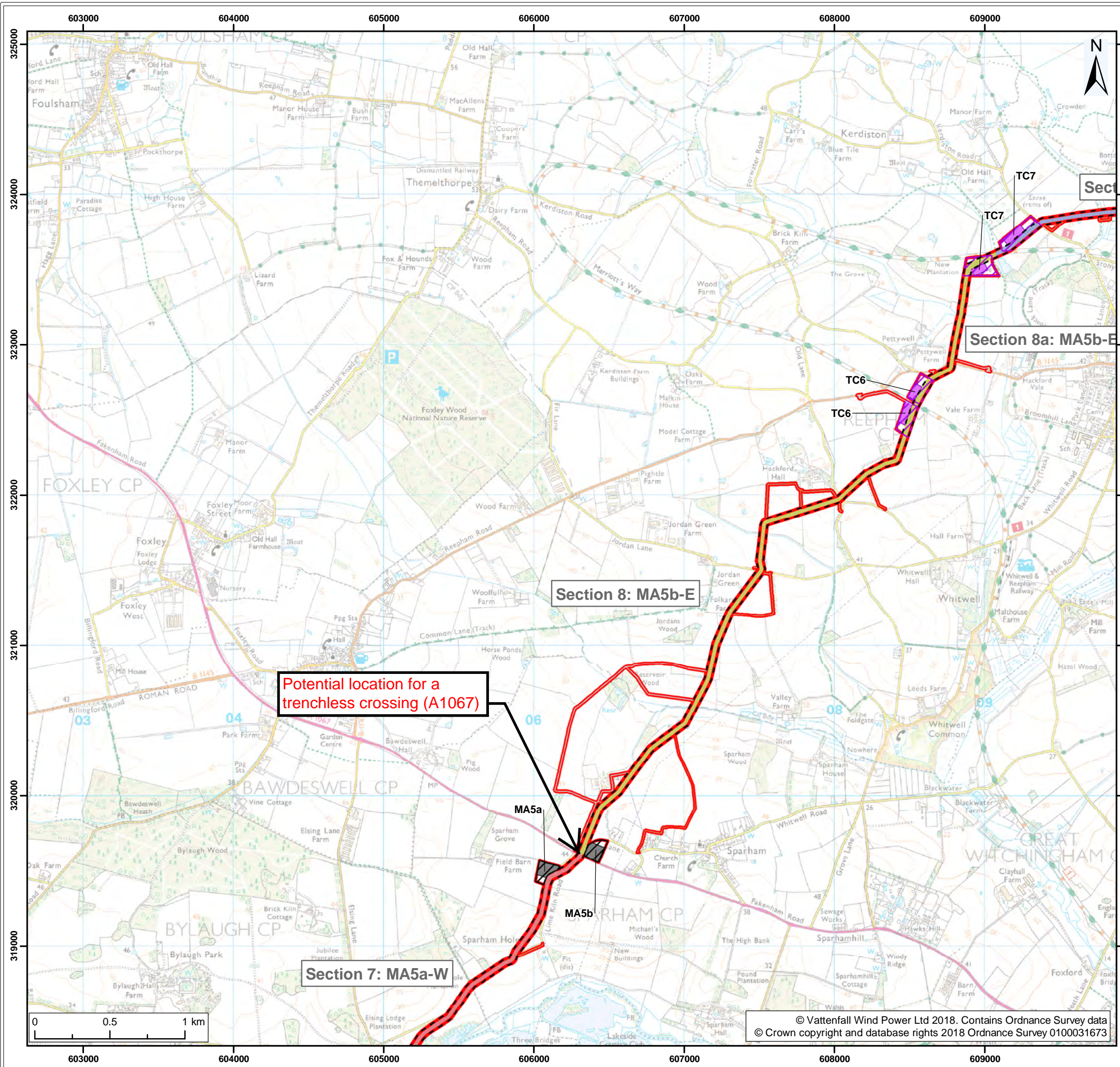
MA = Mobilisation Area	
Project: Norfolk Vanguard	Report: Outline Traffic Management Plan

Title:
Onshore Cable Route Project Components
(map 5 of 9)

Figure: 2	Drawing No: PB4476-006-009-002				
Revision:	Date:	Drawn:	Checked:	Size:	Scale:
02	08/06/2018	LB	RE	A3	1:25,000
01	04/06/2018	LB	RE	A3	1:25,000

Co-ordinate system: British National Grid EPSG: 27700





Legend:

- Norfolk Vanguard onshore red line boundary
- Onshore cable route**
- Onshore cable route
- Trenchless crossing zone (e.g. HDD)
- Indicative trenchless crossing compound
- Mobilisation zone
- Indicative mobilisation area compound
- Access**
- Construction access
- Operation access
- Cable Route Sections**
- Section 7: MA5a-W
- Section 8a: MA5b-E
- Section 9a: MA6-W

MA = Mobilisation Area

Project:	Report:
Norfolk Vanguard	Outline Traffic Management Plan

Title:

Onshore Cable Route Project Components
(map 6 of 9)

Figure:	2	Drawing No:	PB4476-006-009-002			
Revision:	Date:	Drawn:	Checked:	Size:	Scale:	
02	08/06/2018	LB	RE	A3	1:25,000	
01	04/06/2018	LB	RE	A3	1:25,000	

Co-ordinate system: British National Grid EPSG: 27700

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APPENDIX B Extract from NCC Deadline 6 Position Statement

Trenchless crossings of the A1067, B1149 and B1145

The Applicant has submitted an Outline Traffic Management Plan (DCO doc: 8.8) which commits to crossing the following highway links with trenchless crossing techniques:

- A47;
- A140; and
- A149.

NCC has identified a potential requirement for trenchless crossings of the A1067 and B1149.

The Applicant has previously set out its position with regard to these road crossings in response to the Q11.35 and Q11.38 of the Examiners second questions. In summary, the roads that are proposed to be crossed by trenchless crossing techniques and those that are proposed to be crossed by open cut trenching were discussed and agreed with NCC as part of the Norfolk Vanguard Evidence Plan Process. Trenchless crossings were proposed where it would necessary mitigate traffic impacts that would otherwise occur using an open cut trenching solution. The A1067 and B1149 were not identified as a road that required a trenchless crossing based on existing and proposed traffic flows and the DCO application was submitted on this basis.

NCC has subsequently identified that these routes may require trenchless crossings on the basis that:

- The B1149 will be used by both Norfolk Vanguard and Hornsea Project Three construction traffic and this cumulative traffic may no longer be acceptable for traffic management proposed for open cut trenching.

NCC has **not** at any time agreed an extensive list of roads that would be subject to trenchless crossing.

Where a cable duct needs to cross the width of the carriageway, trenchless crossing methods offer benefits over open trench excavation. These include minimising disruption to the operation of the network and reduced levels of traffic management. In addition, the removal of the need to break the carriageway surface and reinstate provides for a much more stable and durable installation.

- 1) A1067 – In addition to traffic management concerns relating to higher levels of use identified by the applicants, there is also an issue of long-term maintenance to the reinstatement of an open cut trench on roads of this nature. A traffic survey alone as proposed (which is limited to only examining traffic numbers) will not address this point.
- 2) B1149 - Having considered the CIA, we do not believe it would be feasible to place the traffic management measures on the B1149 proposed by the applicants as they would conflict with traffic movements to and from Hornsea 3's compound. It isn't just a question of traffic numbers from this one development alone, but rather an understanding of how the two projects interact and the nature of the traffic and movements generated cumulatively. There is also an issue of long-term maintenance to the reinstatement of an

The Applicant is undertaking the following work to determine the potential requirement for further trenchless crossing sites:

- 1) A1067 - Further traffic surveys have been commissioned to confirm pre-application traffic counts and to inform the feasibility of 'open cut' trenching under temporary traffic signal control as currently proposed by the Applicant. The outputs from the surveys are expected in early to mid-May.
- 2) B1149 - Norfolk Laboratories have been commissioned to undertake a ground investigation to inform the reinstatement design. Norfolk Laboratories are expected to report their findings of the ground investigation in early May
- 3) Review of traffic flows (both routes).

<ul style="list-style-type: none">• Traffic flows along the A1067 have increased since the pre-application surveys following the opening of the Norwich Northern Distributor Road. <p>The Applicant is progressing workstreams to respond to these matters.</p>	<p>open cut trench on roads when considering the increase in HGV traffic due to the 2 projects.</p>	<p>The results of these workstreams will be captured in a technical note that will set out the highway crossing method for each discrete site and the rationale. Expected submission for Deadline 8 (May 30).</p> <p>The technical note will be shared with NCC for comment and further engagement prior to Deadline 8.</p>
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APPENDIX C A1067 ATC Results

Site 1
 Location A1067, Att - Tree, OSGR: TG 06233 19642
 Direction Two way
 24 April 2019

9323 / Norfolk Vanguard
 April 2019
 Automatic Traffic Count

Time	Total	Classification												>PSL 50	>PSL% 50	>SL1 57 ACPO	>SL1% 57 ACPO	>SL2 65 DFT	>SL2% 65 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	7	0	6	0	1	0	0	0	0	0	0	0	0	7	100	5	71.4	2	28.6	59.5	-
0015	8	0	5	0	2	0	0	0	0	1	0	0	0	5	62.5	4	50	1	12.5	56.8	-
0030	10	0	10	0	0	0	0	0	0	0	0	0	0	8	80	4	40	3	30	61	-
0045	5	0	4	0	0	0	0	0	0	0	1	0	0	4	80	3	60	2	40	64	-
0100	4	0	3	0	1	0	0	0	0	0	0	0	0	4	100	2	50	2	50	64.1	-
0115	4	0	2	0	1	0	0	0	0	0	1	0	0	3	75	1	25	0	0	52.3	-
0130	5	0	3	0	2	0	0	0	0	0	0	0	0	4	80	1	20	0	0	53.3	-
0145	3	0	1	0	1	0	0	0	0	1	0	0	0	3	100	0	0	0	0	54	-
0200	6	0	5	0	1	0	0	0	0	0	0	0	0	4	66.7	1	16.7	0	0	51.1	-
0215	4	0	3	0	1	0	0	0	0	0	0	0	0	2	50	2	50	0	0	51.3	-
0230	6	0	3	0	1	0	0	0	0	2	0	0	0	6	100	3	50	1	16.7	60.3	-
0245	4	0	4	0	0	0	0	0	0	0	0	0	0	4	100	2	50	0	0	56.1	-
0300	3	0	2	0	1	0	0	0	0	0	0	0	0	3	100	3	100	2	66.7	67.6	-
0315	2	0	1	0	0	0	0	0	0	1	0	0	0	2	100	1	50	0	0	59.1	-
0330	2	0	1	0	1	0	0	0	0	0	0	0	0	2	100	2	100	0	0	59.5	-
0345	2	0	1	0	1	0	0	0	0	0	0	0	0	2	100	0	0	0	0	51.3	-
0400	3	0	1	0	0	0	0	0	0	1	1	0	0	3	100	1	33.3	0	0	55.8	-
0415	7	0	6	0	0	0	0	0	0	0	1	0	0	6	85.7	4	57.1	4	57.1	64.8	-
0430	14	1	6	0	3	1	0	0	0	2	1	0	0	10	71.4	4	28.6	0	0	52.4	60.6
0445	16	0	13	0	2	0	0	0	0	1	0	0	0	11	68.8	4	25	1	6.3	52.2	58.6
0500	20	2	11	0	7	0	0	0	0	0	0	0	0	17	85	10	50	5	25	57.5	65.8
0515	27	1	25	0	1	0	0	0	0	0	0	0	0	21	77.8	14	51.9	5	18.5	57	67.1
0530	52	0	42	1	4	2	0	0	0	1	2	2	0	48	92.3	25	48.1	9	17.3	58.5	66.7
0545	28	1	23	0	4	0	0	0	0	0	0	0	0	22	78.6	11	39.3	2	7.1	55.6	61.1
0600	75	2	55	1	6	1	2	0	3	2	3	0	0	57	76	27	36	9	12	54.9	63.1
0615	114	2	93	2	12	1	1	0	1	0	2	0	0	95	83.3	34	29.8	8	7	54.5	60.6
0630	126	2	104	0	17	0	0	0	1	2	0	0	0	101	80.2	41	32.5	12	9.5	54.8	62.2
0645	155	0	119	2	24	1	2	0	2	3	2	0	0	120	77.4	34	21.9	8	5.2	53.4	59.3
0700	207	1	170	1	27	0	2	0	1	2	2	1	0	153	73.9	32	15.5	4	1.9	52.3	57
0715	256	1	211	3	30	0	3	0	4	3	0	0	1	177	69.1	42	16.4	2	0.8	51.7	57.7
0730	314	0	257	3	42	3	2	0	1	3	3	0	0	157	50	20	6.4	0	0	50	54.1
0745	259	1	207	3	39	4	2	0	0	1	2	0	0	147	56.8	40	15.4	1	0.4	51.2	56.8
0800	291	3	239	1	41	3	1	0	2	0	1	0	0	164	56.4	31	10.7	2	0.7	50.3	55.9
0815	301	3	236	2	53	0	1	1	1	3	1	0	0	148	49.2	29	9.6	3	1	50.1	55.5
0830	289	1	237	6	36	0	2	0	2	1	4	0	0	167	57.8	21	7.3	1	0.3	50.2	55
0845	238	0	201	5	28	0	0	0	1	2	1	0	0	126	52.9	23	9.7	1	0.4	50.1	54.4
0900	207	0	164	3	34	2	1	0	0	1	2	0	0	123	59.4	13	6.3	3	1.4	50.5	55.5
0915	182	4	140	3	28	3	2	0	1	0	1	0	0	96	52.7	12	6.6	1	0.5	49.5	55
0930	191	3	154	2	28	2	0	0	0	0	1	0	1	90	47.1	19	9.9	1	0.5	47.7	54.6
0945	190	4	151	2	28	1	1	0	0	0	3	0	0	94	49.5	10	5.3	1	0.5	49.8	53.9
1000	176	2	143	1	25	1	1	0	2	0	1	0	0	85	48.3	19	10.8	1	0.6	48.4	55.9
1015	198	2	170	1	20	2	0	0	0	2	1	0	0	75	37.9	15	7.6	0	0	48.6	53.2
1030	179	1	152	0	21	2	1	0	0	2	0	0	0	80	44.7	18	10.1	0	0	49.1	54.8
1045	168	0	134	2	23	1	2	0	3	1	1	0	1	76	45.2	5	3	2	1.2	48.8	53
1100	181	1	146	1	25	2	2	0	2	1	1	0	0	72	39.8	11	6.1	1	0.6	48.5	53.5
1115	187	5	157	2	18	2	0	0	0	2	1	0	0	66	35.3	14	7.5	2	1.1	47.7	53.5
1130	154	3	116	1	26	2	3	0	0	3	0	0	0	69	44.8	7	4.5	0	0	49.5	53.9
1145	167	3	134	2	18	3	2	0	4	0	1	0	0	95	56.9	19	11.4	2	1.2	49.9	55.7
1200	154	1	130	0	16	0	2	1	1	2	1	0	0	80	51.9	20	13	2	1.3	50.9	56.4
1215	148	0	121	3	15	2	1	0	3	1	2	0	0	82	55.4	13	8.8	2	1.4	50.4	55
1230	166	0	141	3	14	1	1	0	0	4	2	0	0	109	65.7	16	9.6	3	1.8	51	55
1245	166	0	142	2	16	0	1	1	1	1	3	0	0	99	59.6	21	12.7	3	1.8	51.4	55.7
1300	162	2	128	2	23	2	0	1	1	1	2	0	0	75	46.3	9	5.6	2	1.2	48.2	54.6
1315	149	1	118	1	21	0	2	1	0	0	4	1	0	91	61.1	17	11.4	0	0	50.4	55.9
1330	141	5	108	3	22	0	1	0	0	1	0	0	0	106	75.2	22	15.6	1	0.7	52.5	57
1345	162	0	136	2	17	0	1	0	1	2	3	0	0	83	51.2	12	7.4	0	0	49.6	53.5
1400	178	1	147	1	15	2	1	0	5	3	3	0	0	99	55.6	18	10.1	2	1.1	50.1	55.7
1415	166	0	132	5	21	0	2	1	0	3	2	0	0	100	60.2	11	6.6	2	1.2	51.4	55.7
1430	171	2	133	2	28	1	2	0	2	1	0	0	0	99	57.9	21	12.3	1	0.6	50.8	55.9
1445	190	3	154	0	29	1	0	0	2	1	0	0	0	80	42.1	11	5.8	1	0.5	48.8	54.1
1500	188	1	156	0	20	4	1	0	2	3	1	0	0	96	51.1	13	6.9	2	1.1	49.8	54.8
1515	217	1	177	2	32	0	2	0	1	1	1	0	0	128	59	17	7.8	0	0	50.9	54.8
1530	220	0	186	1	26	0	2	1	3	0	0	0	1	127	57.7	23	10.5	1	0.5	50.2	55
1545	243	3	201	2	32	0	1	0	2	2	0	0	0	128	52.7	19	7.8	4	1.6	49.2	54.6
1600	254	3	209	4	36	0	0	0	0	1	1	0	0	154	60.6	21	8.3	2	0.8	50.2	55.3
1615	264	3	219	2	37	0	0	0	1	0	2	0	0	144	54.5	28	10.6	2	0.8	49.9	55.3
1630	257	2	231	2	20	0	1	0	0	1	0	0	0	167	65	28	10.9	3	1.2	51.6	55.9
1645	240	3	203	1	26	0	1	0	0	5	1	0	0	140	58.3	39	16.3	2	0.8	51.2	57.3
1700	268	3	226	3	34	1	0	0	0	1	0	0	0	173	64.6	40	14.9	5	1.9	51.6	56.8
1715	299	1	267	3	26	1	1	0	0	0	0	0	0	211	70.6	40	13.4	5	1.7	51.9	56.4
1730	263	1	238	1	21	1	0	0	1	0	0	0	0	189	71.9	45	17.1	1	0.4	51.6	57.3
1745	200	1	186	1	11	0	1	0	0	0	0	0	0	128	64	54	27	8	4	52.1	59.9
1800	179	2	158	3	14	0	1	0	0	0	0	1	0	118	65.9	19	10.6	4	2.2	50.5	55.9
1815	195	0	181	1	11	0	1	0	0	1	0	0	0	166	85.1	49	25.1	5	2.6	54	59.3
1830	138	3	125	0	10	0	0	0	0	0	0	0	0	100	72.5	35	25.4	4	2		

Site 1
 Location A1067, Att - Tree, OSGR: TG 06233 19642
 Direction Two way
 25 April 2019

