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# Application by Suffolk County Council for an Order Granting Development Consent for the Lake Lothing Third Crossing (Lowestoft) 

## Development Consent Order 201(...)

## Planning Inspectorate Reference TR010023

Transport/Highways Supporting Evidence on behalf of Northumbrian Water
Limited


## Document Control Sheet

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## 1 Introduction

### 1.1 Introduction and Background

1.1.1 This report has been prepared by Peter Brett Associates ("PBA", now part of Stantec) on behalf of Northumbrian Water Limited ("NWL"). It follows a review of the application by Suffolk County Council ("SCC" - the Applicant) for an order granting development consent for the proposed new bridge crossing over Lake Lothing Lowestoft (Planning Inspectorate Reference TR010023), (Lake Lothing Third Crossing, the "Scheme").
1.1.2 In view of the nature of the Scheme, which is considered to be "nationally significant", the Scheme proposals are the subject of a Development Consent Order (DCO) application to provide the necessary Planning and Compulsory Acquisition powers to construct and maintain the Scheme.
1.1.3 Essex \& Suffolk Water, which is part of NWL ${ }^{1}$, have a call centre located in Trinity House, south of Lake Lothing on land adjacent to the proposed bridge approach road (Riverside Business Park). The location of Riverside Business Park is shown on Figure 1. NWL is the freehold owner of Trinity House and the associated land (registered under Title number SK347381).

Figure 1 - Wider Location Plan


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Essex \& Suffolk Water is the trading name for NWLs operations in the east of England
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1.1.4 Existing access to the properties on Riverside Business Park, including Trinity House, is via Riverside Road and Canning Road, as shown on Figure 2. Riverside Road is within the footprint of the proposed bridge's elevated approach and therefore access will no longer be possible via Riverside Road and a replacement access will be required (further details are provided in Section 3 of this Report).

Figure 2 - Road network around Riverside Business Park

1.1.5 NWL has always been supportive of the principles of the Scheme, which will relieve traffic congestion and assist the development and regeneration of Lowestoft but it is essential to NWL that a series of issues are clarified and resolved in relation to NWL's land interests and operational activities at Trinity House both during the construction and operation of the Scheme.

### 1.2 Development Consent Order - Authorised Development

1.2.1 The proposed development is described in Schedule 1 to the draft DCO (Document 3.1: Draft Development Consent Order). The works of particular interest to NWL are described as Work No. 4 and No. 5 and defined as follows:
"Work No. 4 - as shown on sheet 2 of the works plans and being the construction of new highway comprising carriageway and cycleway to provide access to existing premises including the construction of new private means of access to premises as shown on sheet 2 of the rights of way and access plans.
"Work No. 5 - as shown in sheet 2 of the works plans and comprising:
(a) the construction of new highway comprising carriageway and cycleway to provide access to existing premises including the construction of new private means of access to premises as shown on sheet 2 of the rights of way and access plans; and
(b) the improvement of existing highways, including realignment, to facilitate tie-ins to the existing highway network and Work No. 4 and the construction of new private means of access to premises as shown on sheet 2 of the rights of way and access plans."
1.2.2 The Works Plans do not show the actual proposed alignment of the new road but only show work centrelines and limits of deviation. Works Plans Sheet 2 of 2 is reproduced in Figure 3, and is contained in Appendix A.
1.2.3 The Works Plans provide insufficient detail to allow PBA to assess the proposed Scheme from a highways/transport perspective. In particular, the work centreline does not show the type of carriageway (width, design standard, etc.) for the New Access Road, nor the type of junction form with Waveney Drive. Different specification of carriageway form and junction form are possible within the work limits of deviation, which could result in potentially different highway capacity / safety impacts.
1.2.4 The supporting technical work accompanying the application (including the Transport Assessment) is all based on the General Arrangement Plans which are illustrative only. Of necessity, PBA's review has also been based on the illustrative General Arrangement Plans because there is no other information sufficient to enable an analysis of the transport and traffic impacts arising from the Scheme. However, it is important to note that there is no provision in the draft DCO requiring the Scheme to be built in accordance with those Plans. The illustrative nature of the plans is also acknowledged in the Examining Authority's written questions and request for information (ExQ1: 17 December 2018), in particular question 1.3. PBA endorse this question.

Figure 3 - Works Plans (Sheet 2 of 2)


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### 1.3 Purpose of this Report

1.3.1 PBA has been commissioned by NWL to advise with respect to the possible effects of the Scheme and associated re-routeing of local access roads on the Trinity House operations.
1.3.2 This report relates specifically to transport and highway matters.
1.3.3 PBA has reviewed the DCO application documents and identified a number of potential impacts on the Trinity House operations. The review scope was as follows:

- Review of the potential impacts of the works during construction of the Scheme, particularly on the immediate area around Trinity House;
- Review of the specific operational effects of the final road layouts, again on the immediate area around Trinity House;
- Review of the assessment work associated with the proposed new priority T junction on the B1531 Waveney Drive;
- Review of proposed changes to on-street car parking on the surrounding roads immediately adjacent to Trinity House; and
- A review of any other material that is considered relevant to the Trinity House operational activities.
1.3.4 Bryan Cave Leighton Paisner LLP on behalf of NWL submitted relevant representations to the application setting out a summary of initial comments and concerns with the Scheme on the operation of Trinity House on $21^{\text {st }}$ September 2018. These representations identified a number of transport and highways concerns.
1.3.5 The Applicant has provided an initial response to the representations in Document SCC/LLTC/EX/2: Response to Relevant Representations of $20^{\text {th }}$ November 2018 which are addressed in this report.
1.3.6 It is understood that the Applicant has agreed to submission of updated assessments which will be issued on January $8^{\text {th }}$ 2019. It is acknowledged that these updated assessments may to deal with the issues raised in this report.
1.3.7 The Examining Authority issued the examination timetable on 17 December 2018 including the first set of written questions in respect of the DCO application.