9323 / Norfolk Vanguard
 April 2019
 Automatic Traffic Count

Time	Total	Classification												>PSL 50	>PSL% 50	>SL1 57 ACPO	>SL1% 57 ACPO	>SL2 65 DFT	>SL2% 65 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	7	0	6	1	0	0	0	0	0	0	0	0	0	7	100	3	42.9	2	28.6	58	-
0015	4	0	3	0	0	0	0	0	0	1	0	0	0	4	100	0	0	0	0	52.7	-
0030	10	0	9	0	0	0	0	0	0	1	0	0	0	8	80	6	60	3	30	56.8	-
0045	2	0	0	0	1	0	0	0	0	0	1	0	0	2	100	1	50	0	0	57.3	-
0100	7	0	5	0	2	0	0	0	0	0	0	0	0	4	57.1	0	0	0	0	51.1	-
0115	8	0	5	0	2	0	0	0	0	0	1	0	0	5	62.5	2	25	1	12.5	52.1	-
0130	4	0	3	0	1	0	0	0	0	0	0	0	0	3	75	2	50	2	50	63	-
0145	6	0	6	0	0	0	0	0	0	0	0	0	0	2	33.3	0	0	0	0	40.8	-
0200	7	0	6	0	1	0	0	0	0	0	0	0	0	3	42.9	1	14.3	0	0	43.3	-
0215	5	0	4	0	0	0	0	0	0	1	0	0	0	3	60	1	20	1	20	55.7	-
0230	4	0	3	0	0	0	0	0	0	1	0	0	0	3	75	2	50	1	25	55.4	-
0245	4	0	3	0	0	0	0	0	0	0	1	0	0	4	100	2	50	2	50	59.3	-
0300	5	0	3	0	2	0	0	0	0	0	0	0	0	3	60	3	60	1	20	59.5	-
0315	5	0	4	0	1	0	0	0	0	0	0	0	0	5	100	4	80	1	20	58.8	-
0330	15	0	12	0	1	0	0	0	0	0	1	1	0	11	73.3	7	46.7	3	20	56.7	65.5
0345	9	0	6	0	2	0	0	0	0	0	1	0	0	9	100	3	33.3	2	22.2	59.3	-
0400	9	0	7	0	2	0	0	0	0	0	0	0	0	9	100	6	66.7	5	55.6	72.2	-
0415	11	0	8	0	1	1	0	0	0	0	1	0	0	6	54.5	2	18.2	2	18.2	55.5	55.3
0430	11	0	7	0	3	0	0	0	0	0	1	0	0	7	63.6	2	18.2	1	9.1	50.5	56.6
0445	20	1	13	0	5	0	0	0	0	0	1	0	0	16	80	7	35	2	10	56.6	58.4
0500	21	0	16	0	3	0	0	0	0	1	0	1	0	16	76.2	5	23.8	1	4.8	54.1	57.3
0515	33	2	24	0	2	1	0	0	0	0	2	2	0	23	69.7	11	33.3	3	9.1	54.8	62.2
0530	44	0	35	0	4	0	1	0	0	1	3	0	0	41	93.2	23	52.3	12	27.3	59.5	66.7
0545	51	1	32	0	11	1	0	0	0	0	3	3	0	39	76.5	24	47.1	7	13.7	56.5	64.4
0600	73	2	60	0	7	0	1	0	0	1	0	2	0	59	80.8	33	45.2	10	13.7	55.5	61.7
0615	112	1	91	1	14	2	1	0	0	0	1	0	1	92	82.1	34	30.4	6	5.4	54.4	59.9
0630	129	2	103	1	19	1	2	0	0	0	1	0	0	85	65.9	34	26.4	7	5.4	52.6	60.8
0645	143	0	117	0	21	1	0	0	0	2	1	1	0	119	83.2	43	30.1	7	4.9	55.1	59.7
0700	202	1	169	1	26	0	3	0	0	0	1	1	0	143	70.8	52	25.7	1	0.5	52.5	58.2
0715	268	0	221	3	33	2	4	0	0	4	0	1	0	130	48.5	24	9	3	1.1	49.8	54.1
0730	273	1	248	1	20	1	1	0	0	0	0	1	0	145	53.1	32	11.7	1	0.4	50.5	55.9
0745	293	1	238	1	42	2	2	1	0	1	4	1	0	170	58	18	6.1	0	0	50.3	55.5
0800	268	3	223	1	30	1	2	0	0	1	1	6	0	167	62.3	17	6.3	2	0.7	51.1	54.6
0815	254	1	209	4	35	2	1	0	1	0	1	0	0	120	47.2	23	9.1	1	0.4	49.4	54.8
0830	247	2	196	3	39	0	2	0	2	0	3	0	0	111	44.9	13	5.3	1	0.4	48.3	53.7
0845	245	0	201	0	31	5	1	2	1	1	2	0	1	133	54.3	19	7.8	2	0.8	50.4	55.3
0900	209	0	163	3	31	1	3	0	1	6	1	0	0	85	40.7	17	8.1	5	2.4	47.6	53.7
0915	194	0	156	1	32	1	0	0	0	1	0	3	0	81	41.8	10	5.2	1	0.5	48.9	53.9
0930	193	0	154	3	25	2	1	0	4	2	2	0	0	79	40.9	9	4.7	1	0.5	48.4	53.2
0945	191	0	155	0	27	0	1	0	1	5	2	0	0	101	52.9	8	4.2	0	0	48.3	53.5
1000	161	0	118	2	29	2	0	1	0	5	4	0	0	63	39.1	5	3.1	1	0.6	48.4	52.1
1015	141	1	118	1	13	3	2	1	0	2	0	0	0	63	44.7	15	10.6	3	2.1	49.9	55.3
1030	169	1	127	2	26	2	4	0	0	4	0	2	1	79	46.7	9	5.3	1	0.6	49.3	53.9
1045	160	1	131	2	17	2	3	0	0	1	3	0	0	76	47.5	9	5.6	2	1.3	50	53.7
1100	168	0	139	3	19	2	1	0	1	2	1	0	0	89	53	12	7.1	1	0.6	49.4	54.6
1115	154	0	126	2	23	3	0	0	0	0	0	0	0	77	50	11	7.1	1	0.6	49.3	53.7
1130	178	0	149	1	13	3	1	0	0	3	4	4	0	93	52.2	14	7.9	1	0.6	49.8	55.3
1145	173	0	144	3	22	0	1	1	2	0	0	0	0	94	54.3	16	9.2	1	0.6	50.6	55
1200	157	0	132	3	14	1	1	0	1	3	2	0	0	82	52.2	5	3.2	1	0.6	49.7	53.2
1215	197	2	155	3	28	2	2	0	0	1	3	1	0	72	36.5	9	4.6	1	0.5	47.7	53.2
1230	172	0	148	0	16	1	1	0	0	2	3	0	1	87	50.6	10	5.8	0	0	49.7	53.7
1245	172	0	138	1	24	1	1	1	1	2	3	0	0	86	50	9	5.2	3	1.7	50.2	53.7
1300	143	1	114	1	21	2	1	0	2	0	1	0	0	58	40.6	9	6.3	2	1.4	49.3	53.2
1315	178	1	145	5	21	0	0	0	0	3	3	0	0	74	41.6	4	2.2	1	0.6	48.3	52.6
1330	170	4	138	0	23	0	2	0	0	1	2	0	0	99	58.2	16	9.4	2	1.2	49.8	55
1345	162	1	137	2	19	0	1	1	0	0	1	0	0	95	58.6	13	8	0	0	48.8	55.7
1400	158	0	132	0	18	0	3	0	0	3	0	2	0	52	32.9	12	7.6	2	1.3	46.8	53.9
1415	196	0	161	3	29	0	0	0	1	1	1	0	0	110	56.1	11	5.6	0	0	49.5	54.1
1430	163	0	134	1	22	0	2	0	0	1	1	2	0	91	55.8	13	8	2	1.2	50.9	55
1445	194	1	166	0	21	4	0	1	0	0	1	0	0	108	55.7	14	7.2	1	0.5	50.4	55
1500	170	0	141	1	15	2	2	1	3	3	2	0	0	81	47.6	14	8.2	2	1.2	50	54.1
1515	181	0	153	2	21	1	2	0	0	2	0	0	0	96	53	27	14.9	4	2.2	50.4	56.8
1530	231	2	190	2	29	0	1	1	2	1	3	0	0	119	51.5	15	6.5	1	0.4	49.5	54.6
1545	230	1	188	2	32	1	1	0	3	1	0	0	1	115	50	28	12.2	1	0.4	49.2	56.1
1600	223	1	193	2	25	1	0	0	1	0	0	0	0	143	64.1	29	13	5	2.2	51.7	56.1
1615	226	3	188	4	26	1	1	0	0	2	1	0	0	173	76.5	30	13.3	3	1.3	51.7	56.6
1630	256	2	210	2	39	1	1	0	0	0	1	0	0	151	59	20	7.8	2	0.8	49.2	55.5
1645	301	0	264	4	26	1	2	0	3	0	1	0	0	164	54.5	27	9	3	1	49.1	54.8
1700	281	1	253	2	21	0	1	0	1	2	0	0	0	161	57.3	20	7.1	0	0	49.2	54.4
1715	340	1	302	2	34	0	1	0	0	0	0	0	0	189	55.6	43	12.6	4	1.2	50.1	56.1
1730	250	0	220	4	24	1	0	0	0	0	1	0	0	158	63.2	42	16.8	4	1.6	51.2	57.3
1745	210	0	196	1	10	0	0	0	0	0	1	2	0	155	73.8	39	18.6	4	1.9	52.9	57.5
1800	199	1	183	1	14	0	0	0	0	0	0	0	0	138	69.3	36	18.1	4	2	52.6	57.5
1815	158	2	142	0	11	0	0	0	0	0	1	2	0	130	82.3	39	24.7	7	4.4	54	59.3
1830	168	1	161	0	4	0	0	0	0	1	1	0	0	87	51.8	34	20.				

Site 1
 Location A1067, Att - Tree, OSGR: TG 06233 19642
 Direction Two way
 26 April 2019

9323 / Norfolk Vanguard
 April 2019
 Automatic Traffic Count

Time	Total	Classification												>PSL 50	>PSL% 50	>SL1 57 ACPO	>SL1% 57 ACPO	>SL2 65 DFT	>SL2% 65 DFT	Mean	Vpp 85	
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT									
0000	13	0	11	0	1	0	0	0	1	0	0	0	0	0	9	69.2	5	38.5	1	7.7	53.7	62.6
0015	7	1	4	0	2	0	0	0	0	0	0	0	0	0	7	100	6	85.7	2	28.6	63.5	-
0030	10	0	9	0	1	0	0	0	0	0	0	0	0	0	10	100	5	50	2	20	59.2	-
0045	4	0	3	0	1	0	0	0	0	0	0	0	0	0	4	100	4	100	1	25	60.9	-
0100	4	0	4	0	0	0	0	0	0	0	0	0	0	0	4	100	4	100	1	25	64.8	-
0115	8	0	8	0	0	0	0	0	0	0	0	0	0	0	8	100	7	87.5	3	37.5	67.3	-
0130	6	0	4	0	2	0	0	0	0	0	0	0	0	0	4	66.7	1	16.7	0	0	51.4	-
0145	4	0	4	0	0	0	0	0	0	0	0	0	0	0	3	75	2	50	2	50	61.1	-
0200	3	0	2	0	1	0	0	0	0	0	0	0	0	0	3	100	2	66.7	0	0	56.8	-
0215	8	0	7	0	0	0	0	0	0	1	0	0	0	0	6	75	4	50	2	25	56.9	-
0230	5	0	2	0	3	0	0	0	0	0	0	0	0	0	2	40	2	40	0	0	53.6	-
0245	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2	100	1	50	0	0	58	-
0300	8	0	6	0	0	0	0	0	0	1	1	0	0	0	7	87.5	2	25	1	12.5	56.9	-
0315	4	0	2	0	0	0	0	0	0	1	1	0	0	0	2	50	1	25	0	0	52.6	-
0330	6	0	3	0	2	0	0	0	0	1	0	0	0	0	4	66.7	3	50	1	16.7	56.3	-
0345	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	100	1	100	1	100	65.1	-
0400	4	0	2	0	2	0	0	0	0	0	0	0	0	0	4	100	3	75	2	50	73.3	-
0415	8	0	5	0	1	0	0	0	0	0	2	0	0	0	7	87.5	4	50	3	37.5	63.2	-
0430	10	0	7	0	1	0	0	0	0	2	0	0	0	0	4	40	2	20	1	10	49.1	-
0445	13	0	9	0	3	0	0	0	0	1	0	0	0	0	9	69.2	3	23.1	2	15.4	54.1	59.1
0500	16	1	8	0	5	1	0	0	0	0	1	0	0	0	11	68.8	3	18.8	0	0	52.9	57.5
0515	34	1	25	0	5	0	1	0	0	1	1	0	0	0	31	91.2	15	44.1	3	8.8	57	64
0530	41	0	35	0	4	0	1	0	0	1	0	0	0	0	38	92.7	24	58.5	4	9.8	58.3	62.6
0545	39	0	31	0	6	0	1	0	0	0	1	0	0	0	35	89.7	28	71.8	14	35.9	61.3	66.9
0600	60	2	41	2	11	1	0	0	1	1	1	0	0	0	46	76.7	18	30	7	11.7	52.9	62.2
0615	93	1	74	2	10	1	3	0	1	1	0	0	0	0	76	81.7	22	23.7	7	7.5	54.9	59.9
0630	115	0	100	1	6	2	0	0	2	1	3	0	0	0	91	79.1	42	36.5	13	11.3	55	63.3
0645	138	0	120	0	13	0	1	1	1	1	1	0	0	0	93	67.4	47	34.1	11	8	53.5	62.2
0700	191	3	158	3	23	0	0	0	1	2	1	0	0	0	152	79.6	56	29.3	13	6.8	54.4	60.6
0715	229	2	191	1	26	1	1	1	0	3	0	0	0	0	144	62.9	24	10.5	2	0.9	50.9	55.9
0730	279	0	237	0	37	0	0	0	3	1	1	0	0	188	67.4	37	13.3	3	1.1	52	56.1	
0745	269	1	234	1	29	3	0	0	0	1	0	0	0	0	157	58.4	38	14.1	3	1.1	50.4	56.6
0800	269	1	215	2	42	4	1	0	0	3	0	1	0	0	176	65.4	32	11.9	0	0	51.2	55.7
0815	246	4	201	3	33	0	0	0	1	2	2	0	0	0	130	52.8	30	12.2	3	1.2	49.4	56.1
0830	233	2	191	7	23	0	2	0	2	2	3	0	0	1	121	51.9	25	10.7	2	0.9	50.6	55.3
0845	194	0	153	2	31	0	0	0	0	3	3	2	0	0	123	63.4	29	14.9	0	0	51.3	56.6
0900	197	0	156	5	23	0	2	0	0	6	3	2	0	0	84	42.6	23	11.7	3	1.5	47.7	55.5
0915	195	2	161	1	23	2	0	0	1	1	4	0	0	0	114	58.5	13	6.7	5	2.6	51	54.1
0930	188	2	147	4	28	1	0	0	2	0	4	0	0	0	82	43.6	15	8	3	1.6	48.7	54.6
0945	184	2	148	1	24	0	0	0	1	3	3	1	1	1	72	39.1	13	7.1	2	1.1	47.7	53.5
1000	173	1	138	6	24	1	2	0	0	0	0	0	0	1	90	52	16	9.2	1	0.6	50.2	54.8
1015	209	2	170	3	25	3	4	0	0	0	2	0	0	0	130	62.2	17	8.1	1	0.5	50.9	55.3
1030	191	0	160	1	28	0	1	0	0	0	1	0	0	0	123	64.4	16	8.4	2	1	51.2	55
1045	178	0	142	1	24	1	2	0	0	1	3	4	0	0	73	41	8	4.5	0	0	49.5	54.8
1100	174	4	137	1	23	3	1	0	1	1	1	2	0	1	96	55.2	21	12.1	4	2.3	49.2	56.1
1115	153	4	119	3	18	0	2	1	2	3	1	0	0	0	82	53.6	13	8.5	0	0	50	55.7
1130	163	1	125	5	23	0	1	0	2	4	2	0	0	0	74	45.4	15	9.2	2	1.2	49.8	55.3
1145	197	2	149	7	31	1	2	0	0	2	3	0	0	0	96	48.7	10	5.1	1	0.5	49	53.9
1200	177	1	143	1	25	1	1	0	0	2	3	0	0	0	105	59.3	15	8.5	3	1.7	50.6	54.4
1215	176	4	144	2	20	0	0	0	1	2	3	0	0	0	103	58.5	20	11.4	2	1.1	50.9	56.1
1230	207	1	169	3	26	3	0	0	0	2	3	0	0	0	108	52.2	23	11.1	2	1	50	55.5
1245	162	0	136	1	13	0	3	0	0	2	4	3	0	0	95	58.6	15	9.3	2	1.2	50.7	55.5
1300	166	1	135	3	22	0	0	2	0	1	2	0	0	0	128	77.1	17	10.2	5	3	52.5	56.4
1315	163	0	140	3	17	0	2	0	1	0	0	0	0	0	114	69.9	20	12.3	1	0.6	51.8	55.7
1330	165	1	131	2	22	1	0	0	0	2	4	2	0	0	100	60.6	16	9.7	3	1.8	51.7	54.8
1345	178	6	149	1	18	2	0	0	0	2	0	0	0	0	91	51.1	14	7.9	2	1.1	49.3	55
1400	190	4	150	1	27	1	0	0	1	4	0	2	0	0	90	47.4	18	9.5	0	0	48.7	55.7
1415	187	0	157	1	25	0	1	1	1	0	1	0	0	0	109	58.3	17	9.1	1	0.5	50.8	55.5
1430	204	1	165	1	27	2	0	0	1	4	3	0	0	0	98	48	18	8.8	3	1.5	50.1	54.6
1445	231	3	201	1	15	2	1	0	0	1	5	2	0	0	146	63.2	26	11.3	3	1.3	51.6	55.9
1500	173	0	148	1	21	0	0	0	0	1	1	1	0	0	97	56.1	12	6.9	2	1.2	50.6	54.4
1515	200	1	172	2	17	1	0	2	3	1	1	0	0	0	135	67.5	26	13	7	3.5	52.3	56.1
1530	249	2	201	3	34	2	1	0	2	3	1	0	0	0	148	59.4	27	10.8	3	1.2	50.8	55.7
1545	257	0	210	1	41	2	1	0	0	1	0	1	0	0	141	54.9	16	6.2	2	0.8	50.2	54.4
1600	281	5	238	1	32	1	1	0	1	0	2	0	0	0	163	58	27	9.6	1	0.4	49.2	55.7
1615	298	3	256	1	33	0	1	0	2	2	0	0	0	0	182	61.1	25	8.4	2	0.7	49.4	54.6
1630	244	1	200	3	36	0	0	0	1	2	1	0	0	0	172	70.5	34	13.9	3	1.2	52.2	56.8
1645	254	1	224	3	19	1	1	0	2	1	2	0	0	0	129	50.8	30	11.8	3	1.2	50.3	55.7
1700	302	4	264	3	26	0	2	2	2	0	0	0	0	184	60.9	37	12.3	1	0.3	51.4	56.4	
1715	291	4	258	3	21	0	0	0	0	2	2	1	0	0	195	67	46	15.8	2	0.7	50.4	57
1730	222	1	200	0	17	0	1	0	0	2	1	0	0	0	153	68.9	46	20.7	12	5.4	52.8	58.8
1745	226	3	198	5	15	1	2	0	0	1	1	0	0	0	119	52.7	22	9.7	3	1.3	49.6	55.5

Site: 1
 Location: A1067, Att - Tree, OSGR: TG 06233 19642
 Direction: Two way
 27 April 2019

9323 / Norfolk Vanguard
 April 2019
 Automatic Traffic Count

Time	Total	Classification												>PSL 50	>PSL% 50	>SL1 57 ACPO	>SL1% 57 ACPO	>SL2 65 DFT	>SL2% 65 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	25	0	25	0	0	0	0	0	0	0	0	0	0	20	80	10	40	2	8	55.7	63.1
0015	18	0	14	0	3	0	0	0	1	0	0	0	0	12	66.7	7	38.9	2	11.1	56.1	64.4
0030	20	0	16	0	4	0	0	0	0	0	0	0	0	17	85	11	55	3	15	58.1	64.2
0045	17	1	15	0	1	0	0	0	0	0	0	0	0	17	100	8	47.1	1	5.9	57.3	62.4
0100	14	0	12	0	2	0	0	0	0	0	0	0	0	13	92.9	7	50	0	0	57.4	61.5
0115	5	0	2	0	2	0	0	0	1	0	0	0	0	3	60	2	40	1	20	56.2	-
0130	7	0	5	0	1	0	0	0	0	0	1	0	0	5	71.4	2	28.6	0	0	53	-
0145	8	0	7	0	1	0	0	0	0	0	0	0	0	7	87.5	2	25	1	12.5	56.6	-
0200	6	0	6	0	0	0	0	0	0	0	0	0	0	5	83.3	4	66.7	1	16.7	60.9	-
0215	5	0	5	0	0	0	0	0	0	0	0	0	0	5	100	2	40	1	20	62.5	-
0230	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48.3	-
0245	2	0	2	0	0	0	0	0	0	0	0	0	0	2	100	2	100	0	0	64.5	-
0300	4	0	2	0	2	0	0	0	0	0	0	0	0	4	100	3	75	0	0	60.5	-
0315	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47.4	-
0330	2	0	0	0	1	0	0	0	0	1	0	0	0	1	50	0	0	0	0	48.3	-
0345	3	0	3	0	0	0	0	0	0	0	0	0	0	3	100	3	100	1	33.3	63.9	-
0400	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	0	0	0	0	50.2	-
0415	8	0	7	0	1	0	0	0	0	0	0	0	0	6	75	6	75	5	62.5	63.9	-
0430	2	0	2	0	0	0	0	0	0	0	0	0	0	2	100	2	100	0	0	61.1	-
0445	6	0	5	0	1	0	0	0	0	0	0	0	0	5	83.3	3	50	1	16.7	59.4	-
0500	17	1	13	0	2	0	0	0	1	0	0	0	0	14	82.4	9	52.9	4	23.5	57.8	65.1
0515	14	1	12	0	0	0	0	0	0	1	0	0	0	11	78.6	9	64.3	7	50	63.2	72.5
0530	18	0	17	0	1	0	0	0	0	0	0	0	0	16	88.9	11	61.1	5	27.8	59.7	66.2
0545	11	0	6	0	2	0	0	0	0	1	2	0	0	9	81.8	4	36.4	2	18.2	55.1	58.2
0600	28	2	16	1	5	0	1	0	1	1	1	0	0	25	89.3	14	50	10	35.7	58.9	70
0615	41	1	37	1	1	1	0	0	0	0	0	0	0	38	92.7	17	41.5	6	14.6	57	62.9
0630	40	0	34	0	2	0	0	0	1	1	2	0	0	33	82.5	18	45	5	12.5	57.1	63.8
0645	40	0	30	0	9	0	1	0	0	0	0	0	0	30	75	15	37.5	3	7.5	53.8	61.5
0700	58	1	52	0	2	1	0	0	0	1	1	0	0	44	75.9	26	44.8	7	12.1	54.2	63.8
0715	50	0	40	1	6	1	0	0	2	0	0	0	0	35	70	14	28	4	8	54.3	62
0730	76	0	61	2	9	0	1	0	1	1	1	0	0	50	65.8	22	28.9	5	6.6	52.8	60.6
0745	76	1	58	0	12	0	0	0	1	1	3	0	0	54	71.1	14	18.4	2	2.6	51.4	57.9
0800	87	0	77	0	9	0	0	0	0	0	1	0	0	54	62.1	23	26.4	6	6.9	52.6	58.6
0815	88	2	71	1	10	0	1	0	1	0	2	0	0	54	61.4	16	18.2	2	2.3	51.1	57.9
0830	110	1	90	1	14	1	0	0	1	2	0	0	0	62	56.4	20	18.2	5	4.5	48.9	58.6
0845	105	0	87	0	14	0	1	1	1	1	0	0	0	57	54.3	14	13.3	1	1	50.4	55.7
0900	146	0	127	3	13	1	1	0	0	1	0	0	0	89	61	15	10.3	1	0.7	51.6	55.5
0915	146	0	132	2	11	0	0	0	1	0	0	0	0	98	67.1	26	17.8	2	1.4	51.1	57.5
0930	136	0	121	1	12	0	0	1	1	0	0	0	0	89	65.4	12	8.8	1	0.7	50.9	56.1
0945	155	0	135	1	15	1	0	0	1	2	0	0	0	101	65.2	22	14.2	2	1.3	52.4	56.8
1000	165	0	150	2	13	0	0	0	0	0	0	0	0	90	54.5	25	15.2	0	0	51.1	56.8
1015	181	0	166	2	12	0	0	0	1	0	0	0	0	107	59.1	30	16.6	6	3.3	51.8	57.3
1030	193	2	174	2	13	0	0	0	1	0	1	0	0	90	46.6	12	6.2	3	1.6	49.3	54.6
1045	172	0	158	0	10	1	0	0	2	0	1	0	0	91	52.9	24	14	3	1.7	50.6	56.6
1100	186	4	172	2	6	0	0	0	0	0	1	0	1	69	37.1	9	4.8	0	0	49.1	53.5
1115	213	1	201	0	9	0	0	0	0	1	0	0	1	96	45.1	9	4.2	0	0	49	53.2
1130	192	0	181	1	9	0	0	0	0	0	1	0	0	109	56.8	24	12.5	1	0.5	51.1	55.9
1145	149	1	132	0	12	0	1	0	1	0	2	0	0	73	49	9	6	1	0.7	50.7	55.5
1200	171	0	158	1	10	0	0	0	0	2	0	0	0	97	56.7	20	11.7	2	1.2	50.9	56.4
1215	187	0	176	1	8	1	0	0	0	1	0	0	0	101	54	21	11.2	0	0	50.8	55.7
1230	168	2	154	1	6	1	0	0	0	2	2	0	0	71	42.3	17	10.1	2	1.2	48.9	55.3
1245	160	1	155	0	4	0	0	0	0	0	0	0	0	71	44.4	15	9.4	1	0.6	48	54.1
1300	169	0	159	1	8	0	0	0	0	1	0	0	0	60	35.5	13	7.7	1	0.6	48.9	53.2
1315	153	0	144	2	7	0	0	0	0	0	0	0	0	101	66	28	18.3	3	2	52.2	57.3
1330	153	1	144	0	5	0	0	0	0	1	1	0	0	118	77.1	24	15.7	3	2	53	57.3
1345	184	0	169	1	12	1	0	0	1	0	0	0	0	97	52.7	25	13.6	3	1.6	51	55.3
1400	161	0	149	1	11	0	0	0	0	0	0	0	0	98	60.9	32	19.9	2	1.2	51.3	58.2
1415	155	0	146	1	8	0	0	0	0	0	0	0	0	98	63.2	23	14.8	1	0.6	51.3	56.8
1430	165	0	154	3	6	0	0	0	2	0	0	0	0	101	61.2	12	7.3	0	0	50.3	54.6
1445	169	2	155	1	9	0	0	0	2	0	0	0	0	99	58.6	17	10.1	2	1.2	50.6	55.7
1500	142	0	131	2	8	0	0	0	1	0	0	0	0	92	64.8	20	14.1	2	1.4	51.8	56.1
1515	159	0	148	0	9	0	0	1	1	0	0	0	0	85	53.5	17	10.7	1	0.6	50.2	55.7
1530	142	1	129	0	12	0	0	0	0	0	0	0	0	97	68.3	20	14.1	5	3.5	52.3	56.4
1545	154	3	139	1	10	0	0	0	0	0	1	0	0	104	67.5	21	13.6	6	3.9	52	56.1
1600	169	1	161	0	5	0	0	0	0	2	0	0	0	93	55	20	11.8	1	0.6	49.6	56.1
1615	184	1	172	1	9	0	0	0	0	1	0	0	0	77	41.8	8	4.3	2	1.1	48.3	53.7
1630	169	0	158	0	10	0	0	0	1	0	0	0	0	99	58.6	34	20.1	6	3.6	51	58.2
1645	169	2	159	1	7	0	0	0	0	0	0	0	0	106	62.7	30	17.8	3	1.8	51.9	57.7
1700	189	1	179	1	7	0	0	0	0	1	0	0	0	109	57.7	22	11.6	0	0	50.4	55.9
1715	166	0	157	0	9	0	0	0	0	0	0	0	0	106	63.9	23	13.9	3	1.8	51.6	56.6
1730	142	1	134	0	7	0	0	0	0	0	0	0	0	100	70.4	28	19.7	0	0	51.5	57.7
1745	140	0	132	1	7	0	0	0	0	0	0	0	0	90	64.3	30	21.4	3	2.1	51.8	58.2
1800	125	0	120	0	5	0	0	0	0	0	0	0	0	89	71.2	33	26.4	4	3.2	53.3	59.1
1815	139	1	130	1	7	0	0	0	0	0	0	0	0	91	65.5	22	15.8	1	0.7	52.3	57
1830	106	0	101	0	5	0	0	0	0	0	0	0	0	79	74.5	27	25.5	2	1.9	53.3	58.8

Site 1
 Location A1067, Att - Tree, OSGR: TG 06233 19642
 Direction Two way
 28 April 2019

9323 / Norfolk Vanguard
 April 2019
 Automatic Traffic Count

Time	Total	Classification												>PSL 50	>PSL% 50	>SL1 57 ACPO	>SL1% 57 ACPO	>SL2 65 DFT	>SL2% 65 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	26	0	25	0	1	0	0	0	0	0	0	0	0	20	76.9	6	23.1	4	15.4	54.5	62
0015	18	0	16	0	2	0	0	0	0	0	0	0	0	13	72.2	9	50	1	5.6	56.2	62.6
0030	22	0	21	0	1	0	0	0	0	0	0	0	0	22	100	9	40.9	5	22.7	58.2	68
0045	16	0	14	0	2	0	0	0	0	0	0	0	0	13	81.3	10	62.5	3	18.8	59.2	69.6
0100	10	0	8	0	1	0	0	0	0	0	1	0	0	10	100	9	90	4	40	64.2	-
0115	9	0	8	0	1	0	0	0	0	0	0	0	0	9	100	8	88.9	3	33.3	63	-
0130	11	0	11	0	0	0	0	0	0	0	0	0	0	11	100	8	72.7	6	54.5	64.8	68.9
0145	7	0	7	0	0	0	0	0	0	0	0	0	0	7	100	4	57.1	3	42.9	62.7	-
0200	6	0	5	0	1	0	0	0	0	0	0	0	0	4	66.7	3	50	2	33.3	59.4	-
0215	8	0	8	0	0	0	0	0	0	0	0	0	0	6	75	4	50	2	25	55.3	-
0230	5	0	5	0	0	0	0	0	0	0	0	0	0	5	100	4	80	1	20	60.5	-
0245	4	0	3	0	1	0	0	0	0	0	0	0	0	3	75	3	75	1	25	60.9	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	1	100	0	0	61.3	-
0315	5	0	3	0	2	0	0	0	0	0	0	0	0	3	60	2	40	1	20	58.3	-
0330	5	0	4	0	1	0	0	0	0	0	0	0	0	5	100	3	60	1	20	60.8	-
0345	6	0	6	0	0	0	0	0	0	0	0	0	0	5	83.3	3	50	1	16.7	59.3	-
0400	4	0	3	0	1	0	0	0	0	0	0	0	0	4	100	3	75	3	75	71.4	-
0415	7	0	6	0	0	0	0	0	0	0	1	0	0	6	85.7	4	57.1	1	14.3	59.5	-
0430	4	0	4	0	0	0	0	0	0	0	0	0	0	4	100	2	50	1	25	60.1	-
0445	6	0	6	0	0	0	0	0	0	0	0	0	0	6	100	5	83.3	1	16.7	59.3	-
0500	10	0	10	0	0	0	0	0	0	0	0	0	0	10	100	6	60	3	30	59.9	-
0515	13	1	12	0	0	0	0	0	0	0	0	0	0	12	92.3	10	76.9	7	53.8	63.3	71.4
0530	12	0	11	0	1	0	0	0	0	0	0	0	0	9	75	6	50	4	33.3	59.4	66.9
0545	8	0	6	0	2	0	0	0	0	0	0	0	0	7	87.5	5	62.5	0	0	57.8	-
0600	13	0	12	0	1	0	0	0	0	0	0	0	0	8	61.5	4	30.8	2	15.4	55.1	64.4
0615	14	1	12	1	0	0	0	0	0	0	0	0	0	13	92.9	6	42.9	3	21.4	58.3	66.4
0630	17	0	17	0	0	0	0	0	0	0	0	0	0	12	70.6	7	41.2	4	23.5	57.8	66
0645	30	0	27	1	0	0	0	0	0	0	1	1	0	23	76.7	10	33.3	3	10	54.7	63.3
0700	39	0	31	1	5	0	1	0	0	0	1	0	0	27	69.2	15	38.5	8	20.5	55.7	67.6
0715	37	0	35	0	2	0	0	0	0	0	0	0	0	31	83.8	16	43.2	5	13.5	55.3	61.5
0730	45	0	40	2	3	0	0	0	0	0	0	0	0	33	73.3	14	31.1	2	4.4	53	57.9
0745	54	0	46	0	8	0	0	0	0	0	0	0	0	42	77.8	21	38.9	11	20.4	55.7	67.8
0800	50	0	43	1	6	0	0	0	0	0	0	0	0	39	78	24	48	4	8	56.1	63.5
0815	44	0	42	0	2	0	0	0	0	0	0	0	0	33	75	17	38.6	7	15.9	54	63.8
0830	60	1	56	1	1	0	0	0	0	0	1	0	0	44	73.3	24	40	3	5	54.6	61.1
0845	88	1	74	0	11	1	0	0	0	0	1	0	0	55	62.5	27	30.7	2	2.3	51.7	60.4
0900	74	0	69	1	3	0	0	0	0	1	0	0	0	49	66.2	24	32.4	4	5.4	52.7	61.1
0915	142	1	129	4	7	1	0	0	0	0	0	0	0	95	66.9	23	16.2	0	0	52	57
0930	120	1	113	0	6	0	0	0	0	0	0	0	0	92	76.7	18	15	3	2.5	52.4	56.6
0945	136	1	124	3	6	0	1	0	0	0	0	0	0	68	50	14	10.3	2	1.5	50.2	55.3
1000	120	3	107	4	6	0	0	0	0	0	0	0	0	68	56.7	17	14.2	4	3.3	51	55.9
1015	149	2	134	0	13	0	0	0	0	0	0	0	0	81	54.4	17	11.4	1	0.7	50.4	55.5
1030	140	0	133	0	6	0	1	0	0	0	0	0	0	85	60.7	20	14.3	6	4.3	51.7	56.1
1045	150	2	135	3	8	0	0	0	0	1	1	0	0	69	46	21	14	2	1.3	49.6	56.8
1100	136	0	125	1	7	1	0	0	0	1	1	0	0	76	55.9	14	10.3	0	0	51	55.5
1115	149	0	140	2	6	0	0	0	0	1	0	0	0	67	45	13	8.7	2	1.3	50.3	55.3
1130	141	0	136	0	5	0	0	0	0	0	0	0	0	84	59.6	21	14.9	0	0	51.7	56.1
1145	149	1	145	1	2	0	0	0	0	0	0	0	0	96	64.4	26	17.4	2	1.3	52.1	57.5
1200	172	0	165	0	7	0	0	0	0	0	0	0	0	108	62.8	22	12.8	1	0.6	51.9	56.6
1215	174	0	161	0	9	0	1	0	0	2	0	1	0	86	49.4	12	6.9	2	1.1	50.2	53.9
1230	155	2	145	2	4	0	0	0	1	1	0	0	0	78	50.3	25	16.1	5	3.2	50.8	57.3
1245	158	0	155	1	2	0	0	0	0	0	0	0	0	90	57	22	13.9	4	2.5	51.3	55.9
1300	153	0	149	1	3	0	0	0	0	0	0	0	0	100	65.4	23	15	2	1.3	51.9	56.6
1315	156	1	148	0	6	0	0	0	0	0	1	0	0	68	43.6	18	11.5	4	2.6	49.8	55.7
1330	160	0	157	1	2	0	0	0	0	0	0	0	0	92	57.5	18	11.3	4	2.5	50.6	56.4
1345	167	2	153	1	9	0	1	0	0	1	0	0	0	84	50.3	14	8.4	4	2.4	50.5	54.8
1400	169	0	153	0	14	1	0	0	0	1	0	0	0	123	72.8	30	17.8	2	1.2	52.4	57.9
1415	158	0	152	2	3	0	0	0	0	0	1	0	0	107	67.7	20	12.7	1	0.6	51.9	56.1
1430	140	1	125	2	11	1	0	0	0	0	0	0	0	89	63.6	23	16.4	4	2.9	51.8	57.3
1445	147	1	138	1	7	0	0	0	0	0	0	0	0	75	51	24	16.3	3	2	51	57
1500	166	1	157	2	5	0	0	0	0	0	1	0	0	93	56	21	12.7	3	1.8	51	55.5
1515	166	0	154	4	7	0	0	0	0	1	0	0	0	71	42.8	19	11.4	3	1.8	48.5	56.1
1530	157	0	149	0	7	0	0	0	0	0	1	0	0	78	49.7	17	10.8	5	3.2	49.7	55
1545	158	0	148	3	7	0	0	0	0	0	0	0	0	92	58.2	25	15.8	1	0.6	50.6	56.8
1600	178	1	165	0	12	0	0	0	0	0	0	0	0	97	54.5	25	14	3	1.7	50.7	56.6
1615	136	1	123	3	9	0	0	0	0	0	0	0	0	76	55.9	26	19.1	1	0.7	51.9	58.4
1630	137	0	131	1	5	0	0	0	0	0	0	0	0	101	73.7	22	16.1	3	2.2	52.1	57
1645	137	3	129	0	4	1	0	0	0	0	0	0	0	83	60.6	30	21.9	5	3.6	51.8	58.8
1700	132	1	128	0	3	0	0	0	0	0	0	0	0	96	72.7	31	23.5	2	1.5	52.4	58.4
1715	135	2	128	2	3	0	0	0	0	0	0	0	0	89	65.9	30	22.2	8	5.9	52.7	58.8
1730	118	1	111	0	6	0	0	0	0	0	0	0	0	84	71.2	33	28	9	7.6	53.9	60.2
1745	107	3	92	2	10	0	0	0	0	0	0	0	0	78	72.9	33	30.8	3	2.8	52.7	60.6
1800	106	1	99	1	4	0	0	0	0	0	1	0	0	75	70.8	23	21.7	5	4.7	52.5	59.3
1815	106	2	96	1	7	0	0	0	0	0	0	0	0	74	69.8	27	25.5	6	5.7	53.7	60.2
1830	115	1	106	2	5	0	0	0	0	1	0	0	0	65	56.5	25	21.7	2	1.7	51.5	58.4
1845																					

Site 1
 Location A1067, Att - Tree, OSGR: TG 06233 19642
 Direction Two way
 29 April 2019

9323 / Norfolk Vanguard
 April 2019
 Automatic Traffic Count

Time	Total	Classification												>PSL 50	>PSL% 50	>SL1 57 ACPO	>SL1% 57 ACPO	>SL2 65 DFT	>SL2% 65 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	5	0	4	0	1	0	0	0	0	0	0	0	0	5	100	2	40	1	20	58.1	-
0015	6	0	5	0	1	0	0	0	0	0	0	0	0	6	100	5	83.3	1	16.7	61.8	-
0030	10	0	10	0	0	0	0	0	0	0	0	0	0	9	90	8	80	3	30	62.5	-
0045	2	0	1	0	1	0	0	0	0	0	0	0	0	1	50	1	50	1	50	58.7	-
0100	4	0	3	0	1	0	0	0	0	0	0	0	0	2	50	1	25	0	0	51.8	-
0115	3	0	2	0	1	0	0	0	0	0	0	0	0	2	66.7	1	33.3	0	0	54.3	-
0130	3	0	2	0	1	0	0	0	0	0	0	0	0	3	100	2	66.7	1	33.3	65.4	-
0145	6	0	4	0	1	0	0	0	0	1	0	0	0	3	50	2	33.3	0	0	53.3	-
0200	6	0	6	0	0	0	0	0	0	0	0	0	0	5	83.3	4	66.7	1	16.7	56.1	-
0215	6	0	6	0	0	0	0	0	0	0	0	0	0	4	66.7	3	50	2	33.3	59	-
0230	8	0	6	0	1	0	0	0	0	1	0	0	0	6	75	3	37.5	0	0	54	-
0245	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	1	100	0	0	57.9	-
0300	1	0	0	0	1	0	0	0	0	0	0	0	0	1	100	1	100	0	0	64	-
0315	5	0	5	0	0	0	0	0	0	0	0	0	0	4	80	3	60	0	0	57.1	-
0330	4	0	3	0	0	0	0	0	0	1	0	0	0	3	75	1	25	1	25	51.3	-
0345	3	0	0	0	3	0	0	0	0	0	0	0	0	3	100	2	66.7	2	66.7	63.7	-
0400	4	0	4	0	0	0	0	0	0	0	0	0	0	4	100	3	75	1	25	62.2	-
0415	10	0	8	0	1	0	0	0	0	0	1	0	0	9	90	6	60	2	20	58.7	-
0430	12	0	7	0	0	1	0	0	0	0	1	3	0	11	91.7	3	25	0	0	53.3	59.3
0445	15	0	8	0	4	0	0	0	0	1	2	0	0	11	73.3	4	26.7	1	6.7	54.4	57.7
0500	23	2	15	0	4	1	0	0	0	0	1	0	0	16	69.6	7	30.4	3	13	55.3	64.2
0515	24	1	20	0	2	0	0	0	0	0	0	1	0	22	91.7	9	37.5	3	12.5	57.2	64
0530	36	0	32	0	4	0	0	0	0	0	0	0	0	32	88.9	17	47.2	8	22.2	58.4	67.1
0545	36	0	25	0	8	0	1	0	0	0	2	0	0	30	83.3	21	58.3	8	22.2	59.6	67.3
0600	64	0	50	0	10	1	0	0	0	0	1	2	0	45	70.3	17	26.6	7	10.9	53.1	61.1
0615	88	1	72	2	7	1	0	0	0	3	1	1	0	65	73.9	44	50	12	13.6	56.1	64.6
0630	105	0	82	4	12	4	0	0	0	2	1	0	0	83	79	30	28.6	6	5.7	53.8	59.3
0645	165	0	136	3	21	0	1	0	0	0	2	2	0	130	78.8	53	32.1	9	5.5	54.6	60.4
0700	178	1	144	2	23	1	2	0	0	2	0	3	0	134	75.3	29	16.3	4	2.2	53.2	57.5
0715	259	2	220	3	29	0	0	0	0	1	1	3	0	120	46.3	23	8.9	5	1.9	48	53.9
0730	314	2	270	4	32	0	1	0	2	2	1	0	0	207	65.9	37	11.8	3	1	52	56.1
0745	291	3	245	3	34	0	2	0	0	2	2	0	0	169	58.1	32	11	4	1.4	50.1	56.1
0800	280	1	247	2	23	1	1	0	0	1	2	2	0	146	52.1	20	7.1	4	1.4	49.1	54.8
0815	273	5	227	2	31	0	0	0	1	2	0	5	0	151	55.3	19	7	5	1.8	50.3	55.3
0830	216	0	172	1	38	0	1	0	0	1	2	1	0	116	53.7	21	9.7	2	0.9	49.7	55.7
0845	237	0	195	3	33	1	2	0	0	1	0	2	0	134	56.5	27	11.4	4	1.7	51.1	55.9
0900	174	0	134	3	23	3	0	1	4	1	4	0	1	88	50.6	14	8	4	2.3	49.9	54.8
0915	161	0	137	3	14	2	1	0	0	1	0	3	0	77	47.8	16	9.9	1	0.6	50.2	54.8
0930	169	0	140	4	21	1	0	0	1	0	2	0	0	98	58	29	17.2	1	0.6	51.8	57.7
0945	172	2	139	3	21	1	1	0	0	1	3	1	0	93	54.1	13	7.6	0	0	49.6	54.1
1000	155	0	119	1	31	2	0	0	0	1	1	0	0	79	51	9	5.8	1	0.6	50	53.9
1015	181	0	157	1	16	0	0	0	0	1	2	4	0	81	44.8	17	9.4	1	0.6	50.3	55.3
1030	168	2	141	0	23	1	0	0	0	0	0	1	0	72	42.9	16	9.5	5	3	50.3	54.1
1045	144	0	116	0	17	3	1	0	0	3	3	1	0	75	52.1	10	6.9	2	1.4	50.5	54.8
1100	163	1	130	2	22	3	1	0	0	1	2	1	0	62	38	13	8	4	2.5	49.6	53.7
1115	141	1	110	2	21	1	1	0	0	0	2	3	0	81	57.4	12	8.5	0	0	50.5	55
1130	128	0	107	1	16	1	2	0	0	1	0	0	0	66	51.6	11	8.6	3	2.3	49.3	55.7
1145	174	0	142	2	25	1	0	0	1	1	0	1	0	83	47.7	18	10.3	4	2.3	50.7	55.3
1200	139	3	123	1	8	0	1	1	0	1	0	1	0	82	59	20	14.4	6	4.3	51.5	56.1
1215	145	2	112	2	22	0	0	0	0	1	3	3	0	79	54.5	12	8.3	3	2.1	50.3	55
1230	150	0	125	0	19	1	1	0	0	1	1	2	0	81	54	8	5.3	1	0.7	50.1	54.4
1245	178	2	146	1	26	1	0	0	0	0	1	1	0	95	53.4	8	4.5	0	0	49.9	53.7
1300	124	0	96	2	19	2	1	0	0	2	0	2	0	75	60.5	22	17.7	5	4	51.2	57.3
1315	166	2	132	3	24	0	1	0	0	2	0	0	1	107	64.5	29	17.5	1	0.6	51.9	57
1330	162	0	128	2	23	1	2	1	0	1	1	2	1	97	59.9	29	17.9	4	2.5	51.3	57
1345	154	0	125	1	24	1	0	0	0	0	2	1	0	82	53.2	10	6.5	0	0	50.5	54.6
1400	147	0	121	0	18	2	0	0	0	3	0	3	0	65	44.2	12	8.2	3	2	50.5	54.4
1415	151	1	117	1	28	0	0	0	0	3	1	0	0	69	45.7	19	12.6	1	0.7	49.8	55.7
1430	162	0	125	4	24	2	1	0	0	0	1	5	0	120	74.1	31	19.1	3	1.9	53	57.5
1445	155	1	128	1	18	1	0	0	0	3	2	1	0	103	66.5	31	20	10	6.5	52.4	58.4
1500	168	0	142	3	18	0	1	0	0	1	2	1	0	98	58.3	26	15.5	1	0.6	51.3	57
1515	175	1	146	1	19	2	1	0	0	3	1	1	0	84	48	12	6.9	1	0.6	49.5	54.1
1530	188	1	156	2	24	0	1	1	1	1	1	1	0	116	61.7	19	10.1	3	1.6	51.3	56.1
1545	195	0	157	1	35	1	1	0	0	0	0	0	0	106	54.4	25	12.8	2	1	50	56.1
1600	221	1	177	2	30	1	2	1	0	3	0	3	1	150	67.9	25	11.3	4	1.8	51.7	56.1
1615	241	1	201	3	29	1	1	1	0	3	1	0	0	131	54.4	20	8.3	0	0	50	55
1630	264	3	226	2	30	0	0	0	0	0	2	1	0	124	47	20	7.6	3	1.1	49.2	54.4
1645	277	3	238	3	27	3	1	0	0	0	2	0	0	146	52.7	28	10.1	3	1.1	50	54.8
1700	269	3	240	3	21	0	1	0	0	0	0	1	0	144	53.5	36	13.4	3	1.1	50.3	56.4
1715	283	1	251	0	26	1	1	0	0	0	3	0	0	178	62.9	33	11.7	4	1.4	51.4	56.6
1730	268	2	249	0	16	1	0	0	0	0	0	0	0	174	64.9	37	13.8	4	1.5	50.6	56.6
1745	238	1	218	0	17	0	0	0	0	1	1	0	0	181	76.1	45	18.9	2	0.8	52.9	57.9
1800	199	2	179	2	16	0	0	0	0	0	0	0	0	127	63.8	42	21.1	7	3.5	52.4	57.9
1815	154	0	144	2	7	0	0	0	0	0	0	0	0	135	87.7	40	26	6	3.9	54.5	59.5
1830	125	1	114	1	6	2	0	0	0	0	1	0	0	96	76.8	48	38.4	14	11.2	5	

Site 1
 Location A1067, Att - Tree, OSGR: TG 06233 19642
 Direction Two way
 30 April 2019