### 1.4 Structure of this Report

1.4.1 The structure of this report is as follows:

- a summary of NWL's operations at the Trinity House with particular reference to operational arrangements and access;
- a summary of the Scheme proposals, particularly in terms of the highway design layout and on-street car parking alterations;
- the aspects of the Scheme that have the potential to affect Trinity House operations, with reference to the construction phase, general highway design arrangements, operational phase, and on-street car parking; and
- summary and conclusions.

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## 2 NWL Trinity House Call Centre

### 2.1 Introduction

2.1.1 This section provides a summary of the existing operations at Trinity House, and access arrangements.
2.1.2 This provides a context for the review of the DCO application documents, and how the Scheme might affect the important operations and access at Trinity House.

### 2.2 Call Centre Operations

## Operating Times and Employee Numbers

2.2.1 Trinity House is a strategic operational site comprising a purpose-built customer call centre for both the Northumbrian, Essex \& Suffolk operating regions of NWL.
2.2.2 The call centre operates between 7:30am and 8:00pm Monday to Friday, and 8:00am to 5:00pm Saturdays. Currently there are over 240 employees based at the call centre working in shift systems in a building with capacity for up to 263 employees (i.e. the building is currently operating close to maximum capacity). This comprises a mixture of full-and part-time as well as temporary personnel.
2.2.3 In addition to the existing facility, NWL has longer-term plans for expansion of these facilities which will which will increase the number of staff employed at the call centre. NWL has confirmed that the Trinity House site was selected because of, amongst other factors, the important opportunity that it provided for future expansion and that this remains NWLs intention.

## Car Parking

2.2.4 The need for shift working and continuous operation of services, as well as a policy that encourages and supports flexi-time workers, requires access to significant car parking. NWL has two on-site car parks with 106 spaces in total (including 8 disabled spaces and 3 spaces reserved for visitors). The location of the car parks is shown in Figure 4.

Figure 4 - Trinity House location and two associated car parks


Source: Google Earth Pro
2.2.5 These car parking spaces are fully utilised. The operation of the call centre means there is necessarily an overlap between staff starting and finishing work between shifts, to ensure continuity of service to NWLs customers. This places a higher than normal demand for parking spaces for employees at the call centre. Even with the existing car parking provision, NWL staff currently has to rely on the on-street parking on Canning Road in addition to the two on site car parks.
2.2.6 NWL already has an active Green Travel Plan in place, which has resulted in the provision of extra covered and secure cycle storage facilities outside the front of the call centre.

## Mode Share

2.2.7 As part of the Green Travel Plan, a staff survey was undertaken in June 2017 to understand transport mode shares to the call centre for staff trips.
2.2.8 A total of 194 staff responded to the staff survey showing the following results:

- Walk 6\%
- Cycle 8\%
- Car Driver $86 \%$
2.2.9 A further interim staff survey was undertaken in November 2018 showing the following results:
- Walk $5 \%$
- Cycle 5\%
- Car Driver 90\%
2.2.10 From Summer to Winter months, the survey shows that the number of staff walking and cycling reduces marginally, which is to be as expected in the less clement winter weather conditions. This equates to an extra 8 vehicles in Winter months.


### 2.3 Call Centre Access

2.3.1 Trinity House is located immediately north of Waveney Drive, approximately 60 m west of the junction with Riverside Road.
2.3.2 Currently, vehicular access to the call centre is from Waveney Drive, via Riverside Road and Canning Road. This route is the only means of vehicular access. The route also serves other office premises within Riverside Business Park namely:

- Suffolk County Council;
- Waveney District Council;
- Registrar's Office;
- Riverside Business Centre;
- Lings Motor Group showroom;
- Nexen Lift Trucks; and
- Riverside Children and Families' Centre.
2.3.3 Pedestrians and cyclists can access the call centre via two points:
- Via the same route as vehicles on Riverside Road and Canning Road. Riverside Road has an off-road segregated footway / cycleway on the western side, and there are footways on either side of Canning Road; and
- Via direct frontage access from Waveney Drive to Trinity House.
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## 3 Scheme Proposals

### 3.1 Introduction

3.1.1 This section sets out key aspects of the proposed Scheme in terms of the design and layout, and how it relates to Trinity House.
3.1.2 The proposed Scheme involves the construction, operation and maintenance of a new third highway crossing of Lake Lothing. This bridge will be a bascule bridge - an opening bridge with a counterweight that balances the span as it opens, linking the areas to the north and south of Lake Lothing in Lowestoft.
3.1.3 The objectives of the Scheme are to, inter alia, reduce congestion and delay on the existing bridges over Lake Lothing; improve accessibility; reduce community severance; reduce the risk of collisions; encourage more sustainable forms of travel; open up opportunities for regeneration and development; and provide the capacity needed to accommodate planned growth.