9323 / Norfolk Vanguard
 April 2019
 Automatic Traffic Count

Time	Total	Classification												>PSL 50	>PSL% 50	>SL1 57 ACPO	>SL1% 57 ACPO	>SL2 65 DFT	>SL2% 65 DFT	Mean	Vpp 85	
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT									
0000	8	1	5	0	1	0	0	0	0	0	0	0	0	0	6	75	2	25	2	25	56.3	-
0015	5	0	5	0	0	0	0	0	0	0	0	0	0	0	3	60	1	20	1	20	54.3	-
0030	10	0	9	0	0	0	0	0	0	1	0	0	0	0	9	90	4	40	2	20	57.5	-
0045	8	0	6	0	0	1	0	0	0	0	1	0	0	0	7	87.5	4	50	2	25	59.3	-
0100	3	0	1	0	1	0	0	0	0	0	0	1	0	0	3	100	1	33.3	0	0	55.5	-
0115	7	0	4	0	2	0	0	0	0	0	1	0	0	0	6	85.7	4	57.1	1	14.3	57	-
0130	4	0	4	0	0	0	0	0	0	0	0	0	0	0	3	75	3	75	2	50	63.3	-
0145	4	0	2	0	1	1	0	0	0	0	0	0	0	0	4	100	1	25	0	0	54.2	-
0200	4	0	4	0	0	0	0	0	0	0	0	0	0	0	3	75	1	25	1	25	56.1	-
0215	2	0	2	0	0	0	0	0	0	0	0	0	0	0	1	50	0	0	0	0	48.6	-
0230	4	0	2	0	0	0	0	0	0	0	1	1	0	0	3	75	1	25	0	0	54.5	-
0245	6	0	5	0	1	0	0	0	0	0	0	0	0	0	6	100	4	66.7	2	33.3	60.8	-
0300	4	0	2	0	2	0	0	0	0	0	0	0	0	0	2	50	2	50	1	25	56.7	-
0315	3	0	2	0	0	0	0	0	0	0	0	1	0	0	3	100	1	33.3	0	0	55.3	-
0330	4	0	3	0	0	0	0	0	0	0	0	1	0	0	4	100	1	25	0	0	56.2	-
0345	4	0	3	0	1	0	0	0	0	0	0	0	0	0	4	100	2	50	1	25	59	-
0400	5	0	3	0	2	0	0	0	0	0	0	0	0	0	4	80	2	40	2	40	60.9	-
0415	10	0	10	0	0	0	0	0	0	0	0	0	0	0	6	60	1	10	1	10	53.7	-
0430	10	0	9	0	1	0	0	0	0	0	0	0	0	0	6	60	2	20	2	20	53.4	-
0445	16	0	12	0	4	0	0	0	0	0	0	0	0	0	14	87.5	4	25	1	6.3	56.2	58.8
0500	21	0	14	1	2	2	0	0	0	0	0	2	0	0	13	61.9	8	38.1	3	14.3	55.3	64.2
0515	29	4	21	0	3	0	0	0	0	0	0	1	0	0	24	82.8	12	41.4	2	6.9	55.9	62.2
0530	37	0	28	0	4	0	0	1	0	0	0	2	2	0	30	81.1	14	37.8	8	21.6	57	65.3
0545	32	1	23	0	6	0	0	0	0	0	0	2	0	0	31	96.9	23	71.9	4	12.5	60	64
0600	78	0	58	0	13	1	1	0	1	1	3	0	0	0	70	89.7	34	43.6	11	14.1	56.7	64.6
0615	106	1	86	0	12	4	1	0	2	0	0	0	0	0	83	78.3	42	39.6	10	9.4	55.8	62.4
0630	130	2	104	5	13	1	0	0	0	3	2	0	0	0	96	73.8	42	32.3	7	5.4	53.9	61.5
0645	143	0	124	0	19	0	0	0	0	0	0	0	0	0	119	83.2	64	44.8	15	10.5	55.8	62.2
0700	191	0	149	1	31	2	1	2	2	3	0	0	0	0	137	71.7	35	18.3	6	3.1	52.7	57.9
0715	260	2	207	2	37	2	1	0	5	2	2	0	0	0	147	56.5	38	14.6	3	1.2	51.4	56.8
0730	294	5	249	3	32	0	2	0	1	0	1	0	1	0	180	61.2	31	10.5	1	0.3	51.1	55.9
0745	281	4	235	3	32	2	1	0	0	2	2	0	0	0	167	59.4	41	14.6	3	1.1	49.8	56.8
0800	283	1	249	2	26	2	0	0	1	0	2	0	0	0	172	60.8	35	12.4	2	0.7	50.7	56.4
0815	282	5	224	2	39	2	4	0	0	1	5	0	0	0	126	44.7	15	5.3	0	0	49.1	54.1
0830	244	2	193	2	32	6	2	0	2	1	4	0	0	0	119	48.8	21	8.6	1	0.4	49.8	55
0845	244	1	193	1	42	0	1	0	1	3	2	0	0	0	129	52.9	24	9.8	3	1.2	50.1	55
0900	188	1	160	2	18	2	1	0	0	1	3	0	0	0	118	62.8	26	13.8	6	3.2	51.3	56.4
0915	176	0	142	1	27	1	0	0	3	2	0	0	0	0	75	42.6	8	4.5	1	0.6	48.4	53.7
0930	157	1	122	2	27	1	0	0	1	1	2	0	0	0	90	57.3	23	14.6	5	3.2	51.6	56.4
0945	159	1	120	3	22	1	3	1	2	2	3	0	1	0	88	55.3	13	8.2	1	0.6	50.5	55.3
1000	168	1	131	5	28	0	2	0	0	0	0	0	1	0	83	49.4	12	7.1	2	1.2	49.5	55.3
1015	157	0	128	1	22	0	2	0	0	3	1	0	0	0	85	54.1	9	5.7	2	1.3	50.5	54.1
1030	160	1	130	0	20	2	3	0	0	2	1	1	0	0	73	45.6	10	6.3	1	0.6	49.5	53
1045	163	0	136	0	20	2	1	0	0	1	0	2	1	0	72	44.2	12	7.4	1	0.6	47.2	53.9
1100	138	1	113	2	16	2	0	0	1	1	2	0	0	0	81	58.7	14	10.1	2	1.4	50.7	54.1
1115	158	1	125	4	17	1	4	0	0	5	1	0	0	0	87	55.1	7	4.4	0	0	50.1	53.7
1130	131	0	99	2	21	3	1	1	2	1	1	0	0	0	67	51.1	9	6.9	1	0.8	49.8	54.6
1145	171	2	138	2	26	1	0	0	0	1	1	0	0	0	94	55	19	11.1	3	1.8	50.8	55.3
1200	137	2	107	2	19	2	2	0	1	1	1	0	0	0	84	61.3	15	10.9	0	0	49.8	55.3
1215	150	0	120	3	21	1	3	0	1	0	1	0	0	0	93	62	13	8.7	4	2.7	50.6	55.7
1230	168	0	143	1	17	1	1	1	1	0	3	0	0	0	104	61.9	13	7.7	3	1.8	51.6	55
1245	144	1	112	3	20	2	3	1	0	1	1	0	0	0	77	53.5	12	8.3	4	2.8	50.1	55.5
1300	144	1	118	1	17	1	1	0	1	1	2	1	0	0	76	52.8	14	9.7	2	1.4	50.5	55.3
1315	153	2	112	2	20	4	2	1	3	2	5	0	0	0	83	54.2	11	7.2	1	0.7	50.4	54.6
1330	146	1	115	4	19	1	1	0	0	2	3	0	0	0	76	52.1	15	10.3	0	0	48.7	55.9
1345	166	2	130	2	25	1	2	0	1	0	3	0	0	0	69	41.6	14	8.4	2	1.2	49.9	55
1400	147	0	122	1	14	3	3	0	1	2	1	0	0	0	90	61.2	9	6.1	1	0.7	50.1	54.4
1415	147	0	121	0	20	0	1	0	2	1	2	0	0	0	77	52.4	17	11.6	1	0.7	50.1	54.1
1430	177	4	142	1	24	4	1	0	0	1	0	0	0	0	102	57.6	25	14.1	3	1.7	49.9	56.4
1445	177	3	153	1	12	0	3	0	1	2	2	0	0	0	81	45.8	17	9.6	3	1.7	48.7	54.6
1500	189	3	144	2	26	1	2	0	6	4	1	0	0	0	112	59.3	23	12.2	1	0.5	49.9	56.4
1515	186	4	151	3	21	1	3	0	1	0	2	0	0	0	126	67.7	33	17.7	5	2.7	52.4	57.5
1530	207	2	172	2	26	0	2	0	0	1	2	0	0	0	93	44.9	24	11.6	2	1	49.3	54.6
1545	210	1	169	2	33	0	2	1	2	0	0	0	0	0	107	51	29	13.8	4	1.9	48.9	56.6
1600	230	2	185	3	35	1	1	0	1	2	0	0	0	0	135	58.7	28	12.2	1	0.4	50.7	55.9
1615	256	6	217	3	23	2	1	0	0	0	2	2	0	0	130	50.8	31	12.1	1	0.4	48.8	55.3
1630	268	3	223	6	31	2	0	0	0	2	0	0	1	0	117	43.7	26	9.7	4	1.5	49.4	54.4
1645	293	2	259	0	27	1	1	1	1	2	0	0	0	0	153	52.2	30	10.2	4	1.4	49.9	55.9
1700	271	1	232	2	33	1	1	0	0	0	1	0	0	0	156	57.6	43	15.9	2	0.7	51.1	57
1715	300	1	264	6	20	0	1	0	2	4	2	0	0	0	173	57.7	29	9.7	4	1.3	48.4	55.7
1730	239	4	214	3	15	0	1	0	0	1	1	0	0	0	152	63.6	47	19.7	6	2.5	51.1	57.7
1745	236	2	215	1	16	0	0	0	1	1	0	0	0	0	137	58.1	47	19.9	13	5.5	51.4	58.8
1800	216	0	191	2	19	2	0	0	0	1	1	0	0	0	135	62.5	28	13	7	3.2	51.8	56.1
1815	211	1	192	1	15	0	1															

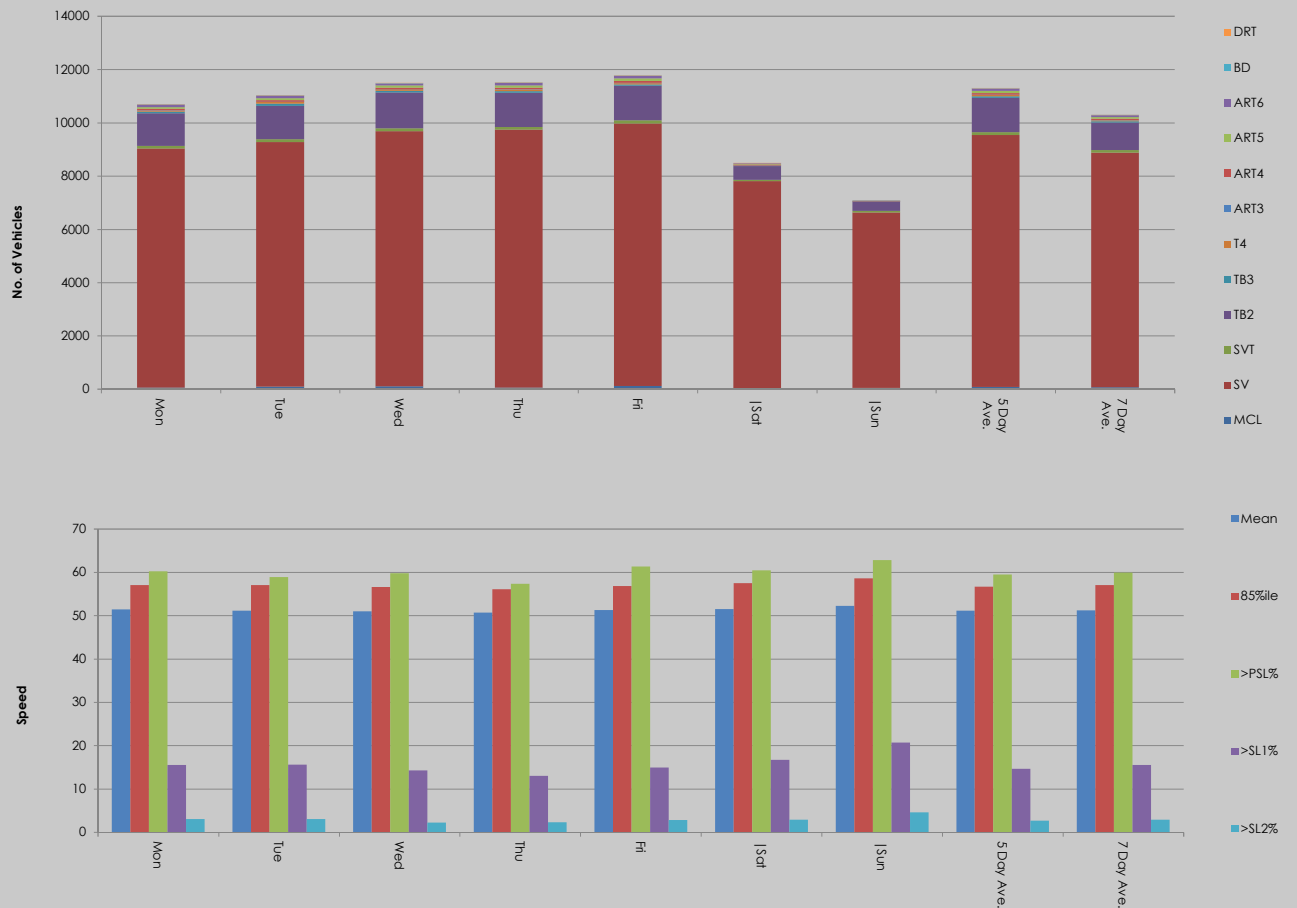
Virtual Day (7)

Time	Total	Classification												>PSL 50	>PSL% 50	>SL1 57 ACPO	>SL1% 57 ACPO	>SL2 65 DFT	>SL2% 65 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	43	0	37	0	4	0	0	0	0	1	0	0	0	36	84.2	20	47.2	8	17.5	57.6	66.2
0100	24	0	19	0	4	0	0	0	0	0	1	0	0	20	82.1	11	47	5	19.6	57.8	67.3
0200	19	0	16	0	2	0	0	0	0	1	0	0	0	14	76.5	9	47	3	15.9	56.3	64.9
0300	17	0	11	0	4	0	0	0	0	1	1	0	0	14	82.9	8	49.6	3	17.9	57.9	65.5
0400	35	0	26	0	5	0	0	0	0	2	1	0	0	27	77.3	13	37.2	6	18.2	57	68.5
0500	107	3	82	0	14	1	1	0	1	2	3	0	0	90	84.1	52	48.7	19	18.2	57.8	66.2
0600	348	3	282	4	41	3	3	0	4	4	4	0	0	272	78.3	118	33.9	31	9	54.7	62.2
0700	792	5	660	7	96	4	5	0	5	4	5	0	0	491	62.1	118	14.8	15	1.9	51.3	56.8
0800	824	6	677	8	108	4	4	1	5	4	8	0	0	454	55.1	91	11.1	10	1.2	50.3	55.7
0900	676	4	556	9	82	4	3	0	5	5	7	0	1	358	53	65	9.7	9	1.3	49.9	55.3
1000	667	3	560	6	76	4	5	0	3	4	4	0	0	331	49.6	59	8.8	8	1.2	49.9	55
1100	653	5	548	8	68	5	4	1	4	5	4	0	1	328	50.2	56	8.6	6	0.9	49.9	55
1200	659	3	565	6	61	3	4	1	3	6	6	0	0	358	54.3	62	9.3	9	1.3	50.3	55.3
1300	636	5	537	7	67	3	3	1	3	4	6	1	0	357	56.2	68	10.7	8	1.3	50.5	55.7
1400	679	4	576	5	72	4	3	1	5	4	5	0	0	383	56.3	76	11.2	8	1.2	50.5	55.9
1500	760	4	645	7	84	3	4	1	6	4	3	0	0	424	55.7	84	11.1	11	1.4	50.4	55.5
1600	918	8	794	8	93	3	2	0	3	4	2	0	0	529	57.6	106	11.5	11	1.2	50.3	55.9
1700	912	6	822	7	68	1	2	0	1	2	2	0	0	580	63.6	146	16	16	1.8	51.2	57
1800	581	6	531	4	35	1	1	0	1	2	1	0	0	406	69.9	134	23.1	24	4.1	52.8	59.1
1900	320	4	290	2	21	1	0	0	0	1	1	0	0	242	75.6	99	30.9	24	7.6	54	61.1
2000	201	2	183	1	13	0	0	0	0	1	0	0	0	149	74.1	64	32	21	10.3	54.4	62
2100	173	1	162	0	8	0	0	0	0	1	0	0	0	129	74.3	56	32.3	16	9.3	54.7	61.7
2200	164	0	153	0	7	0	0	0	0	2	0	0	0	117	71.5	48	29.1	16	9.6	54.5	61.5
2300	83	0	76	0	5	0	0	0	0	1	1	0	0	60	71.7	29	34.8	10	11.8	54.4	63.5
1200	8756	59	7472	81	911	38	38	7	43	48	54	2	3	4998	57.1	1064	12.2	134	1.5	50.6	56.1
1215	9798	69	8388	90	994	43	41	7	48	54	60	2	3	5791	59.1	1401	14.3	226	2.3	51	56.6
1230	10045	69	8617	90	1006	44	41	7	48	57	61	2	3	5967	59.4	1478	14.7	252	2.5	51.1	56.8
1245	10290	72	8808	90	1038	45	42	8	50	64	67	2	3	6169	59.9	1592	15.5	296	2.9	51.2	57

Virtual Week (1)

Time	Total	Classification												>PSL 50	>PSL% 50	>SL1 57 ACPO	>SL1% 57 ACPO	>SL2 65 DFT	>SL2% 65 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
Mon	10684	61	8972	100	1224	59	36	9	63	65	88	3	4	6427	60.2	1653	15.5	317	3	51.4	57
Tue	11029	95	9176	110	1257	75	71	9	56	77	96	3	4	6500	58.9	1720	15.6	328	3	51.1	57
Wed	11488	100	9586	104	1350	56	60	6	62	84	72	3	5	6872	59.8	1639	14.3	258	2.2	51	56.6
Thu	11503	53	9696	93	1279	62	64	11	59	89	91	3	3	6596	57.3	1491	13	262	2.3	50.7	56.1
Fri	11767	121	9853	120	1298	47	50	12	71	97	93	1	4	7212	61.3	1756	14.9	335	2.8	51.3	56.8
[Sat	8482	36	7775	46	520	13	8	3	29	25	25	0	2	5127	60.4	1420	16.7	245	2.9	51.5	57.5
[Sun	7078	40	6597	59	340	6	5	3	11	11	6	0	0	4448	62.8	1466	20.7	325	4.6	52.2	58.6
5 Day Ave.	11294	86	9457	105	1282	60	56	9	62	82	88	3	4	6721	59.5	1652	14.6	300	2.7	51.1	56.7
7 Day Ave.	10290	72	8808	90	1038	45	42	8	50	64	67	2	3	6169	59.9	1592	15.5	296	2.9	51.2	57.0
--	72031	506	61655	632	7268	318	294	53	351	448	471	13	22	43182	59.9	11145	15.5	2070	2.9	51.2	57.0

Summary Graphs



APPENDIX D B1149 ATC Results

Site 7
 Location Holt Road, Att - Signpost, OSGR: TG 14536 2567z
 Direction Two way
 19 April 2017

7346 / Norfolk
 April 2017
 Automatic Traffic Count

Time	Total	Classification												>PSL 60	>PSL% 60	>SL1 68 ACPO	>SL1% 68 ACPO	>SL2 75 DFT	>SL2% 75 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	3	0	3	0	0	0	0	0	0	0	0	0	0	1	33.3	0	0	0	57.8	-	
0015	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50.6	-	
0030	5	1	4	0	0	0	0	0	0	0	0	0	0	1	20	0	0	0	53.6	-	
0045	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48.4	-	
0100	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	50.6	-	
0115	5	0	4	0	1	0	0	0	0	0	0	0	0	1	20	1	20	1	42.9	-	
0130	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	49.6	-	
0145	2	0	1	0	0	0	0	0	0	1	0	0	0	1	50	1	50	1	66.6	-	
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	
0215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	
0230	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	47.2	-	
0245	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53.8	-	
0300	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.4	-	
0315	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48.3	-	
0330	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	33.2	-	
0345	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50.8	-	
0400	2	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	39	-	
0415	4	1	3	0	0	0	0	0	0	0	0	0	0	1	25	1	25	1	58.5	-	
0430	2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	38.1	-	
0445	3	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	41.6	-	
0500	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50.8	-	
0515	22	0	20	0	0	0	0	0	1	1	0	0	0	2	9.1	0	0	0	51.8	58.4	
0530	12	0	8	0	1	0	0	0	1	1	1	0	0	1	8.3	0	0	0	49.6	53.3	
0545	27	0	22	0	2	0	0	0	1	0	2	0	0	6	22.2	1	3.7	0	50.9	60.6	
0600	25	0	16	1	2	0	1	0	1	2	2	0	0	5	20	1	4	0	51.4	60.8	
0615	42	0	35	0	3	0	2	0	2	0	0	0	0	4	9.5	0	0	0	50.8	56.1	
0630	55	0	47	0	7	0	1	0	0	0	0	0	0	5	9.1	0	0	0	52.9	57.3	
0645	68	1	61	3	3	0	0	0	0	0	0	0	0	8	11.8	1	1.5	0	52.1	57.9	
0700	106	0	95	3	4	1	0	0	0	3	0	0	0	9	8.5	1	0.9	0	48.3	57	
0715	125	0	103	1	17	0	0	0	1	1	2	0	0	8	6.4	0	0	0	49.6	56.1	
0730	127	0	106	1	15	0	0	0	1	1	3	0	0	8	6.3	0	0	0	47.8	56.1	
0745	110	0	97	0	6	1	1	0	1	1	2	0	0	4	3.6	1	0.9	0	49.1	53.5	
0800	112	2	100	2	5	0	1	0	1	0	1	0	0	7	6.3	0	0	0	49.6	57	
0815	139	0	118	2	15	0	0	1	0	2	0	0	0	3	2.2	1	0.7	0	46.4	53.5	
0830	122	1	104	2	9	1	2	0	1	1	1	0	0	4	3.3	1	0.8	0	46.4	52.6	
0845	102	2	89	2	5	1	1	0	1	0	1	0	0	5	4.9	0	0	0	47.4	56.1	
0900	68	1	56	1	6	0	1	0	0	1	2	0	0	2	2.9	0	0	0	48.7	54.1	
0915	88	2	71	4	6	1	2	0	1	0	1	0	0	1	1.1	0	0	0	45.1	52.6	
0930	96	1	83	3	2	3	0	0	1	0	3	0	0	5	5.2	2	2.1	1	45.1	52.8	
0945	92	1	78	1	7	0	2	0	2	1	0	0	0	1	1.1	0	0	0	44.5	51.2	
1000	100	1	84	1	12	0	0	0	0	1	1	0	0	3	3	0	0	0	44.6	49.9	
1015	88	0	73	2	9	0	0	0	2	1	1	0	0	1	1.1	0	0	0	44	50.8	
1030	101	0	86	1	9	1	1	0	1	1	1	0	0	3	3	2	2	2	44	52.1	
1045	112	1	97	1	10	1	1	0	0	1	0	0	0	0	0	0	0	0	44.5	50.1	
1100	82	0	71	0	7	0	2	0	0	2	0	0	0	1	1.2	0	0	0	45.6	52.1	
1115	95	2	79	0	9	1	0	0	2	0	2	0	0	2	2.1	0	0	0	44.5	53.2	
1130	93	1	85	0	5	0	0	0	0	2	0	0	0	2	2.2	0	0	0	44.8	51.2	
1145	81	0	68	3	8	0	2	0	0	0	0	0	0	4	4.9	1	1.2	0	42.4	49.7	
1200	79	3	58	1	11	1	2	0	1	0	2	0	0	1	1.3	0	0	0	42.8	51	
1215	94	1	77	2	10	0	0	0	0	4	0	0	0	3	3.2	1	1.1	0	45.5	51.4	
1230	86	0	72	0	9	0	1	0	2	0	1	1	0	2	2.3	0	0	0	46.9	53.5	
1245	88	0	79	1	4	0	0	0	1	2	1	0	0	2	2.3	0	0	0	46.3	53.7	
1300	98	1	79	5	6	2	0	0	2	1	2	0	0	2	2	1	1	0	45.8	52.3	
1315	81	0	67	3	10	1	0	0	0	0	0	0	0	2	2.5	1	1.2	0	45.6	52.3	
1330	88	1	76	0	6	0	0	0	2	1	2	0	0	1	1.1	0	0	0	46.2	51.9	
1345	74	1	60	2	7	1	1	0	0	1	0	0	0	2	2.7	0	0	0	44.5	51.7	
1400	86	2	75	1	6	0	0	0	0	1	1	0	0	1	1.2	0	0	0	45.2	52.1	
1415	109	4	92	2	7	1	1	0	0	0	2	0	0	3	2.8	0	0	0	45	51.4	
1430	86	3	71	1	9	0	1	0	1	0	0	0	0	9	10.5	1	1.2	0	46.9	54.8	
1445	92	0	76	3	8	1	0	0	1	2	1	0	0	0	0	0	0	0	43.2	49.4	
1500	77	1	61	2	10	0	0	0	0	1	2	0	0	3	3.9	0	0	0	46.4	53	
1515	99	0	86	1	9	1	1	0	0	1	0	0	0	5	5.1	0	0	0	47	54.6	
1530	105	0	93	2	9	0	0	0	0	0	1	0	0	2	1.9	0	0	0	44.5	50.6	
1545	116	0	106	0	9	0	0	0	0	1	0	0	0	3	2.6	1	0.9	0	46.3	51.7	
1600	115	1	99	1	12	0	0	0	1	0	1	0	0	2	1.7	0	0	0	46.5	53.5	
1615	136	1	118	4	11	0	1	0	0	1	0	0	0	2	1.5	0	0	0	47.3	53	
1630	146	3	129	2	11	0	0	0	0	0	1	0	0	3	2.1	0	0	0	46.9	51	
1645	146	0	131	2	13	0	0	0	0	0	0	0	0	4	2.7	0	0	0	47.1	53.9	
1700	137	1	122	2	11	1	0	0	0	0	0	0	0	3	2.2	1	0.7	1	47.8	54.4	
1715	166	4	153	1	8	0	0	0	0	0	0	0	0	7	4.2	0	0	0	49.2	53.7	
1730	125	0	115	1	7	0	0	0	0	2	0	0	0	5	4	0	0	0	48.4	55	
1745	141	0	130	1	8	0	1	0	0	0	1	0	0	0	0	0	0	0	45.4	53	
1800	118	0	111	1	6	0	0	0	0	0	0	0	0	10	8.5	5	4.2	2	48.6	54.1	
1815	94	0	91	0	3	0	0	0	0	0	0	0	0	5	5.3	2	2.1	1	48.8	56.6	
1830	92	0	89	0	2	0	0	0	0	0	1	0	0	7	7.6	0	0	0	49.3	57.7	
1845	68	1	62	1	3	0	1	0	0	0	0	0	0	9	13.2	0	0	0	47.5	55.9	
1900	55	0	53	0	2	0	0	0	0	0	0	0	0	7	12.7	2	3.6	0	51.2	59.1	
1915	62	2	58	0	2	0	0	0	0	0	0	0	0	7	11.3	1	1.6	1	47.2	56.6	
1930	35	1	34	0	0	0	0	0	0	0	0	0	0	3	8.6	0	0	0	50.8	57.7	
1945	35	0	31	1	3	0	0	0	0	0	0	0	0	4	11.4	0	0	0	52.2	57.7	
2000	25	0	21	0	3	0	0	0	0	1	0	0	0	4	16	1	4	0	53	58.6	
2015	36	1	34	0	1	0	0	0	0	0	0	0	0	4	11.1	2	5.6	0	48.1	53.5	
203																					

20 April 2017

Time	Total	Classification												>PSL 60	>PSL% 60	>SL1 68 ACPO	>SL1% 68 ACPO	>SL2 75 DFT	>SL2% 75 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	4	0	3	0	0	0	0	0	1	0	0	0	0	1	25	1	25	0	0	50.3	-
0015	3	0	3	0	0	0	0	0	0	0	0	0	0	2	66.7	2	66.7	2	66.7	69.5	-
0030	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49.1	-
0045	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	0	0	0	0	56.7	-
0100	5	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57.1	-
0115	4	0	3	0	0	0	0	0	1	0	0	0	0	2	50	0	0	0	0	50.2	-
0130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0145	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	28.5	-
0200	3	0	3	0	0	0	0	0	0	0	0	0	0	1	33.3	0	0	0	0	54.6	-
0215	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55.7	-
0230	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	28.2	-
0245	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48.8	-
0315	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0330	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.1	-
0345	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47.6	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0415	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	0	0	0	0	61.6	-
0430	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.2	-
0445	6	1	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	46.3	-
0500	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47.3	-
0515	18	0	15	0	1	0	0	0	1	1	0	0	0	4	22.2	0	0	0	0	51.6	63.1
0530	16	0	12	0	3	0	0	0	1	0	0	0	0	5	31.3	2	12.5	0	0	56	65.5
0545	16	0	16	0	0	0	0	0	0	0	0	0	0	5	31.3	1	6.3	1	6.3	56.7	62
0600	26	0	20	0	2	0	2	0	0	2	0	0	0	4	15.4	1	3.8	1	3.8	44	58.6
0615	43	0	36	0	6	0	0	0	1	0	0	0	0	8	18.6	2	4.7	0	0	53.8	62.4
0630	61	0	46	1	7	0	1	0	1	2	3	0	0	7	11.5	0	0	0	0	49.7	56.8
0645	75	2	64	4	3	1	1	0	0	0	0	0	0	7	9.3	2	2.7	1	1.3	49.7	57.3
0700	106	1	90	2	9	1	1	0	0	2	0	0	0	5	4.7	1	0.9	1	0.9	49.6	55.3
0715	135	1	112	3	17	0	0	0	2	0	0	0	0	6	4.4	3	2.2	0	0	47	54.1
0730	150	0	133	1	13	1	2	0	0	0	0	0	0	6	4	1	0.7	0	0	45.6	54.6
0745	120	0	100	4	9	0	1	0	1	0	5	0	0	9	7.5	2	1.7	1	0.8	48.1	55.7
0800	124	3	103	0	11	1	1	0	2	1	2	0	0	5	4	0	0	0	0	44.7	53
0815	153	0	134	0	13	2	0	0	2	1	1	0	0	3	2	0	0	0	0	45.3	52.6
0830	111	0	93	3	9	1	0	0	1	2	2	0	0	4	3.6	1	0.9	0	0	45.6	54.6
0845	104	0	83	2	14	0	1	1	1	0	2	0	0	1	1	0	0	0	0	44.5	50.6
0900	96	0	84	1	6	1	1	0	1	1	1	0	0	1	1	1	1	0	0	46.6	53
0915	96	0	85	1	6	0	0	0	0	1	3	0	0	0	0	0	0	0	0	46.7	52.3
0930	87	1	74	2	6	1	2	0	1	0	0	0	0	7	8	0	0	0	0	47.5	56.4
0945	95	0	82	0	8	0	1	0	0	1	3	0	0	1	1.1	1	1.1	0	0	44.8	52.8
1000	84	0	74	0	4	1	1	0	0	4	0	0	0	2	2.4	0	0	0	0	44.4	51.2
1015	84	1	69	0	10	0	1	0	1	1	1	0	0	3	3.6	0	0	0	0	45.6	51.9
1030	104	1	88	1	11	1	0	0	1	1	0	0	0	0	0	0	0	0	0	46.1	51
1045	89	0	75	0	9	2	0	0	1	0	2	0	0	1	1.1	0	0	0	0	43.6	50.3
1100	90	0	68	3	13	0	2	0	1	0	3	0	0	0	0	0	0	0	0	42	48.5
1115	90	0	76	0	11	2	0	0	0	1	0	0	0	3	3.3	0	0	0	0	44.7	51.4
1130	76	1	70	0	1	1	2	0	1	0	0	0	0	2	2.6	0	0	0	0	46.3	54.1
1145	82	0	74	1	5	0	0	0	0	0	2	0	0	1	1.2	0	0	0	0	43.8	51
1200	93	1	77	1	8	0	0	0	0	1	5	0	0	1	1.1	0	0	0	0	43.6	48.5
1215	87	0	79	1	4	1	0	0	0	0	2	0	0	4	4.6	1	1.1	1	1.1	43.6	49.4
1230	72	0	58	3	7	1	1	0	1	0	1	0	0	2	2.8	1	1.4	0	0	46.1	55.3
1245	66	0	54	3	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46.3	54.1
1300	90	0	80	1	5	2	1	0	0	1	0	0	0	3	3.3	1	1.1	0	0	46.4	53
1315	85	1	67	3	9	1	1	0	2	0	1	0	0	0	0	0	0	0	0	44	49.7
1330	81	1	67	0	8	3	0	0	1	1	0	0	0	1	1.2	0	0	0	0	44.7	51.9
1345	90	0	74	0	12	0	1	0	1	0	2	0	0	2	2.2	0	0	0	0	45.6	49.9
1400	84	1	64	0	11	2	2	0	0	1	3	0	0	4	4.8	1	1.2	0	0	45.2	52.8
1415	93	0	85	2	2	0	2	0	0	0	2	0	0	2	2.2	0	0	0	0	45.7	52.1
1430	75	1	65	2	7	0	0	0	0	0	0	0	0	5	6.7	2	2.7	0	0	46.3	51.4
1445	85	1	70	2	6	2	1	0	0	0	3	0	0	4	4.7	1	1.2	1	1.2	45	51
1500	97	1	85	0	9	0	1	0	1	0	0	0	0	1	1	0	0	0	0	46.4	51.2
1515	113	1	100	0	9	1	0	0	1	0	0	0	0	4	3.5	1	0.9	1	0.9	48.2	54.8
1530	94	0	88	0	3	1	0	0	1	0	1	0	0	4	4.3	1	1.1	0	0	47.4	54.8
1545	93	0	81	2	7	1	1	0	0	1	0	0	0	4	4.3	1	1.1	0	0	46.4	53
1600	115	0	101	2	12	0	0	0	0	0	0	0	0	2	1.7	1	0.9	1	0.9	43.2	53.9
1615	125	0	106	2	11	0	3	0	0	2	1	0	0	4	3.2	0	0	0	0	46.3	53.5
1630	130	1	114	2	12	0	0	0	0	1	0	0	0	1	0.8	0	0	0	0	44.8	53.2
1645	147	0	128	4	14	0	0	0	0	1	0	0	0	2	1.4	0	0	0	0	45.7	52.6
1700	134	1	123	0	7	0	1	0	1	0	1	0	0	3	2.2	0	0	0	0	43.2	50.1
1715	168	2	152	0	10	1	1	0	0	1	0	0	1	5	3	3	1.8	0	0	48.1	54.4
1730	131	0	127	1	3	0	0	0	0	0	0	0	0	10	7.6	3	2.3	2	1.5	47.5	56.1
1745	90	1	83	2	4	0	0	0	0	0	0	0	0	6	6.7	1	1.1	0	0	49	56.8
1800	94	1	89	0	4	0	0	0	0	0	0	0	0	3	3.2	1	1.1	0	0	48.7	54.6
1815	97	1	87	0	8	1	0	0	0	0	0	0	0	8	8.2	0	0	0	0	48.8	56.8
1830	87	0	85	0	2	0	0	0	0	0	0	0	0	5	5.7	0	0	0	0	46.8	55.3
1845	73	0	66	4	3	0	0	0	0	0	0	0	0	2	2.7	1	1.4	0	0	44.9	52.3
1900	69	0	63	3	2	0	0	0	0	0	1	0	0	3	4.3	1	1.4	1	1.4	48.1	54.1
1915	59	1	57	0	1	0	0	0	0	0	0	0	0	6	10.2	0	0	0	0	52.2	57
1930	40	0	37	0	3	0	0	0	0	0	0	0	0	8	20	2	5	0	0	51.7	61.5
1945	25	0	25	0																	

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Time	Total	Classification												>PSL 60	>PSL% 60	>SL1 68 ACPO	>SL1% 68 ACPO	>SL2 75 DFT	>SL2% 75 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	7	0	7	0	0	0	0	0	0	0	0	0	0	3	42.9	2	28.6	0	0	55.1	-
0015	3	0	3	0	0	0	0	0	0	0	0	0	0	2	66.7	2	66.7	1	33.3	62.3	-
0030	4	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.7	-
0045	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.2	-
0100	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	1	50	1	50	73.5	-
0115	4	0	4	0	0	0	0	0	0	0	0	0	0	2	50	1	25	1	25	60.6	-
0130	4	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.3	-
0145	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	1	50	1	50	59.1	-
0200	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.9	-
0215	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	67	-
0230	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42.6	-
0245	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59.9	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55.1	-
0315	3	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	47.3	-
0330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0345	4	0	4	0	0	0	0	0	0	0	0	0	0	1	25	0	0	0	0	55.9	-
0400	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50.5	-
0415	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.4	-
0430	4	0	4	0	0	0	0	0	0	0	0	0	0	1	25	0	0	0	0	51.5	-
0445	7	0	5	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	47.1	-
0500	7	1	6	0	0	0	0	0	0	0	0	0	0	3	42.9	1	14.3	0	0	49.5	-
0515	23	1	17	0	2	0	0	0	1	1	1	0	0	5	21.7	1	4.3	1	4.3	51	62.9
0530	18	0	15	0	2	0	0	0	0	1	0	0	0	3	16.7	1	5.6	0	0	52.3	59.1
0545	17	0	13	0	2	0	0	0	0	1	1	0	0	7	41.2	0	0	0	0	56.3	62.2
0600	27	0	19	0	1	0	3	0	1	0	3	0	0	2	7.4	0	0	0	0	48.3	56.8
0615	37	0	32	0	4	0	0	0	0	1	0	0	0	10	27	0	0	0	0	51.3	62.9
0630	48	0	43	0	4	0	0	0	0	0	1	0	0	11	22.9	4	8.3	0	0	53.8	63.1
0645	59	1	52	1	2	1	0	0	0	0	2	0	0	13	22	6	10.2	2	3.4	53.7	63.5
0700	88	0	72	1	11	0	0	1	0	0	3	0	0	7	8	1	1.1	1	1.1	49.8	57.5
0715	117	1	98	4	12	0	0	0	1	0	1	0	0	8	6.8	3	2.6	0	0	48.1	55.7
0730	124	0	107	4	8	0	0	0	2	1	2	0	0	2	1.6	0	0	0	0	45.7	52.8
0745	121	1	102	3	8	2	1	1	1	0	1	1	0	2	1.7	0	0	0	0	45.5	53.2
0800	112	2	85	5	13	2	3	0	1	0	1	0	0	3	2.7	1	0.9	0	0	45.4	52.3
0815	140	2	118	5	13	0	0	0	1	0	1	0	0	2	1.4	2	1.4	0	0	45.3	52.1
0830	115	0	101	0	12	0	0	0	0	0	1	0	0	1	4	3.5	0	0	0	45.5	52.1
0845	98	1	84	0	12	0	0	0	1	0	0	0	0	4	4.1	1	1	0	0	46.7	53.7
0900	87	0	72	2	8	1	1	0	0	1	2	0	0	1	1.1	0	0	0	0	45.8	51.9
0915	107	0	86	1	15	0	2	0	0	0	3	0	0	0	0	0	0	0	0	45.2	50.8
0930	93	0	79	1	6	2	2	0	2	0	1	0	0	1	1.1	0	0	0	0	45	52.1
0945	119	0	101	2	7	3	3	0	0	1	1	1	0	0	0	0	0	0	0	43	48.8
1000	93	0	73	2	13	0	1	0	0	2	2	0	0	0	0	0	0	0	0	45.6	50.8
1015	94	0	78	2	9	1	0	0	2	0	2	0	0	0	0	0	0	0	0	41.8	48.5
1030	113	2	88	1	13	2	2	1	1	2	1	0	0	1	0.9	0	0	0	0	43.3	49.4
1045	97	0	80	2	9	0	1	0	1	0	4	0	0	0	0	0	0	0	0	42.9	49
1100	94	0	76	1	13	1	0	0	2	1	0	0	0	2	2.1	1	1.1	0	0	45.9	49.9
1115	114	0	95	2	10	1	4	0	0	2	0	0	0	0	0	0	0	0	0	41.1	48.5
1130	93	0	81	1	8	2	0	0	0	0	1	0	0	2	2.2	0	0	0	0	38.7	48.8
1145	96	1	74	1	14	1	2	0	1	2	0	0	0	1	1	0	0	0	0	44.6	49.7
1200	84	1	71	4	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	46.6	52.6
1215	89	0	75	0	7	2	1	0	0	1	2	0	0	3	3.4	1	1.1	0	0	46.3	52.3
1230	103	0	90	1	10	0	0	1	1	0	0	0	0	0	0	0	0	0	0	44.4	49.2
1245	88	0	79	1	7	0	1	0	0	0	0	0	0	1	1.1	0	0	0	0	45.7	53.2
1300	79	0	66	1	8	0	1	0	2	0	1	0	0	0	0	0	0	0	0	46.1	51.9
1315	105	1	90	2	10	1	0	0	0	0	1	0	0	1	1	0	0	0	0	44.3	50.3
1330	82	1	71	1	7	0	0	0	2	0	0	0	0	2	2.4	0	0	0	0	45.1	50.3
1345	83	0	70	1	8	0	1	1	0	0	1	0	0	1	1.2	0	0	0	0	45.8	51.2
1400	106	0	85	3	15	1	1	0	0	1	0	0	0	0	0	0	0	0	0	44.2	50.1
1415	93	1	81	0	6	3	0	0	0	1	1	0	0	2	2.2	0	0	0	0	44.4	51.7
1430	110	0	95	1	6	0	0	0	2	1	4	0	0	1	6	5.5	1	0.9	0	45.9	53.5
1445	109	0	89	3	12	0	2	0	0	1	2	0	0	1	0.9	0	0	0	0	43.5	48.5
1500	86	1	80	0	2	2	1	0	0	0	0	0	0	2	2.3	0	0	0	0	49.5	56.4
1515	102	1	93	1	6	0	0	0	0	1	0	0	0	4	3.9	1	1	0	0	47.6	51.9
1530	103	1	79	6	15	0	2	0	0	0	0	0	0	2	1.9	0	0	0	0	46.9	53.5
1545	110	1	98	3	8	0	0	0	0	0	0	0	0	2	1.8	1	0.9	1	0.9	46.5	51.9
1600	101	1	92	0	8	0	0	0	0	0	0	0	0	2	2	1	1	1	1	47.2	53.2
1615	139	1	122	2	12	0	1	0	0	1	0	0	0	2	1.4	0	0	0	0	46	51
1630	149	1	133	2	11	1	0	0	0	1	0	0	0	3	2	1	0.7	0	0	47.9	54.4
1645	121	0	109	0	11	0	0	0	0	1	0	0	0	3	2.5	0	0	0	0	46.6	52.6
1700	141	2	129	1	9	0	0	0	0	0	0	0	0	5	3.5	2	1.4	0	0	48.2	54.8
1715	142	2	131	1	8	0	0	0	0	0	0	0	0	6	4.2	3	2.1	1	0.7	48.6	53
1730	148	1	141	1	5	0	0	0	0	0	0	0	0	10	6.8	4	2.7	0	0	47.9	53.2
1745	111	1	108	0	1	0	0	0	1	0	0	0	0	2	1.8	0	0	0	0	48.5	54.8
1800	117	0	112	2	2	0	0	0	0	0	1	0	0	3	2.6	1	0.9	1	0.9	45	53.2
1815	116	2	108	1	4	1	0	0	0	0	0	0	0	3	2.6	0	0	0	0	49	53.7
1830	92	1	90	0	1	0	0	0	0	0	0	0	0	3	3.3	0	0	0	0	43.1	51.9
1845	83	0	79	1	3	0	0	0	0	0	0	0	0	6	7.2	1	1.2	0	0	47.1	53
1900	51	0	48	1	1	0	0	0	0	1	0	0	0	7	13.7	1	2	0	0	49.6	59.3
1915	54	0	51	1	2	0	0	0	0	0	0	0	0	4	7.4	1	1.9	1	1.9	48	56.4
1930	36	0	36	0	0	0	0	0	0	0	0	0	0	3	8.3	0	0	0	0	51.2	57.3
1945																					