### 3.2 Highway Layout Proposals

3.2.1 As discussed above, the draft DCO and Work Plans provide limited detail on the actual alignment of junctions proposed in the new road layout. The General Arrangement Plan (Sheet 2 of 2 ) provides drawings that are illustrative only and show that proposed highway layout on the southern side as reproduced in Figure 5 below (and contained in Appendix B to this Report).

Figure 5 - General Arrangement Plan (Sheet 2 of 2)

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3.2.2 It is proposed to construct a new roundabout at the existing signalised junction of Waveney Drive and Riverside Road on the south side of the lake to connect the proposed bridge and road link to the existing road network. It is proposed to close Durban Road at its junction with Waveney Drive. Access to and from Durban Road from Waveney Drive at this location would continue for cyclists and pedestrians.
3.2.3 The existing single carriageway between the new roundabout and Tom Crisp Way would be widened to become a dual carriageway with a central reserve.
3.2.4 To achieve the necessary height tolerance of Lake Lothing, the new crossing link road will ascend fairly sharply from the current Riverside Road / Waveney Drive junction. This level difference would sever the existing access to Riverside Business Park via Canning Road, and the existing junction with Canning Road will be closed.
3.2.5 As shown on Figure 5, a new access road from Waveney Drive, west of Riverside Road, is proposed, to provide a new access to the Business Park. The new road would cross the former Jeld Wen wood yard land which is currently mainly derelict and not in use, albeit that it is allocated for a significant quantum of housing and employment development in the Waveney Local Plan.
3.2.6 The new junction on Waveney Drive and access road would connect to the retained section of Riverside Road by the northern entrance to Waveney District Council offices. Pedestrian and cycle facilities would be provided on this new section of road.
3.2.7 This proposed junction is illustratively shown as a ghost-island right turn priority junction with Waveney Drive.
3.2.8 Whilst the Scheme has no direct impact on Trinity House's two formal car parks, and would not physically affect the ability to expand Trinity House, Trinity House employees' journeys to work by car would be affected by the replacement access road. Pedestrian access from Waveney Drive would be largely unaffected, but would be affected from Riverside Road.

### 3.3 On-Street Car Parking Alterations

## Existing Situation

3.3.1 The existing on-street car parking arrangements at Riverside Business Park are detailed in section 3.16 of the Transport Assessment June 2018 (Document Reference 7.2) prepared by WSP. Key aspects of the on-street car parking from this Transport Assessment are summarised below for the purposes of this Report.
3.3.2 There are double yellow lines on the southern end of Riverside Road starting from the junction with Waveney Drive and ending at the junction with Canning Road - on the southern side the double yellow lines stop approximately 10 metres to the south of the junction with Canning Road, and on the northern side they continue for another 10 metres after the junction.
3.3.3 Starting from the A12 roundabout with Tom Crisp Way and moving west, there are double yellow lines on either side of Waveney Drive. These lines end approximately 10 metres to the west of the signalled junction with Riverside Road. There are no parking restrictions on Waveney Drive further to the west.
3.3.4 Only sections of Canning Road have parking restrictions, while on-street parking for around 20 vehicles can be accommodated. PBA has confirmed with Suffolk County Council that Riverside Road is adopted by the Council, whilst Canning Road is not.
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3.3.5 Paragraph 3.16.7 of the Transport Assessment acknowledges that demand for off-road parking at Riverside Business Park is greater than supply which results in daily 'overspill' with vehicles parking on Riverside Road and Canning Road. This is shown on the image in Figure 4 of this report (Google Earth Pro image) and is not currently an offence.
3.3.6 Parking surveys were undertaken by WSP in May 2018 and recorded an average number of vehicles parked on-street as 59 vehicles (with a peak at 77 vehicles).

## Proposed Situation

3.3.7 The Traffic Regulations Measures Plan (Sheet 2 of 3) of the proposed highway layout on the southern side is reproduced below in Figure 6 (and contained in Appendix $C$ to this Report).

Figure 6 - Traffic Regulations Measure Plan (Sheet 2 of 3 )

3.3.8 The proposed Scheme will have an adverse impact on on-street car parking arrangements at Riverside Business Park. Section 4.6 of the Transport Assessment June 2018 (Document Reference 7.2) details the proposed parking arrangements. Key aspects from this Transport Assessment are summarised below.
3.3.9 The implementation of the Scheme will result in the loss of around 290 m ( 48 vehicles) of existing kerbside parking space along Riverside Road and Canning Road.
3.3.10 Further, the whole of Canning Road will be subject to parking restrictions, with no on-street parking available except for a short section of proposed parking opposite the Registrar's Office (highlighted in green on the Traffic Regulations Measure Plan - Figure 5 above). However, this short section of on-road parking will have a 2 hour parking limit. The Transport Assessment does not state how this will be enforced, particularly since Canning Road is currently unadopted. There is no formal proposal to adopt Canning Road in the draft Development Consent Order.
3.3.11 The Transport Assessment provides no specific reasons as to why Canning Road will be subject to parking restrictions along its entire length. Paragraph 4.6 .2 simply states that "improved connectivity for pedestrians and cyclists as a result of the Scheme will encourage a shift away from private cars to more sustainable modes of transport. The existing levels of car parking demand along Riverside Road are therefore expected to reduce as a result of the Scheme".
3.3.12 Paragraph 4.6.3 states "displacement of parking as a result of the Scheme is expected to be limited, however, given the residential nature of the area immediately to the south of the Scheme it is expected any overspill parking from car parks would occur on-street. It is expected that there will be limited detrimental impacts caused by displacement parking as a result of the Scheme. Monitoring of the occurrence of displaced parking is undertaken by SCC through employee surveys related to the Travel Plans of the businesses (where applicable) located in the employment areas, and through parking surveys."
3.3.13 This amendment to the existing on-street car parking regime will have a direct impact on the Trinity House operation, and no mitigation is proposed.

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## 4 Identified Issues with the Scheme

### 4.1 Introduction

4.1.1 PBA has reviewed the DCO application documents and the Applicant's 'Response to Relevant Representations' (Document SCC/LLTC/EX/2).
4.1.2 PBA has highlighted a number of issues where further information and clarity is required. This relates to both to general matters associated with the Scheme overall as well as more sitesspecific matters that will directly adversely affect NWL's operation of its call centre.
4.1.3 The issues that have been identified relate to the following:

- Construction phase;
- General highway design arrangements;
- Operational phase (final state); and
- On-street car parking.
4.1.4 This Chapter is structured in the order of each Issue Number, as referenced in the Response to Relevant Representations report prepared by the Applicant. Each Issue Number summarises the following for completeness:
- NWL Representation (prepared by Bryan Cave Leighton Paisner LLP) submitted on September $21^{\text {st }} 2018$;
- Applicant's initial response to the representations on November $20^{\text {th }} 2018$ contained within Document SCC/LLTC/EX/2: Response to Relevant Representations; and
- PBA's further review and comments on the Applicant's response.
4.1.5 Where relevant, representations made by other third parties have been included along with the Applicant's initial response, and PBA's interpretation.
4.1.6 It is understood that the Applicant has agreed to submission of updated assessments which will be issued on January $8^{\text {th }} 2019$. These updated assessments may seek to deal with the issues discussed in this report.


### 4.2 Issue Number DCO15 - Consultation on Parking Requirements

## NWL Representations

Although local residents were consulted on the proposed on street parking regulations on Durban Road, Kimberley Road, Notley Road and Kirkley Run, there does not appear to be any reference of consultation with local businesses in Riverside Business Park in terms of the proposed on street parking restrictions on Canning Road and Riverside Road.

## Applicant's Response

The Preliminary Transport Assessment (an Appendix to the Preliminary Environmental Information Report) set out at paragraph 4.5.1, having first explained the current parking situation in Riverside Road, that proposals to amend parking would be set out in the Transport Assessment (as they are at section 4.6 in document reference 7.2 / PINS document reference APP-093). Bespoke consultation was undertaken with local residents when it became apparent that an area outside of the Order limits may be affected by Traffic Regulation Measures (TRMs) included in the dDCO. The Applicant welcomes feedback on the dDCO including TRMs, and notes NWL's concerns over the removal of on street parking in this area. The Applicant can confirm this is under review and will update the Examining Authority in due course.

## PBA's Further Review

4.2.1 The Applicant's response is acknowledged. However, the current needs of the businesses at Riverside Business Park should have been fully understood when preparing these proposals, including NWL's operational requirements.
4.2.2 It is noted that the Applicant is reviewing the proposed Traffic Regulation Measures and will provide an update in due course. NWL is hopeful that amendments will be proposed to ensure that no on-street parking is lost as a result of the Scheme.
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### 4.3 Issue Number LD4 - Location and Design of the New Access Road

## Statuslist Limited Representation

Statuslist is concerned that the Council has failed to demonstrate that the use of the Land is in fact required for the New Access Road. There is no evidence that the Council has considered alternative options that would not impact on the Land or, if such options have been considered, the reasons why they have been rejected. The position of the New Access Road as shown in the Design Report (page 107) of the documents accompanying the DCO is not considered optimal.

The New Access Road will bisect the Land and will impact on the current and future use of the Land by Statuslist. In particular, Statuslist is concerned that the position of the proposed New Access Road will materially reduce the density of development capable of being achieved on the Land on a permanent basis.

The industrial and commercial use of land located to the west of the Land requires access for a car transporter (amongst other things). However, this will have a negative effect on the Land, as it significantly increases the road geometry requirements, over and above what would normally be required for emergency or servicing vehicles. This is not only "land hungry", requiring a greater area of land to be acquired from Statuslist by the Council, diminishing the level of development quantum capable of being achieved on the Land, but also impacts on the character of the road design and the types of frontage development likely to be achieved. Both of these factors are detrimental to the future use and development of the Land.

Statuslist has submitted previous design and location options for the New Access Road to the Council for consideration, which it considers would be optimal, balancing the provision of suitable access for the purposes of the Scheme whilst minimising the negative impact on the use of the Land. Unfortunately, the alternative design proposals submitted have not been accepted by the Council. As a result, Statuslist continues to have serious concerns as to the permanent impact of the New Access Road on the use of the Land.

It is considered that the route proposed for the New Access Road by the Council will inhibit the future use of the Land and will negatively impact on the design and density of development capable of being undertaken on the Land. The end result is that the location and design of the New Access Road is not optimum and should be reconsidered as part of the DCO process, with the alternative routes proposed by Statuslist evaluated and adopted by the Council as part of the Scheme.