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Time	Total	Classification												>PSL 60	>PSL% 60	>SL1 68 ACPO	>SL1% 68 ACPO	>SL2 75 DFT	>SL2% 75 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	15	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50.1	56.4	
0015	11	0	11	0	0	0	0	0	0	0	0	0	0	0	1	9.1	0	0	52.6	53.2	
0030	13	0	12	0	1	0	0	0	0	0	0	0	0	5	38.5	3	23.1	3	57.1	76.1	
0045	6	0	5	0	1	0	0	0	0	0	0	0	0	1	16.7	0	0	0	48.3	-	
0100	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49.1	-	
0115	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48.7	-	
0130	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44.3	-	
0145	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	47.4	-	
0200	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50.8	-	
0215	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	-	
0230	7	0	6	0	1	0	0	0	0	0	0	0	0	1	14.3	1	14.3	0	51.6	-	
0245	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57.8	-	
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	1	100	0	70.3	-	
0315	3	0	3	0	0	0	0	0	0	0	0	0	0	1	33.3	1	33.3	0	60.5	-	
0330	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	45.5	-	
0345	3	0	2	0	1	0	0	0	0	0	0	0	0	2	66.7	1	33.3	1	33.3	63.1	-
0400	3	0	3	0	0	0	0	0	0	0	0	0	0	1	33.3	0	0	0	48.8	-	
0415	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54.1	-	
0430	3	0	3	0	0	0	0	0	0	0	0	0	0	1	33.3	1	33.3	0	53.9	-	
0445	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55.7	-	
0500	6	0	3	0	2	0	0	0	0	1	0	0	0	2	33.3	0	0	0	50.9	-	
0515	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	1	100	0	68.5	-	
0530	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	-	
0545	5	0	5	0	0	0	0	0	0	0	0	0	0	3	60	0	0	0	59.4	-	
0600	7	1	4	0	2	0	0	0	0	0	0	0	0	2	28.6	0	0	0	53	-	
0615	6	0	6	0	0	0	0	0	0	0	0	0	0	2	33.3	2	33.3	1	16.7	61.2	-
0630	19	0	17	0	2	0	0	0	0	0	0	0	0	4	21.1	1	5.3	0	52.1	62.6	
0645	21	0	19	1	1	0	0	0	0	0	0	0	0	3	14.3	2	9.5	1	4.8	54.2	59.5
0700	21	1	20	0	0	0	0	0	0	0	0	0	0	4	19	1	4.8	0	49.3	60.4	
0715	20	0	19	0	1	0	0	0	0	0	0	0	0	3	15	0	0	0	53.2	58.4	
0730	12	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48.2	54.1	
0745	21	2	18	0	0	0	0	0	0	1	0	0	0	2	9.5	1	4.8	1	4.8	48.9	56.4
0800	24	1	21	0	1	0	0	0	0	1	0	0	0	1	4.2	0	0	0	47.8	55.7	
0815	44	2	41	0	1	0	0	0	0	0	0	0	0	5	11.4	1	2.3	0	51.6	59.5	
0830	54	0	53	0	1	0	0	0	0	0	0	0	0	7	13	1	1.9	0	49.7	55.5	
0845	37	2	31	1	2	0	1	0	0	0	0	0	0	4	10.8	0	0	0	49.4	57.3	
0900	55	0	52	0	3	0	0	0	0	0	0	0	0	6	10.9	1	1.8	0	49.7	57.5	
0915	84	2	75	3	4	0	0	0	0	0	0	0	0	1	1.2	0	0	0	47.6	53.9	
0930	74	3	70	1	0	0	0	0	0	0	0	0	0	4	5.4	0	0	0	47.2	53.9	
0945	71	2	69	0	0	0	0	0	0	0	0	0	0	2	2.8	0	0	0	48.4	55	
1000	76	3	69	1	2	1	0	0	0	0	0	0	0	5	6.6	1	1.3	0	40.9	54.6	
1015	84	1	80	0	3	0	0	0	0	0	0	0	0	5	6	1	1.2	0	46.3	52.3	
1030	77	0	70	1	5	0	1	0	0	0	0	0	0	2	2.6	0	0	0	46.2	53	
1045	93	1	90	0	2	0	0	0	0	0	0	0	0	7	7.5	1	1.1	0	45.3	53.9	
1100	76	0	73	1	1	0	1	0	0	0	0	0	0	2	2.6	1	1.3	0	46.5	52.8	
1115	105	4	96	3	1	1	0	0	0	0	0	0	0	1	1	0	0	0	45.8	51.7	
1130	101	2	96	2	1	0	0	0	0	0	0	0	0	1	1	1	1	0	44	51	
1145	80	1	77	1	1	0	0	0	0	0	0	0	0	1	1.3	1	1.3	0	45.9	49.9	
1200	96	0	96	0	0	0	0	0	0	0	0	0	0	2	2.1	0	0	0	44.6	52.1	
1215	108	2	102	2	1	0	0	0	0	1	0	0	0	1	0.9	0	0	0	44.1	50.1	
1230	94	0	93	1	0	0	0	0	0	0	0	0	0	2	2.1	1	1.1	1	44.6	51	
1245	93	2	89	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44.5	50.3	
1300	86	1	78	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	46	54.1	
1315	87	5	78	1	3	0	0	0	0	0	0	0	0	5	5.7	0	0	0	47.5	55.9	
1330	94	4	87	0	3	0	0	0	0	0	0	0	0	5	5.3	0	0	0	43.5	51.2	
1345	102	2	94	4	1	0	1	0	0	0	0	0	0	3	2.9	2	2	1	46.8	54.1	
1400	90	4	84	1	1	0	0	0	0	0	0	0	0	5	5.6	1	1.1	0	48.8	55.5	
1415	90	0	90	0	0	0	0	0	0	0	0	0	0	8	8.9	0	0	0	47.7	55.3	
1430	75	2	71	0	2	0	0	0	0	0	0	0	0	2	2.7	2	2.7	1	46.4	52.1	
1445	79	2	76	0	1	0	0	0	0	0	0	0	0	1	1.3	0	0	0	46.7	52.1	
1500	78	1	75	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	44.8	50.8	
1515	78	1	76	1	0	0	0	0	0	0	0	0	0	3	3.8	0	0	0	46.2	53.7	
1530	91	3	82	1	5	0	0	0	0	0	0	0	0	4	4.4	0	0	0	45.7	51.7	
1545	94	0	91	1	2	0	0	0	0	0	0	0	0	2	2.1	0	0	0	44.8	52.1	
1600	101	3	96	1	1	0	0	0	0	0	0	0	0	5	5	0	0	0	46	51.4	
1615	78	0	73	1	4	0	0	0	0	0	0	0	0	2	2.6	1	1.3	0	46.7	51.4	
1630	100	3	94	0	3	0	0	0	0	0	0	0	0	5	5	3	3	1	46.5	53	
1645	104	1	95	2	6	0	0	0	0	0	0	0	0	3	2.9	0	0	0	47	52.6	
1700	100	2	96	0	2	0	0	0	0	0	0	0	0	7	7	3	3	0	47.7	53	
1715	74	1	70	0	3	0	0	0	0	0	0	0	0	7	9.5	1	1.4	0	48.7	56.4	
1730	65	3	61	0	1	0	0	0	0	0	0	0	0	11	16.9	3	4.6	1	1.5	51.6	60.6
1745	67	3	64	0	0	0	0	0	0	0	0	0	0	4	6	2	3	0	50.3	56.6	
1800	53	1	50	0	1	0	1	0	0	0	0	0	0	8	15.1	3	5.7	0	53	58.2	
1815	46	0	43	1	2	0	0	0	0	0	0	0	0	5	10.9	3	6.5	1	2.2	50.7	55.5
1830	52	0	49	0	3	0	0	0	0	0	0	0	0	5	9.6	1	1.9	1	1.9	49.9	57.7
1845	42	0	40	2	0	0	0	0	0	0	0	0	0	2	4.8	0	0	0	47.6	54.6	
1900	42	1	38	1	2	0	0	0	0	0	0	0	0	7	16.7	0	0	0	52.9	59.9	
1915	36	1	34	0	1	0	0	0	0	0	0	0	0	1	2.8	1	2.8	0	50.2	55.5	
1930	37	0	36	0	1	0	0	0	0	0	0	0	0	5	13.5	1	2.7	1	2.7	51.4	56.6
1945	33	1	31	0	1	0	0	0	0	0	0	0	0	5	15.2	1	3	0	52.6	58.4	
2000	26	0	26	0	0	0	0	0	0	0	0	0	0	3	11.5	1	3.8	0	51.4	56.8	
2015	21	0	21	0	0	0	0	0	0	0	0	0	0	1	4.8	0	0	0	51.1	57	
2030	21	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47.2	54.6	
2045	23	1	20	0	2	0	0	0	0												

Virtual Day (7)

Time	Total	Classification												>PSL 60	>PSL% 60	>SL1 68 ACPO	>SL1% 68 ACPO	>SL2 75 DfT	>SL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	19	0	17	0	1	0	0	0	0	0	0	0	0	4	20.3	2	8.3	1	4.5	51.9	62.2
0100	8	0	6	0	1	0	0	0	0	0	0	0	0	2	19.3	1	8.8	1	8.8	52.2	-
0200	6	0	5	0	0	0	0	0	0	0	0	0	0	1	10	0	2.5	0	0	52.4	-
0300	7	0	5	0	1	0	0	0	0	0	0	0	0	1	10	0	6	0	2	49.7	-
0400	11	0	9	0	1	0	0	0	0	1	1	0	0	1	11.4	0	3.8	0	1.3	49.3	57.7
0500	54	0	45	0	5	0	0	0	1	2	1	0	0	10	18.6	2	3.1	1	1	51.8	61.3
0600	154	1	127	2	12	2	4	0	1	4	0	0	0	20	13.2	4	2.8	1	0.7	51.2	59.1
0700	385	2	326	7	33	5	2	0	2	1	6	0	0	18	4.7	3	0.7	1	0.1	47.6	55
0800	391	3	333	5	33	3	3	1	4	2	3	0	0	13	3.3	2	0.4	0	0	46.1	53.7
0900	347	2	297	5	27	3	3	0	2	2	5	0	0	8	2.4	2	0.5	0	0.1	46.1	53
1000	368	3	313	6	31	2	3	0	2	3	4	0	0	9	2.4	1	0.3	0	0.1	44.2	51.4
1100	355	3	306	5	28	3	4	0	3	1	3	0	0	7	2.1	2	0.4	0	0	44.4	51.4
1200	342	2	299	5	24	2	3	0	2	2	4	0	0	7	2	1	0.4	0	0.1	45.1	51.7
1300	345	4	298	6	27	2	2	0	2	1	3	0	0	9	2.6	2	0.5	0	0.1	45.6	52.6
1400	357	4	311	6	23	3	2	0	1	2	4	0	0	12	3.3	2	0.6	0	0.1	45.5	52.1
1500	376	3	335	5	26	1	1	0	1	1	2	0	0	10	2.8	2	0.5	0	0.1	46.2	52.8
1600	474	4	422	8	33	2	1	0	1	1	1	0	0	11	2.4	2	0.5	1	0.1	46.2	52.8
1700	470	5	434	3	20	5	1	0	0	1	0	0	0	19	4.1	5	1	1	0.2	47.4	53.9
1800	319	2	300	2	11	1	0	0	0	0	1	0	0	21	6.5	4	1.3	1	0.3	48.3	55.5
1900	170	2	162	1	5	0	0	0	0	0	0	0	0	18	10.4	3	1.5	1	0.5	50.3	57.5
2000	111	1	106	1	3	1	0	0	0	0	0	0	0	11	10.3	3	2.8	1	0.8	49.5	57.7
2100	86	0	84	0	2	0	0	0	0	0	0	0	0	10	12.1	2	2.5	1	0.7	49.7	58.2
2200	87	0	84	0	2	0	0	0	0	0	0	0	0	8	9	2	2	0	0.3	48.8	56.6
2300	31	0	29	0	1	0	0	0	0	0	0	0	0	5	16.4	1	3.2	0	1.4	51.1	60.4
1200	4528	38	3974	63	317	32	25	4	21	17	37	1	2	145	3.2	27	0.6	5	0.1	46.1	53.2
1215	5050	41	4451	67	339	35	29	4	22	18	41	1	2	205	4.1	39	0.8	8	0.2	46.5	53.9
1230	5169	42	4564	67	343	35	29	4	23	19	41	1	2	218	4.2	42	0.8	9	0.2	46.6	53.9
1245	5274	43	4651	68	351	36	29	5	24	22	43	1	2	236	4.5	47	0.9	12	0.2	46.7	54.1

Virtual Week (1)

Time	Total	Classification												>PSL 60	>PSL% 60	>SL1 68 ACPO	>SL1% 68 ACPO	>SL2 75 DfT	>SL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
Mon	5258	27	4518	82	430	24	45	9	29	35	56	1	2	188	3.6	39	0.7	7	0.1	46.2	53.5
Tue	5451	26	4666	62	409	136	29	11	34	21	54	1	2	198	3.6	30	0.6	3	0.1	46.3	53.5
Wed	5811	54	5057	80	438	20	30	2	37	31	59	2	1	272	4.7	42	0.7	17	0.3	47.1	54.4
Thu	5702	30	4978	72	432	33	36	2	26	29	63	0	1	273	4.8	60	1.1	20	0.4	46.6	54.4
Fri	6005	35	5253	83	452	30	38	5	28	24	51	2	4	244	4.1	56	0.9	15	0.2	46.4	53.5
Sat	4649	52	4277	54	195	5	19	3	12	10	20	1	1	234	5	40	0.9	4	0.1	47	54.6
Sun	4045	78	3811	41	103	2	5	0	2	3	0	0	0	243	6	61	1.5	15	0.4	47.4	55
5 Day Ave.	5645	34	4894	76	432	49	36	6	31	28	57	1	2	235	4.2	45	0.8	12	0.2	46.5	53.9
7 Day Ave.	5274	43	4651	68	351	36	29	5	24	22	43	1	2	236	4.5	47	0.9	12	0.2	46.7	54.1
--	36921	302	32560	474	2459	250	202	32	168	153	303	7	11	1652	4.5	328	0.9	81	0.2	46.7	54.1

Summary Graphs



APPENDIX E B1149 Pavement Testing Results

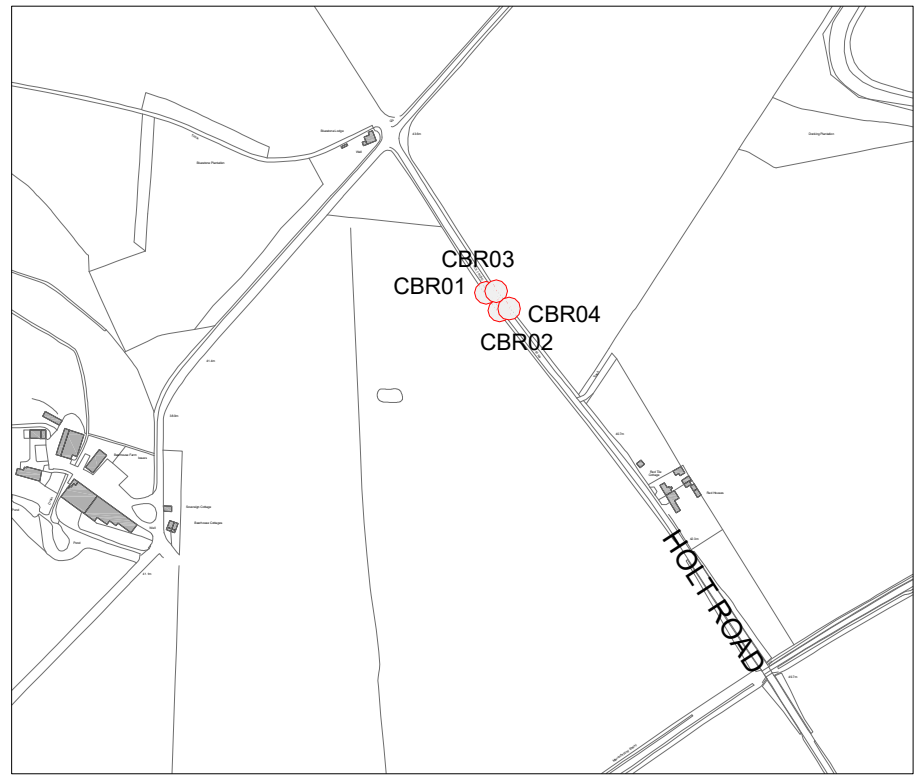
B1149 HOLT ROAD

○ CBR01

○ CBR03

○ CBR02

○ CBR04



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Tom McCabe
 Executive Director of
 Community and Environmental Services
 Norfolk County Council
 County Hall, Martineau Lane
 Norwich NR1 2SG

DRAWING TITLE
 CBR Location Plan
 Norfolk Vanguard

REV.	DESCRIPTION	DRAWN BY	CHECKED	DATE

SURVEYED BY	INITIALS	DATE	DRAWING No.
			ROHA0001/1
DESIGNED BY			PROJECT TITLE
			Norfolk Vanguard
DRAWN BY	GS	18/04/19	SCALE
			1:500 @ A4
CHECKED BY	MLB	18/04/19	FILE No.
			ROHA0001

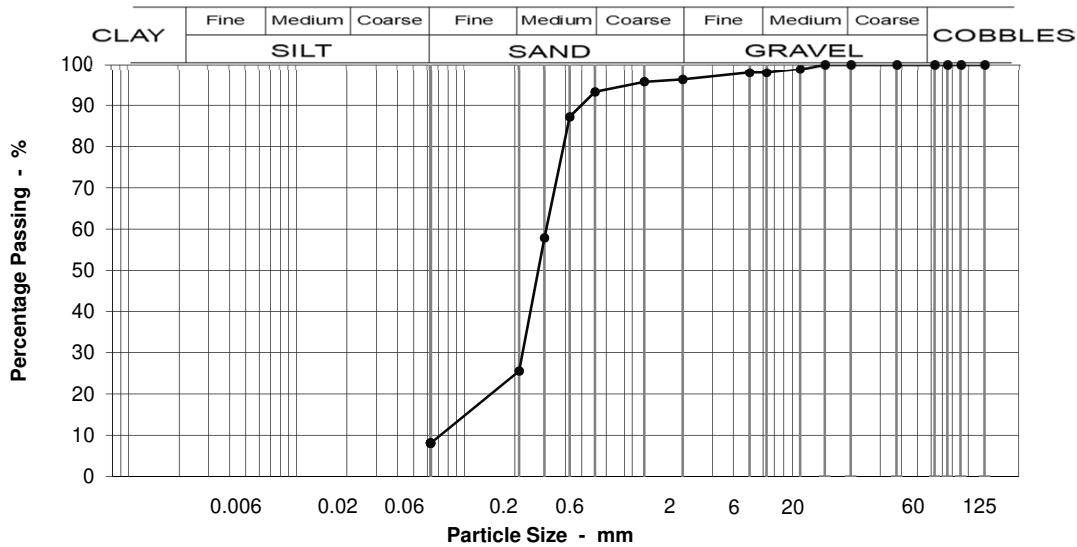
Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9

Scheme: **Norfolk Vanguard and Boreas**

Location: **CBR 1 @ 0.7m**

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	100
20	100
14	100
10	99
6.3	98
5	98
2	96
1.18	96
0.600	93
0.425	87
0.300	58
0.212	26
0.063	8

Specification for Highway Works Classification
Table 6/2

This material complies with the following material classes 1B, 6E/6R, 6M.

Moisture content % **6**

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	0
Medium GRAVEL	2
Fine GRAVEL	2
Coarse SAND	3
Medium SAND	68
Fine SAND	17
Silt & Clay	8

Grading Analysis	
D100	10
D60	0.31
D10	0.08
Uniformity Coefficient	4

Description
Dark yellowish brown, slightly gravelly, medium SAND. Gravel is fine and medium, sub-angular flint.

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Test Code = 610



Peter Hardiment (Operations Manager)



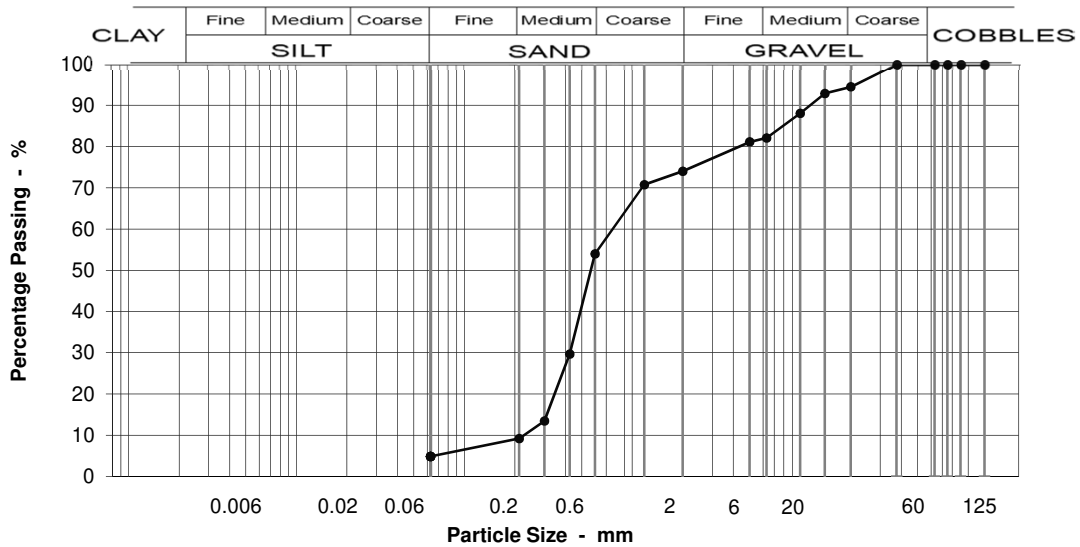
Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9

Scheme: Norfolk Vanguard and Boreas

Location: CBR 2 @ 0.2m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	100
20	94
14	93
10	88
6.3	82
5	81
2	74
1.18	71
0.600	54
0.425	30
0.300	13
0.212	9
0.063	5

Specification for Highway Works Classification
Table 6/2

This material complies with the following material classes 1B, 6E/6R, 6M.

Moisture content % 5

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	6
Medium GRAVEL	12
Fine GRAVEL	8
Coarse SAND	20
Medium SAND	45
Fine SAND	4
Silt & Clay	5

Grading Analysis	
D100	20
D60	0.81
D10	0.23
Uniformity Coefficient	4

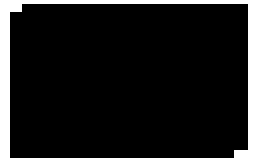
Description
Light brown and orangey brown, very gravelly, medium and coarse SAND. Gravel is fine, medium and coarse, sub-angular flint.