## Applicant's Response

Alternatives to the New Access Road were presented in the PEIR and are also included in the Environmental Statement - please refer to 3.7.18 to 3.7.23 therein.

The Applicant considers the New Access Road to be fully compliant with local policy and thus the nature and scale of the road that is being proposed for the Scheme would be comparable to that which the landowner would otherwise need to provide themselves.

The Applicant notes that SCC/WDC has agreed in its SoCG that the design of the New Access Road "is appropriate having regard to the nature and scale of development that it is envisaged to serve" and further that "the New Access Road is located in such a way to facilitate the regeneration of the former Jeld- Wen site, as envisaged in WDC's Sustainable Urban Neighbourhood and Kirkley Waterfront Development Brief (2013).
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The Applicant has been in discussions with Statuslist for some time and took due consideration to the alternative positions of the New Access Road, having regard to Statuslist's development proposals. Indeed following representations from the landowner, the Applicant decided to undertake additional targeted S42 consultation in order to provide flexibility for the proposed Access Road to move further eastwards to accommodate a more easterly alignment of this road (as documented in Table 29 of the Consultation Report). It is understood that Statuslist would prefer a more easterly alignment still, but it has been explained to Statuslist that should this be the case, the visibility splays required for such an alignment would then encroach on neighbouring third party land.

The Applicant does not consider it a proportionate use of compulsory acquisition powers to interfere with these rights. The Applicant does not envisage that a car transporter would be using the New Access Road. It should be noted that access to Lings' premises would be from Waveney Drive. The Applicant has provided for a New Access Road to the specification required to mitigate the loss of access to Riverside Business Park, and without knowledge of the internal layout for Statuslist's development proposals as there is no agreed masterplan/planning application/ permission for the site and in consequence the requirements of the future development remain unclear. That said the Applicant is in discussion with Statuslist over the design of the New Access Road and it may be possible to revise the road geometry to take account of Statuslist's concerns, and still meet the requisite highway design/safety standards.

## PBA's Review

4.3.1 It is noted that Statuslist has concerns regarding the impact of the New Access Road alignment through their site, bisecting the land and sterilising areas for future development.
4.3.2 PBA would agree with the Applicant that a suggested more easterly aligned New Access Road would adversely affect visibility splays from the access road, encroaching on neighbouring third party land. However, this would only be the case in relation to a proposed priority T junction form on Waveney Drive, as shown on the illustrative General Arrangement Plan. This is likely not to be the case should an alternative junction form be considered, such as a signalised T junction. This is considered further in Issue Number HT6.
4.3.3 It is noted that the Applicant states that they are in "discussion with Statuslist over the design of the New Access Road and it may be possible to revise the road geometry to take account of Statuslist's concerns, and still meet the requisite highway design/safety standards". If such a revised alignment is proposed, it is unclear how this would affect the findings of the Environmental Statement, and Transport Assessment technical work or the proposed order limits contained within the draft Development Consent Order.

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### 4.4 Issue Number LD28 - Maintaining access to Trinity House and Canning Road (during construction)

## NWL Representations

Although the proposed construction phases (as set out in Section 5 of the Environmental Statement) indicate that construction of the Waveney Drive junction and new access road to allow access to the Riverside Business Park will be the first phase, there is a lack of clarity as to how this will be secured, and that access to Riverside Business Park (and Trinity House) will be maintained at all times.

In relation to the eastern end of Canning Road, the DCO (in Schedule 4) does not expressly acknowledge that this junction will cease to operate, nor the timing for when this would occur.

## Applicant's Response

The Applicant intends to ensure appropriate steps are taken to manage any disruption caused during the construction of the Scheme, including the improvements to the related highway network. Paragraph 2.8.3 of the Interim Code of Construction Practice (document reference 6.3 Appendix 5A to the ES/ PINS document reference APP-163) requires the Contractor as part of the full Code of Construction Practice (CoCP) to set out the traffic management measures that will be applied during the course of the construction phase. This is secured by requirement 4 of the dDCO ) which requires the CoCP to be approved before the commencement of the Scheme, for the CoCP to be in accordance with the Interim Code of Construction Practice and for the authorised development to be carried out in accordance with the approved CoCP.

The improvements proposed include the closure of the existing junction between Riverside Road and Canning Road and an alternative route to access Trinity House will be provided from Waveney Drive via the New Access Road (reference $C$ as shown on sheet 2 of the Rights of Way and Access Plans document reference 2.5 / PINS reference APP-027), part of the existing Riverside Road to be improved and an unclassified road (reference D as shown on sheet 2 of the Rights of Way and Access Plans document reference 2.5/ PINS reference APP-027).

## PBA's Further Review

4.4.1 The works should maintain access at all times to Canning Road, and no closure would be acceptable until the proposed new link road is open for all traffic. Whilst the Applicant states that it "intends to ensure appropriate steps are taken to manage disruption", there is currently no requirement in the draft DCO or Interim CoCP to ensure that access to Trinity House is maintained at all times. Appropriate provisions must be secured through the DCO to ensure that this is achieved.
4.4.2 The Interim Code of Construction Practice has insufficient detail to be satisfied that Trinity House would not be adversely affected by the construction of the bridge and associated infrastructure.