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Test Code = 610



Peter Hardiment (Operations Manager)



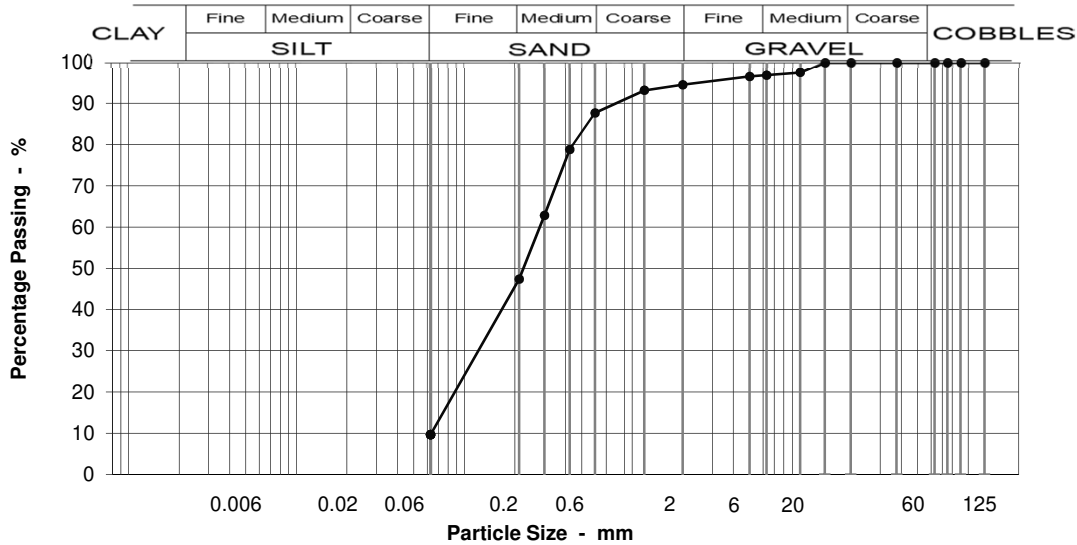
Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9

Scheme: Norfolk Vanguard and Boreas

Location: CBR 3 @ 0.2m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	100
20	100
14	100
10	97
6.3	97
5	97
2	94
1.18	93
0.600	88
0.425	79
0.300	63
0.212	47
0.063	10

Specification for Highway Works Classification
Table 6/2

This material complies with the following material classes 1B, 6E/6R, 6M.

Moisture content % 10

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	0
Medium GRAVEL	3
Fine GRAVEL	2
Coarse SAND	7
Medium SAND	40
Fine SAND	38
Silt & Clay	10

Grading Analysis	
D100	10
D60	0.28
D10	0.06
Uniformity Coefficient	4

Description
Light brown and orangey brown, slightly gravelly, fine and medium SAND. Gravel is fine and medium, sub-angular flint.

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Test Code = 610



Peter Hardiment (Operations Manager)



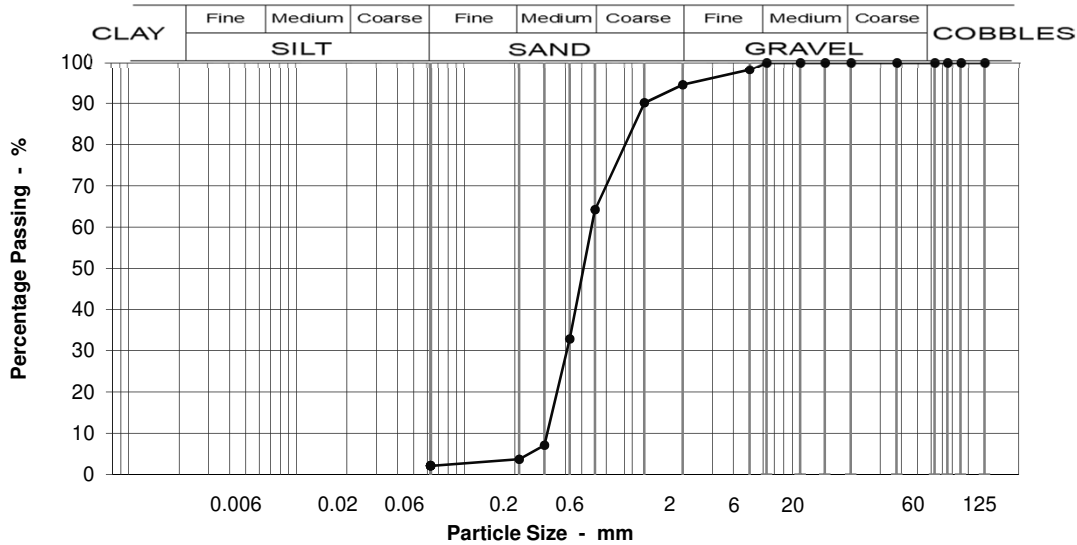
Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9

Scheme: Norfolk Vanguard and Boreas

Location: CBR 4 @ 0.2m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	100
20	100
14	100
10	100
6.3	100
5	98
2	94
1.18	90
0.600	64
0.425	33
0.300	7
0.212	4
0.063	2

Specification for Highway Works Classification
Table 6/2

This material complies with the following material classes 1B, 6E/6R, 6M.

Moisture content % 5

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	0
Medium GRAVEL	0
Fine GRAVEL	6
Coarse SAND	30
Medium SAND	61
Fine SAND	2
Silt & Clay	2

Grading Analysis	
D100	5
D60	0.58
D10	0.31
Uniformity Coefficient	2

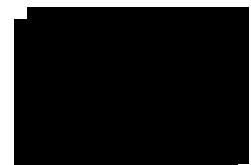
Description	
Orangey brown and yellowish brown, slightly gravelly, medium to coarse SAND. Gravel is fine, sub-angular flint.	

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Test Code = 610



Peter Hardiment (Operations Manager)



Norfolk Partnership Laboratory

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 Peterborough
 PE3 8DW

Our Project No ROHA0001
Our Report and sample No NCCL201904029-642
Your Sample Ref B4029
Your Project or Order No
Date Report Issued 23-Apr-19
Date Tested 08-Apr-19

Determination of the California Bearing Ratio to BS 1377 : PART 4 : 1990

Scheme	Norfolk Vanguard and Boreas		
Location	CBR 1 @ 0.7m		
Date sampled	27-Mar-19	Date received	29-Mar-19
Sample type	Bulk Disturbed	Sample Mass	18.955kg

If a sample certificate was provided it is available for inspection.
 The accuracy of information provided by third parties cannot be guaranteed.

Material	Soil
Description	Dark yellowish brown, slightly gravelly, medium SAND. Gravel is fine and medium, sub-angular flint.

Supplier	Not applicable	Source	Ex site
-----------------	----------------	---------------	---------

Location	Test Specimen			
Orientation	Not applicable			
	Not applicable			
	Preparation Details			
Method of Division	Quartering			
Preparation Method	Sieving, Natural Moisture Content			
Condition	Unsoaked			
Retained 37.5mm	%	1		
Retained 20mm	%	2.1		
Number of layers		3	CBR Value Top	% 43.0
Blows per layer		N/A	CBR Value Bottom	% 104.0
BS Method	3.7, Vib.Hammer			
Bulk Density	Mg/m ³	2.07	Moisture Content Top	% 7.0
Dry Density	Mg/m ³	1.94	Moisture Cont. Bottom	% 7.0
Initial Moisture Content	%	6.6	Moisture Content Method	Oven dried @ 105-110°C

Remarks

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Test Code = 642



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 Peterborough
 PE3 8DW

Our Project No ROHA0001
Our Report and sample No NCCL2019040210-642
Your Sample Ref B40210
Your Project or Order No
Date Report Issued 23-Apr-19
Date Tested 08-Apr-19

Determination of the California Bearing Ratio to BS 1377 : PART 4 : 1990

Scheme	Norfolk Vanguard and Boreas		
Location	CBR 2 @ 0.2m		
Date sampled	27-Mar-19	Date received	29-Mar-19
Sample type	Bulk Disturbed	Sample Mass	22.35kg

If a sample certificate was provided it is available for inspection.
 The accuracy of information provided by third parties cannot be guaranteed.

Material	Soil		
Description	Light brown and orangey brown, very gravelly, medium and coarse SAND. Gravel is fine, medium and coarse, sub-angular flint.		

Supplier	Not applicable	Source	Ex site
-----------------	----------------	---------------	---------

Location	Test Specimen		
Orientation	Not applicable		
	Not applicable		
	Preparation Details		
Method of Division	Quartering		
Preparation Method	Sieving, Natural Moisture Content		
Condition	Unsoaked		
Retained 37.5mm	%	3	
Retained 20mm	%	7.2	
Number of layers		3	CBR Value Top % 46.0
Blows per layer		N/A	CBR Value Bottom % 133.0
BS Method	3.7, Vib.Hammer		
Bulk Density	Mg/m ³	2.10	Moisture Content Top % 5.3
Dry Density	Mg/m ³	2.00	Moisture Cont. Bottom % 5.5
Initial Moisture Content	%	5.4	Moisture Content Method Oven dried @ 105-110°C

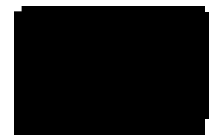
Remarks

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Test Code = 642



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 PE3 8DW

Our Project No ROHA0001
Our Report and sample No NCCL2019040211-642
Your Sample Ref B40211
Your Project or Order No
Date Report Issued 23-Apr-19
Date Tested 08-Apr-19

Determination of the California Bearing Ratio to BS 1377 : PART 4 : 1990

Scheme	Norfolk Vanguard and Boreas		
Location	CBR 3 @ 0.2m		
Date sampled	27-Mar-19	Date received	29-Mar-19
Sample type	Bulk Disturbed	Sample Mass	20.95kg

If a sample certificate was provided it is available for inspection.
 The accuracy of information provided by third parties cannot be guaranteed.

Material	Soil		
Description	Light brown and orangey brown, slightly gravelly, fine and medium SAND. Gravel is fine and medium, sub-angular flint.		
Supplier	Not applicable	Source	Ex site

Location	Not applicable		
Orientation	Not applicable		
Test Specimen			
Method of Division	Quartering		
Preparation Method	Sieving, Natural Moisture Content		
Condition	Unsoaked		
Retained 37.5mm	%	0	
Retained 20mm	%	0.6	
Number of layers		3	CBR Value Top % 15.0
Blows per layer		N/A	CBR Value Bottom % 12.0
BS Method	3.7, Vib.Hammer		
Bulk Density	Mg/m ³	2.22	Moisture Content Top % 11.0
Dry Density	Mg/m ³	2.01	Moisture Cont. Bottom % 9.7
Initial Moisture Content	%	11.0	Moisture Content Method Oven dried @ 105-110°C

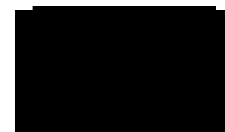
Remarks

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Test Code = 642



Peter Hardiment (Operations Manager)



Norfolk Partnership Laboratory

Email: civil.laboratory@norfolk.gov.uk

Royal Haskoning
 FAO Ryan Eldon
 Rightwell House
 Bretton
 Peterborough
 PE3 8DW

Our Project No ROHA0001
Our Report and sample No NCCL2019040212-642
Your Sample Ref B40212
Your Project or Order No
Date Report Issued 23-Apr-19
Date Tested 08-Apr-19

Determination of the California Bearing Ratio to BS 1377 : PART 4 : 1990

Scheme	Norfolk Vanguard and Boreas		
Location	CBR 4 @ 0.2m		
Date sampled	27-Mar-19	Date received	29-Mar-19
Sample type	Bulk Disturbed	Sample Mass	19.9kg

If a sample certificate was provided it is available for inspection.
 The accuracy of information provided by third parties cannot be guaranteed.

Material	Soil		
Description	Orangey brown and yellowish brown, slightly gravelly, medium to coarse SAND. Gravel is fine, sub-angular flint.		
Supplier	Not applicable	Source	Ex site

Location	Test Specimen		
Orientation	Not applicable		
	Not applicable		
	Preparation Details		
Method of Division	Quartering		
Preparation Method	Sieving, Natural Moisture Content		
Condition	Unsoaked		
Retained 37.5mm	%	0	
Retained 20mm	%	1.1	
Number of layers		3	CBR Value Top % 32.0
Blows per layer		N/A	CBR Value Bottom % 64.0
BS Method	3.7, Vib.Hammer		
Bulk Density	Mg/m ³	1.90	Moisture Content Top % 5.4
Dry Density	Mg/m ³	1.80	Moisture Cont. Bottom % 5.5
Initial Moisture Content	%	5.5	Moisture Content Method Oven dried @ 105-110°C

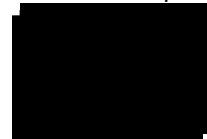
Remarks

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Test Code = 642

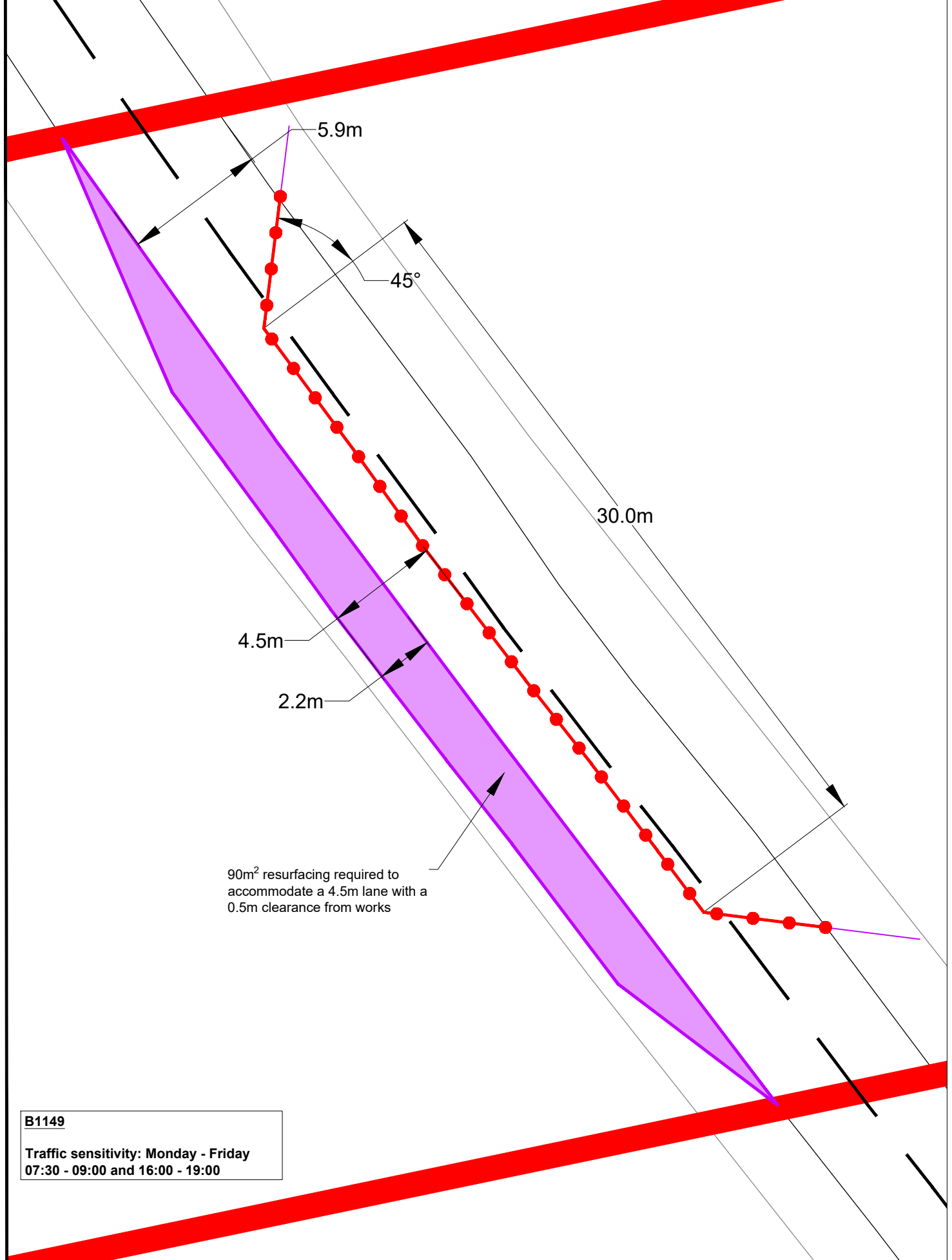


Peter Hardiment (Operations Manager)



APPENDIX F B1149 Traffic Management

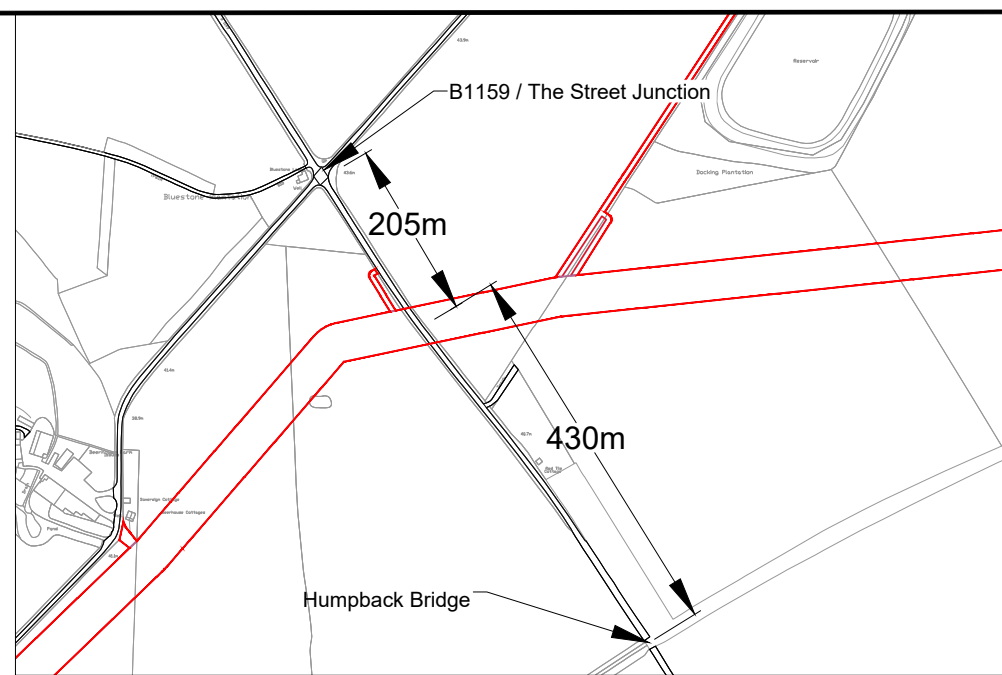
DO NOT SCALE



90m² resurfacing required to accommodate a 4.5m lane with a 0.5m clearance from works

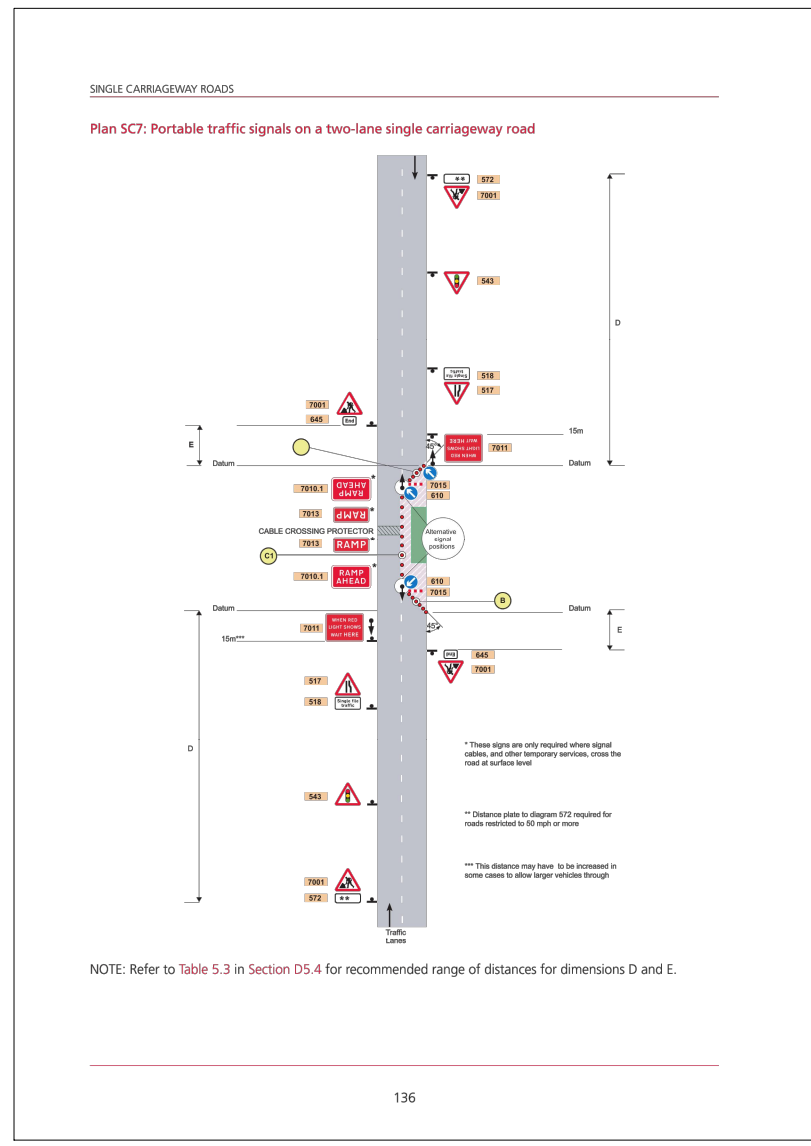
B1149
Traffic sensitivity: Monday - Friday
07:30 - 09:00 and 16:00 - 19:00

B1149 - Cable Crossing



KEY

- DCO ORDER LIMITS
- REQUIRED RESURFACING
- INDICATIVE CONES



Based on Plan SC7 of Traffic Signs Manual (2009) Chapter 8 Part 1



NORFOLK VANGUARD

B1149
TRAFFIC MANAGEMENT CONCEPT

APPENDIX G Construction Noise Assessment

1 CONSTRUCTION NOISE ASSESSMENT

1. This construction noise impact assessment considers the potential for noise impacts at receptor CRR20 associated with changes in the proposed method of crossing the A1067 to a trenchless crossing solution and specifically works at Mobilisation Areas MA5a and MA5b, shown on **Plate A.1**. MA5a and MA5b are being proposed as drill and reception sites for a trenchless crossing of the A1067, replacing the originally assessed open-cut trenching method of crossing.

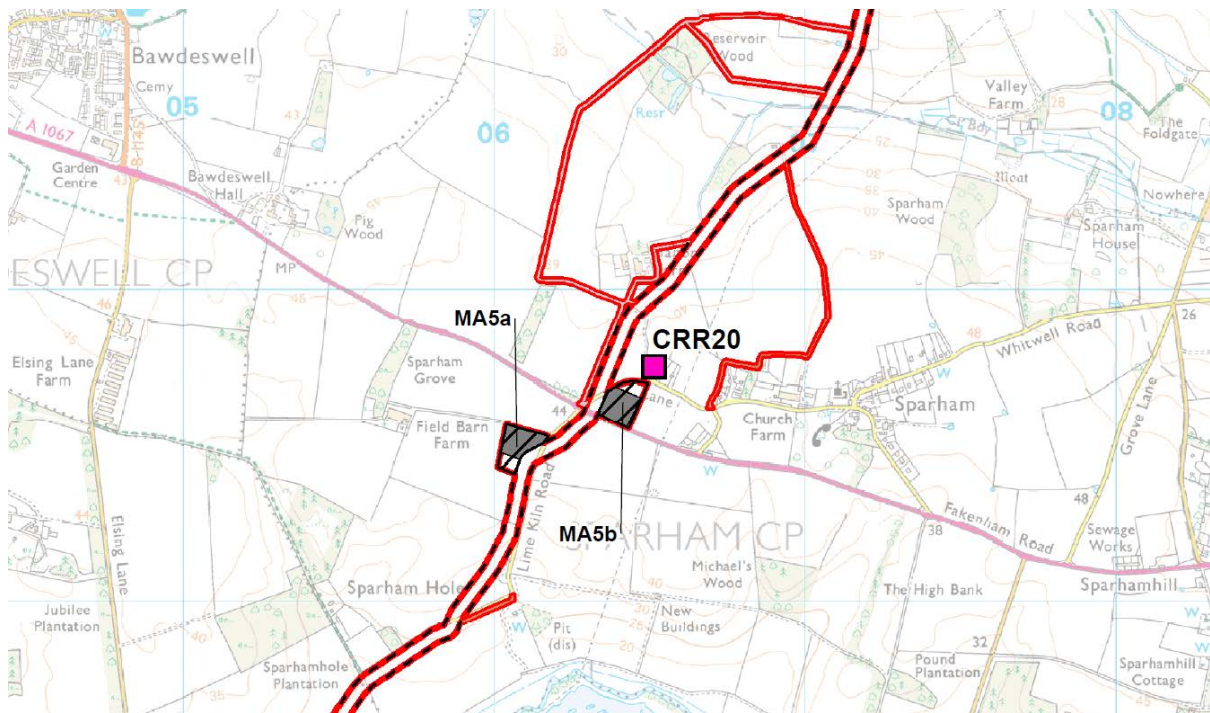


Plate A.1: Proposed works area

2. Potential effects from proposed construction works at MA5a and MA5b have been assessed in accordance with the BS5228:2009+A1:2014 Daytime (07:00 to 19:00), Evening and weekends (19:00 to 23:00 Monday to Friday, 13:00 to 23:00 Saturday and 07:00 to 23:00 Sunday), and Night time (23:00 to 07:00) reference periods. Any associated impacts of the proposed Norfolk Vanguard scheme are highlighted, and mitigation is considered where appropriate.
3. This document supports Environmental Statement (ES) Chapter 25 Onshore Noise and Vibration.

1.1 Construction Noise Assessment Methodology

4. This noise impact assessment adheres with the methodology set out in Section 25.4 of Chapter 25 Noise and Vibration. SoundPLAN noise modelling was utilised in the construction phase assessment.

1.1.1 Construction Phase Noise Assessment

5. BS 5228:2009+A1:2014³ specifies a construction noise limit based on the existing ambient noise level for different periods of the day. The predicted construction noise levels were assessed against noise limits derived from advice within Annex E of BS 5228. Table A.1, reproduced from BS 5228, presents the criteria for selection of a noise limit for a specific receptor location.

Table A.1 Construction noise threshold levels based on the ABC method (BS 5228)

Assessment category and threshold value period (L_{Aeq})	Threshold value, in decibels (dB)		
	Category A ^{A)}	Category B ^{B)}	Category C ^{C)}
Night time (23.00 – 07.00)	45	50	55
Evenings and weekends ^{D)}	55	60	65
Daytime (07.00 – 19.00) and Saturdays (07.00 – 13.00)	65	70	75
A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.			
B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.			
C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.			
D) 19.00–23.00 weekdays, 13.00–23.00 Saturdays and 07.00–23.00 Sundays.			

6. The model used in this assessment incorporated noise sources located in the study area, nearby residential dwellings and other buildings, intervening ground cover and topographical information.
7. Noise levels for the construction phase were calculated using the methods and guidance in BS 5228. This Standard provides methods for predicting receptor noise

³ British Standards Institution (2014) [BS] 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise

levels from construction works based on the number and type of construction plant and activities operating on site, with corrections to account for:

- The 'on-time' of the plant, as a percentage of the assessment period;
- Distance from source to receptor;
- Acoustic screening by existing barriers, buildings or topography; and
- Ground type.

8. Construction noise impacts were assessed using the impact magnitude presented in Table A.2 for the daytime period, Table A.3 for the evening and weekend periods, and Table A.4 for the night time period.

Table A.2 Day time construction noise significance criteria

Impact magnitude	Construction noise level (dB)		
	A 65dB threshold	B 70dB threshold	C 75dB threshold
No Impact	≤65	≤70	≤75
Negligible Adverse	≥65.1 - ≤65.9	≥70.1 - ≤70.9	≥75.1 - ≤75.9
Minor Adverse	≥66.0 - ≤67.9	≥71.0 - ≤72.9	≥76.0 - ≤77.9
Moderate Adverse	≥68.0 - ≤69.9	≥73.0 - ≤74.9	≥78.0 - ≤79.9
Major Adverse	≥70	≥75	≥80

Table A.3 Evening and weekends construction noise significance criteria

Impact magnitude	Construction noise level (dB)		
	A 55dB threshold	B 60dB threshold	C 65dB threshold
No Impact	≤55	≤60	≤65
Negligible Adverse	≥55.1 - ≤55.9	≥60.1 - ≤60.9	≥65.1 - ≤65.9
Minor Adverse	≥56.0 - ≤57.9	≥61.0 - ≤62.9	≥66.0 - ≤67.9
Moderate Adverse	≥58.0 - ≤59.9	≥63.0 - ≤64.9	≥68.0 - ≤69.9
Major Adverse	≥60	≥65	≥70

Table A.4 Night time construction noise significance criteria

Impact magnitude	Construction noise level (dB)		
	A 45dB threshold	B 50dB threshold	C 55dB threshold
No Impact	≤45	≤50	≤55
Negligible Adverse	≥45.1 - ≤45.9	≥50.1 - ≤50.9	≥55.1 - ≤55.9
Minor Adverse	≥46.0 - ≤47.9	≥51.0 - ≤52.9	≥56.0 - ≤57.9
Moderate Adverse	≥48.0 - ≤49.9	≥53.0 - ≤54.9	≥58.0 - ≤59.9
Major Adverse	≥50	≥55	≥60

1.1.1.1 Assumptions and indicative plant list

9. Based on ES Chapter 5 Project Description, an indicative list of construction equipment was developed for the construction programme detailed in Table A.5.

Table A.5 Construction noise – trenchless crossing (per location)

Name	No.	Source Type	LwA dB(A)	On time Correction
Tracked Excavator	1	Point	107	50%
Backhoe Loader	1	Point	96	50%
Bulldozer	1	Point	108	50%
Dumper	1	Point	101	50%
Mobile Crane	1	Point	106	25%
Cement Mixer Truck (Discharging)	1	Point	103	25%
Truck Mounted Concrete Pump and Boom Arm	1	Point	108	25%
Piling*	1	Point	118	10%
Drilling Rig	1	Point	105	75%
Water Pump	1	Point	93	75%
Generator	1	Point	105	100%
*Modelled as 1 source with 75% on time as equivalent to 3 sources with 25% on time.				
All plant operational during daytime. Highlighted cell indicates reduced plant operational during the evening, weekend and night time periods only.				

1.1.2 Construction Phase Vibration Assessment

10. Piling may be required, as a worst case, depending on ground conditions to temporarily anchor the drilling rigs associated with trenchless crossings.
11. Ground-borne vibration may lead to perceptible levels of vibration at nearby receptors, which at higher levels, can cause annoyance to residents. In extreme cases, cosmetic or structural building damage can occur, however vibration levels have to be of a significant magnitude for this effect to be manifested and such cases are rare.
12. High vibration levels generally arise from 'heavy' construction works such as piling, deep excavation, or dynamic ground compaction.

13. Annex E of BS 5228-2:2009+A1:2014 contains empirical formulae derived by Hiller and Crabb (2000) from field measurements relating to resultant peak particle velocity (PPV) which include parameters for percussive piling. These prediction equations are based on the energy approach.
14. The consequences of predicted levels in terms of human perception and disturbance can be established through direct comparison with the BS 5228-2:2009+1A:2014 guidance vibration levels.
15. Humans are very sensitive to vibration, which can result in concern being expressed at energy levels well below the threshold of damage. Guidance on the human response to vibration in buildings is found in BS 6472-1:2008 Guide to evaluation of human exposure to vibration in buildings, Part 1, Vibration sources other than blasting.
16. BS 6472 describes how to determine the vibration dose value (VDV) from frequency-weighted vibration measurements. VDV is defined by the following equation:

$$VDV_{b/d, \text{ day/night}} = \left(\int_0^T a^4(t) dt \right)^{0.25}$$

17. The VDV is used to estimate the probability of adverse comment which might be expected from human beings experiencing vibration in buildings. Consideration is given to the time of day and use made of occupied space in buildings, whether residential, office or workshop.
18. BS 6472 states that in homes, adverse comment about building vibrations is likely when the vibration levels to which occupants are exposed are only slightly above thresholds of perception.
19. BS 6472 contains a methodology for assessing the human response to vibration in terms of either the VDV, or in terms of the acceleration or the peak velocity of the vibration, which is also referred to as PPV. The VDV is determined over a 16-hour daytime period or 8-hour night-time period.
20. The response of a building to ground-borne vibration is affected by the type of foundation, ground conditions, the building construction and the condition of the building. The vibration level and effects detailed in Table A.6 were adopted based on BS 5228. Limits for transient vibration, above which cosmetic damage could occur, are given numerically in terms of PPV.

Table A.6 Transient vibration guide values for cosmetic damage

Line	Type of building	Peak component particle velocity in frequency range of predominant pulse	
		4Hz to 15Hz	15Hz and above
1	Reinforced or framed structures Industrial and heavy commercial buildings	50mms ⁻¹ at 4Hz and above	
2	Un-reinforced or light framed structures Residential or light commercial type buildings	15mms ⁻¹ at 4Hz increasing to 20mms ⁻¹ at 15Hz	20mms ⁻¹ at 15Hz increasing to 50mms ⁻¹ at 40Hz and above

21. Table A.7 lists the minimum set-back distances at which vibration levels of reportable significance for percussive piling may occur. BS 5228 calculation methods were used to derive the set-back distances outlined in Table A.7.

Table A.7 Predicted distances at which vibration levels may occur

Activity	Set-back distance at which vibration level (PPV) occurs			
	0.3 mm/s	1.0 mm/s	10 mm/s	15 mm/s
Percussive Piling	48m	19m	3m	2m

22. Table A.8 reproduced from research (Rockhill *et al*, 2014) details minimum safe separation distances for piling activities from sensitive receptors to reduce the likelihood of cosmetic damage occurrence.

Table A.8 Receptor proximity for indicated piling methods

Building type (limits on vibrations from Eurocode 3)	Piling Method		
	Press-in	25kJ drop hammer	170 kW 27Hz vibrohammer
Architectural merit	2.6m	29.6m	27.7m
Residential	0.5m	11.8m	13.8m
Light commercial	0.14m	5.9m	5.5m
Heavy industrial	0.06m	3.9m	3.7m
Buried services	0.03m	2.9m	2.2m

23. For construction vibration, the vibration level and effects presented in Table A.9 were adopted based on Table B-1 of BS 5228-2. These levels and effects are based on human perception of vibration in residential environments.

Table A.9 Construction vibration - impact magnitude

Vibration limit PPV (mm/s)	Interpreted significance to humans	Impact magnitude
≤0.14	Vibration unlikely to be perceptible	No Impact
0.14 to 0.3	Vibration might just be perceptible in the most sensitive situations for most vibration frequencies associated with construction	Negligible - Adverse
0.3 to 1.0	Vibration might just be perceptible in residential environments	Minor – Adverse
1.0 to ≤10.0	It is likely that vibration at this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents	Moderate – Adverse
≥10.0	Vibration is likely to be intolerable for any more than a brief exposure to this level	Major – Adverse

1.1.3 Sensitivity

24. For the construction phase assessment, the closest sensitive receptor CRR20 is detailed in Table A.10.

Table A.10 Receptor identification, sensitivity and classification

Receptor Identifier	Receptor Classification	Receptor Sensitivity	British National Grid Co-ordinates	
			Eastings	Northings
CRR20	Residential	Medium	606512	319754

1.1.4 Impact Significance

25. Following the identification of receptor sensitivity and magnitude of the effect, it is possible to determine the significance of the impact. A matrix is presented in Table A.11 as a guide.

Table A.11 Impact significance matrix

		Negative magnitude				
		High/ Major	Medium/ Moderate	Low/ Minor	Negligible	No Impact
Sensitivity	High	Major	Major	Moderate	Minor	Minor
	Medium	Major	Moderate	Minor	Minor	Negligible
	Low	Moderate	Minor	Minor	Negligible	Negligible
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible

1.1.5 Baseline Sound Levels CRR20

26. Baseline sound levels were measured at CRR20 in 2017. A summary of the baseline sound data is provided in Table A.12. These measured noise levels are applicable for CRR20.

Table A.12 Baseline Sound Survey CRR20

Reference Period	Date and Time of Survey	Ambient Noise Level (dB) LAeq,T	Maximum Daily (dB) LAFmax,T	Level exceeded 10% of the time (dB) LA10,T	Level exceeded 90% of the time (dB) LA90,T	Derived BS5228 Threshold Category and Limit
Daytime (07:00 – 23:00)	03/05/2017 14:55:47 to 15:25:47	51.0	78.7	47.8	43.7	65 (A)
Night time (23:00 – 07:00)	04/05/2017 00:58:33 to 01:13:33	29.4	49.9	28.6	25.4	45 (A)

1.2 Potential Noise Impacts from Trenchless Crossing Works at CRR20

1.2.1 Assumptions

27. The following assumptions for the construction programme have been made:
- Construction activities would normally take place between 0700hrs and 1900hrs Monday to Friday and between 0700hrs and 1300hrs on Saturday;
 - Construction activities may require evening and night time working due to the trenchless crossing in accordance with DCO Requirement 26;

- All ground was assumed to have an absorption factor of 0.6 to represent the mixed ground conditions in the area;
 - All noise sources were modelled as point sources at a height of 1.5m;
 - Residential properties were modelled as two-storey buildings at a height of 8.5m;
 - For daytime, receiver levels were predicted at ground floor level (+1.5m) considered representative of daytime resting and amenity space;
 - For night time, receiver levels were predicted at first floor level (+4.0m) considered representative of night time resting; and
 - Acoustic propagation effects were calculated using the BS 5228 methodology which takes into account distance attenuation, barriers and ground absorption.
28. The results of the calculation are presented as the dB $L_{Aeq,T}$ noise level covering the activity period highlighted in the assumptions section above, representing a conservative prediction of the noise level that might affect adjacent receptors during construction activity.

1.2.1.1 Best practice mitigation

29. Best practice construction noise mitigation techniques, which are set out within the Outline Code of Construction Practice (OCoCP) (DCO document 8.1) and within section 25.8.5.6 of ES Chapter 25 represent embedded mitigation to reduce noise impacts, such as using modern equipment, ensuring equipment is properly maintained, ensuring machinery is turned off when not in use, and apply enclosures to particularly noisy equipment. Although the effect of adopting such methods cannot be precisely quantified, it is typically expected that these methods would reduce noise levels by between 5 - 10dB(A). In order to provide a conservative approach, the construction phase assessment has assumed a 5dB(A) reduction for incorporating these mitigation measures.

1.2.2 Construction noise assessment

30. Table A.13 details the predicted worst-case construction phase noise levels at receptor CRR20 for the most exposed façade (including a conservative 5dB(A) allowance for the incorporation of standard mitigation measures).

Table A.13 Construction noise impacts CRR20

Phase	BS5228 Threshold dB(A)	Predicted noise level $L_{Aeq,T}$ dB (Standard mitigation applied)	Impact Magnitude (Standard mitigation only)	Required Enhanced Mitigation (Yes/No) and range dB(A)	Residual Impact
Receptor CRR20					
Daytime	65	58.2	No Impact	No	No Impact with standard mitigation
Evening and Weekends	55	53.1	No Impact	No	No Impact with standard mitigation
Night time	45	53.1	Major adverse Impact	Yes (Noise reduction of 8.1dBA required)	No Impact with enhanced mitigation
Required Mitigation Key					
No additional mitigation required beyond best practice measures (set out in the OCoCP).					
Construction mitigation techniques will be required to avoid significant adverse impact such as those detailed in ES Chapter 25. Specific construction mitigation measures will be agreed during the detailed design stage.					

31. During the daytime, evening and weekend reference periods, trenchless crossing works at MA5a and MA5b represent an impact magnitude of “no impact” at a medium sensitivity receptor, which represents an impact of **negligible** significance. No requirement for further mitigation has been identified.

32. During the night time reference period, the proposed trenchless crossing works at MA5a and MA5b, with the inclusion of best practice mitigation only, result in a major magnitude of effect at a medium sensitivity receptor, which represents an impact of **major adverse** significance. Should night time working be required for this trenchless crossing then enhanced mitigation measures will be required during the night time reference period.

1.2.2.1 Enhanced Mitigation (if night time working required)

33. During the night time period, the predicted noise impact at CRR20 (after the inclusion of standard mitigation) was **major adverse**.

34. In order to ensure these impacts are mitigated as far as reasonably possible, the aforementioned standard mitigation (also detailed in the OCoCP (DCO document 8.1)), coupled with more site specific solutions including the use of screening such as temporary noise barriers and/or temporary spoil bunds, would be applied.
35. As an example of the relative effectiveness of applying a temporary localised noise barrier BS 5228 states:
- *“as a working approximation, if there is a barrier or other topographic feature between the source and the receiving position, assume an approximate attenuation of 5 dB when the top of the plant is just visible to the receiver over the noise barrier, and of 10 dB when the noise screen completely hides the sources from the receiver. High topographical features and specifically designed and positioned noise barriers could provide greater attenuation.”*
36. Standard noise absorptive barriers applied to three sides of the operating plant (3.5m height) were included in the noise model as mitigation. The predicted noise levels, with the application of enhanced mitigation, are detailed in Table A.14.

Table A.14 Construction noise impacts CRR20

Phase	BS5228 Threshold dB(A)	Predicted noise level $L_{Aeq,T}$ dB (Standard mitigation applied + barrier)	Impact Magnitude (Standard mitigation applied + barrier)	Further Enhanced Mitigation Required (Yes/No) and range dB(A)	Residual Impact
Receptor CRR20					
Night time – Combined HDD, temporary works areas 3.5m barrier	45	39.3	No Impact	No	No Impact with enhanced mitigation
Required Mitigation Key					
No additional mitigation required beyond standard CoCP measures to avoid significant adverse impacts.					
Construction mitigation techniques will be required to avoid significant adverse impact such as those detailed in Chapter 25. Specific construction mitigation measures will be agreed during the detailed design stage.					

1.2.2.2 Residual Impacts

37. With the incorporation of enhanced mitigation measures, it is predicted that the magnitude of effect will reduce to “no impact”, which represents a residual impact of **negligible** significance.
38. A Construction Noise (and vibration) Management Plan (CNMP) will be included in the final CoCP, as required under Requirement 20 (2)(e) of the DCO.
39. The CNMP will apply throughout that stage of construction and will detail standard mitigation (best practical means) and where applicable, enhanced mitigation measures.
40. The exact specification of any noise barriers that may be required to mitigate significant residual construction noise will be determined during detailed design. Noise barriers will be introduced with the appropriate specification for the location and noise reduction required.
41. Enhanced mitigation at CRR20 will be captured within an update to the Outline CoCP submitted at Deadline 8 of the examination.

1.3 Potential Vibration Impacts from Trenchless Crossing Works at CRR20

42. Piling may be required, as a worst case, depending on ground conditions to temporarily anchor the drilling rigs associated with trenchless crossings.
43. CCR20 is approximately 105m away from MA5b. In accordance with Table A.7, at a setback distance of 105m any vibration levels attributed to piling would not be perceptible at CCR20.
44. Table A.8 details indicative vibration levels from various piling methods with regards to buildings of differing architectural merit⁴. Table A.9 sets out the vibration level effects. Piling, if required, at a distance of least 105m represents a vibration impact magnitude of “no impact”, on a medium sensitivity receptor, which represents an impact of **negligible** significance.

1.4 Conclusions

45. Construction phasing, plant numbers, type and on-time data were provided for proposed equipment to be used at cable corridor locations MA5a and MA5b during trenchless crossing works.

⁴ CRR20 is not a listed building or located within a Conservation Area.

46. Predicted noise levels for CRR20 were calculated based on proposed trenchless crossing works during the daytime, evening, weekends, and night time periods.
47. The predicted noise levels resulted in impacts of **negligible** significance during the daytime, evening and weekend reference periods, with the inclusion of standard best practice embedded mitigation measures. No requirement for further mitigation has been identified.
48. The predicted noise levels resulted in an impact of **major adverse** significance during the night-time at receptor CRR20, with the inclusion of standard best practice embedded mitigation measures. A requirement for further 'enhanced mitigation' has been identified.
49. Within the inclusion of enhanced mitigation in the form of standard noise absorptive barriers at 3.5m height, the residual impact reduced to **negligible** significance. Enhanced mitigation at CRR20 will be captured within an update to the Outline CoCP submitted at Deadline 8 of the examination.
50. A CNMP will be included in the final CoCP, as required under Requirement 20 (2)(e) of the DCO. The CNMP will apply throughout that stage of construction and will detail standard mitigation (best practical means) and where applicable, enhanced mitigation measures. The exact specification of any noise barriers that may be required to mitigate significant residual construction noise will be determined during detailed design. Noise barriers will be introduced with the appropriate specification for the location and noise reduction required.
51. Piling, if required, at a distance of least 105m represents a vibration impact of **negligible** significance. No requirement for mitigation has been identified.

References

BSI (2014). British Standards Institution [BS] 5228-1:2009+A1:2014 “Code of practice for noise and vibration control on construction and open sites – Part 1: Noise”.

BSI (2014). British Standards Institution [BS] 5228-2: 2009+A1:2014 “Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration”.

Norfolk Vanguard. (2018) Norfolk Vanguard Offshore Wind Farm Chapter 25 Onshore Noise and Vibration Environmental Statement, Volume 1 (Reference: PB4476-005-025).