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### 4.5 Issue Number HT4 - Waveney Drive increase in traffic

## NWL Representations

The technical assessment work concludes that there will be a doubling of traffic on Waveney Drive due to the Scheme, and as a result, will experience a substantial disbenefit with significant adverse effects on fear and intimidation and severance for pedestrians. No mitigation has been recommended as a result of the conclusion. Further mitigation measures to address this significant adverse effect to pedestrians should be considered.

## Applicant's Response

The forecast traffic flows show that traffic levels will increase significantly on Waveney Drive as this provides the principal access to the Scheme.

The predicted flows for the sections of Waveney Drive between Victoria Drive in the west and A12 in the east and are presented in Tables A-1, A-2 and A-3 in Appendix A.

While flows are predicted to increase on Waveney Drive, this is offset by the significant reduction in traffic on the existing routes to both existing crossings and a reduction in journey times on the key route corridors through the town, during all time periods and this will have benefits for reducing severance for pedestrian and cycle journeys.

The Applicant also notes that both the General Arrangement drawings and the Design Guidance Manual provide for a formal crossing of Waveney Drive to be provided just west of the new Southern Roundabout as mitigation for severance. These documents are secured through dDCO Requirement 3. There will therefore not be severance for pedestrians.

## PBA's Further Review

4.5.1 The technical assessment work concludes that there will be almost a doubling of traffic on Waveney Drive due to the Scheme from the 2022 Do Minimum scenario (without the bridge), and 2022 Do Something scenario (with the bridge), directly in front of Trinity House - as set out below:

- Future year of 2022 - increase in AADT from 8,180 to 14,267 ( $74 \%$ increase)
- Future year of 2037 - increase in AADT from 9,743 to 18,100 ( $86 \%$ increase)

AADT - Annual Average Daily Traffic
(source - Table 19-14 of the Environmental Statement)
4.5.2 As a result, as stated in the Environmental Statement, Waveney Drive will experience a substantial disbenefit with significant adverse effects on fear and intimidation and severance for pedestrians.
4.5.3 The proposed new crossing on the immediate exit of the new roundabout with Riverside Road as shown on the General Arrangement Plan is welcomed. However, the General Arrangement Plans are for illustrative purposes only and none of the features identified in them are secured through the draft DCO.
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4.5.4 Further mitigation measures to address this significant adverse effect to pedestrians and cyclists should be provided along the entire length of Waveney Drive. In particular, a controlled crossing point close to the New Access Road junction with Waveney Drive, 330m to the west of the proposed new crossing point should be provided. This is the only vehicular access point to the Riverside Business Park. This will assist pedestrians and cyclists arriving from the west, and south from the residential areas around Kimberley Road, Waveney Crescent, Notley Road by providing a crossing facility along this key desire line. This is also acknowledged in the Examining Authority's written questions and request for information (ExQ1: 17 December 2018), in particular question 2.7. PBA endorse this question.
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### 4.6 Issue Number HT5 - Waveney Drive link capacity

## NWL Representations

Although junction capacity assessments have been undertaken in relation to junctions on Waveney Drive, no assessment has been made regarding the link capacity of Waveney Drive and Victoria Road to determine whether the existing road corridor can accommodate this forecast increase in traffic as a result of the Scheme. A link capacity assessment should be undertaken.

## Applicant's Response

Junction capacity assessments have been undertaken for key junctions along Waveney Drive and are reported within the Transport Assessment.

In urban environments where links are typically shorter in length, junction capacity is the key constraint on traffic, rather than link capacity. The strategic model used for the scheme forecasts utilises link based speed / flow capacity constraints for links which are greater than 1 km in length. This is consistent with DfT WebTAG guidance and the methodology which has been undertaken for the Highways England Regional Traffic Models.

Figure B-1 in Appendix B shows the length of links in metres focusing on Waveney Drive and Victoria Road. This shows all links in the model are below 1km, and therefore junction capacity is deemed to be the main constraint on capacity for these links. It is therefore considered that assessing capacity along Victoria Road and Waveney Drive through the junction assessments is the correct approach.

The assessment of volume capacity ratios for the junctions along Victoria Road and Waveney Drive as presented in Section 9.3 of the TA (document reference 7.2 / PINS document reference APP-093) demonstrated that Victoria Road and Waveney Drive would operate within capacity in the 2037 forecast year.

Design Manual for Roads and Bridges (DMRB), Volume 5, Part 3, TA 79/99 provides detail on the traffic capacity of urban roads. Waveney Drive is deemed to be an "Urban All purpose road type 3" (UAP3) shown in Table 1 of TA 79/99. Table 2 of TA 79/99 states that for a UAP3, two-lane carriageway with a 7.3 m width, the busiest direction flow should not exceed 1,300 vehicles in one direction. The strategic modelling shows on Waveney Drive to the west of the central crossing the busiest direction flow reaches around 940 pcus in the AM peak hour, and 1,080 pcus in the PM peak hour, therefore the increase in traffic flow projected along Waveney Drive is within the design standard guidance outlined in DMRB.

## PBA's Further Review

4.6.1 It is acknowledged that junction capacity assessments should be the principal assessment in urban areas. However, given the significant forecast increase in traffic on Waveney Drive, it is considered that link capacity assessments should also supplement the assessment work.
4.6.2 It is noted the Applicant has undertaken a link capacity assessment in their Response, making reference to DMRB TA 79/99, and demonstrated that the predicted doubling of traffic flow on Waveney Drive is within the design standard guidance for this type of road. It is worth noting that this assessment demonstrates that $83 \%(1,080 / 1,300$ vehicles) of the link capacity is taken up. The two-way traffic flow in 2037 (at 1,563 pcus in Table 19-8 of the Environmental Statement) on Waveney Drive equates to an average of 1 vehicle every 2 seconds. This then directly affects the ability of NWL employees to exit the New Access Road and finding safe gaps in the traffic to exit. This is considered further in Issue Number HT6.
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### 4.7 Issue Number HT6 - New Access Road / Waveney Drive Priority Ghost Island Junction

## NWL Representations

The junction capacity assessments for the future year of 2037 only appear to include existing Riverside Business Park traffic level quantums. The assessment does not include likely future forecast traffic flows on the New Access Road associated with the Kirkley Waterfront and Sustainable Urban Neighbourhood (Policy WLP2.4 of the Waveney Local Plan Final Draft Plan March 2018), and future additional development at the existing Riverside Business Park. As a result, the proposed priority ghost island junction may not be appropriate to accommodate the future demand in this area (i.e. not future-proofed for the allocation).

It is recommended that the future capacity and proposed junction form/layout should be reconsidered, and should be capable of accommodating the expected and future traffic flow without excessive delay to traffic on the New Access Road (this is also raised in the Stage 1 Road Safety Audit report Problem 1 and Designers' Response). This should be considered from the outset since it could affect the proposed road alignment of the New Access Road and the form of the junction which will be fixed as part of the DCO.

## Applicant's Response

The strategic modelling has assumed 1,440 dwellings at Kirkley Waterfront by 2037, 730 dwellings by 2022. Appendix C details the assumptions in terms of the model zones which the 1,440 dwellings have been allocated zones in the strategic model and their relative zone loading location.

The 730 dwellings in 2022 have been proportionally split between the accesses in the same way as the 1,440 dwellings in 2037. Therefore, the majority of trips associated with the development load onto the western end of Waveney Drive or Victoria Road. There is a residual of 157 dwellings which were modelled as using the access between Waveney Crescent and Kimberley Road (Zone 589) to account for the extent of the Kirkley Waterfront masterplan area.

The traffic using the New Access Road is based upon TEMPRO growth for car trips and NTM growth applied to the LGV / HGV trips, therefore this does take some account of future traffic growth at Riverside Business Park since TEMPRO is based on projected traffic growth across Waveney District.

In terms of the traffic demand to/from Riverside Business Park. This is combined along with traffic to/from Lings car showroom in the 2016 base year and Do Minimum (without scheme model runs). With the Scheme in place, this traffic demand is then split between two zones:

Zone 910 representing Riverside Business Park traffic which uses the New Access Road
Zone 773 representing Lings car showroom which has a left in / left out access between the Scheme and A12 Tom Crisp Way roundabout

Table D-2 in Appendix D summarises the split of traffic demand between Lings and Riverside Business Park in the 2022 and 2037 Do Something (With Scheme) model runs.

The Applicant notes that SCC/WDC has agreed in its SoCG that the design of the New Access Road "is appropriate having regard to the nature and scale of development that it is envisaged to serve"
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Notwithstanding that the Applicant remains of the view that the New Access Road adequately fulfils its principle function (that being to reprovide appropriate access to Riverside Business Park) the Applicant is undertaking a sensitivity test to assess the capacity of the proposed junction of the New Access Road and Waveney Drive, with updated assumptions regarding development in this area having regard to the progression of developments in the locality.

## PBA's Further Review

4.7.1 It is welcomed that the Applicant is undertaking a "sensitivity test" to assess the capacity of the proposed junction of the New Access Road and Waveney Drive, with updated assumptions regarding development in this area. However, this remains a key concern to NWL and one that should have been considered before now.
4.7.2 The proposed new access road junction with Waveney Drive will be a ghost island right turn lane priority T junction. This junction will serve all the existing employment sites at Riverside Business Park (including Trinity House), and any future expansion at the Business Park since this will be the only point of vehicular access. The new junction is also intended to accommodate future growth at the Brooke Peninsula Jeld Wen development site (further details provided below). This new priority junction would have less capacity to accommodate traffic flows than the current signalised crossroads which is being replaced.

## Observed Traffic Count Data

4.7.3 PBA has interrogated The Traffic Data Collection Report contained within Appendix D of the Transport Assessment, since this summarises the surveyed traffic counts on Riverside Road on Wednesday $5^{\text {th }}$ July 2017 (this recorded all traffic flows in and out of the Business Park during the AM and PM peak hours, including the Lings motor showroom).
4.7.4 It appears Riverside Road was only surveyed on Wednesday $5^{\text {th }}$ July 2017 as part of a Manual Classified Count (MCC) of the signalised crossroads. No two-week Automatic Traffic Count (ATC) was undertaken on Riverside Road capturing 24 hour flows, over a longer period to provide a fuller understanding of existing trip generation to/from Riverside Business Park. To monitor traffic movements over a single day is unusual in our experience and not a robust basis on which to carry out a traffic capacity assessment. The one-day survey only provides a snapshot, and trip generation could be much greater on other week days and months. From the survey information provided, it is difficult to understand whether the traffic flows represents a 'normal' operation of the Business Park. Furthermore, July is not a 'neutral' month for surveying traffic conditions, and is close to the school summer holiday period.
4.7.5 As a result, and to provide a comparison, NWL commissioned Intelligent Data to undertake a two-week ATC on Riverside Road between $4^{\text {th }}-19^{\text {th }}$ December 2018. The ATC was installed just north of the signalised junction, capturing all Business Park traffic entering and leaving (including the Lings motor showroom). The results are included in Appendix D of this report.
4.7.6 The table below provides a summary comparison of the recorded traffic flows for the DCO application, and the two-week ATC results.

Table 1 - Summary of observed traffic flows entering/exiting Riverside Business Park

| Survey Period Riverside Road (vehicles) | AM Peak Hour (8-9) <br> (2-way flow in/out) | PM Peak Hour (17-18) <br> (2-way flow in/out) |
| :---: | :---: | :---: |
| $5^{\text {th }}$ July 2017 <br> (1-day count) | 294 | 205 |
| December 2018 (2-week count) - Highest one-day $^{2}$ $-85^{\text {th }}$ percentile over 2-weeks ${ }^{1}$ - Average over 2-weeks ${ }^{1}$ | $\begin{gathered} 342 \text { (+16\%, } 48 \text { vehs) } \\ 327 \text { (+11\%, } 33 \text { vehs) } \\ 315 \text { (+7\%, } 21 \text { vehs) } \end{gathered}$ | $\begin{aligned} & 289 \text { (+41\%, } 84 \text { vehs) } \\ & 259 \text { (+26\%, } 54 \text { vehs) } \\ & 233 \text { (+14\%, } 28 \text { vehs) } \end{aligned}$ |
| excludes weekends |  |  |

4.7.7 In summary:

- In both peaks and all scenarios (highest recorded one-day, $85^{\text {th }}$ percentile, and average), the December traffic flows are higher than the July traffic flows.
- The highest recorded one-day has $16 \%$ more traffic in the AM peak, and $41 \%$ more traffic in the PM peak - which is significantly higher than the counts relied upon in the application documents.
4.7.8 PBA are concerned that the current trip generation from the Riverside Business Park appears to be an underestimate, and that traffic into and out of the Business Park is in fact be much higher.

Junction Capacity Assessment Results
4.7.9 Section 8.23 of the Transport Assessment sets out the junction capacity assessment results for the proposed junction in 2022 and 2037. The highest Ratio of Flow to Capacity (RFC) reported is 0.28 on the new access road and is shown to operate well within capacity during the peak hours (an RFC of 0.85 is taken as the operation capacity of a junction).
4.7.10 The observed $5^{\text {th }}$ July 2017 traffic count data has been compared with the future traffic flows taken from the 2022 and 2037 PICADY junction capacity model outputs contained within Appendix I (Junction Modelling Outputs) of the Transport Assessment. A summary of the twoway traffic flows entering/exiting Riverside Business Park are summarised in Table 2.
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Table 2 - Summary of traffic flows entering/exiting Riverside Business Park (observed and future 2022 and 2037)

| Scenario | Traffic Flows (2-way) |  |
| :---: | :---: | :---: |
|  | AM Peak Hour | PM Peak Hour |
| Observed $5^{\text {th }}$ July 2017 <br> (Riverside Road) | 294 | 205 |
| 2022 Do Something (New Access Road) | $282$ <br> (-12 below observed) | $183$ <br> (-22 below observed) |
| 2037 Do Something (New Access Road) | $326$ <br> (+32 above observed) | $\begin{gathered} 211 \\ (+6 \text { above observed }) \end{gathered}$ |

4.7.11 With reference to Table 2, the junction capacity assessments for the future years of 2022 and 2037 only appear to include existing Riverside Business Park traffic level quanta (which in any event appears to be an underestimate). There are no reasons given as to why the future year of 2022 has modelled slightly less traffic flows than observed, or why the future year of 2037 has only marginally higher traffic flows than observed in 2017.

## Future Growth

4.7.12 Furthermore, the junction capacity assessments do not appear to include (as intended) likely future forecast traffic flows (growth) on the New Access Road associated with:

- the Kirkley Waterfront and Sustainable Urban Neighbourhood site (Policy WLP2.4 of the Waveney Local Plan Final Draft Plan March 2018); and
- any future additional development at the existing Riverside Business Park either on current vacant plots, or expansions of existing units.
4.7.13 The Kirkley Waterfront and Sustainable Urban Neighbourhood site is a mixed-use development including 1,380 residential dwellings, primary school, local centre, marina facilities, and 7.5 hectares of employment. The employment related development is proposed to be focused on the former Jeld Wen factory site. An extract (Figure 8) from the Waveney Local Plan of the sustainable urban neighbourhood site is provided below.
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Figure 7 - Kirkley Waterfront and Sustainable Urban Neighbourhood site


Source: Figure 8 of the Waveney District Council Final Draft Local Plan March 2018
4.7.14 The Local Plan states that the Jeld Wen factory site remains underutilised and a long lease on the site means it may not be available for redevelopment until the early 2020. Therefore, there is currently no live planning application for the Jeld Wen site, but it is allocated for employment use.
4.7.15 The Applicant's response states that they have modelled and included 1,440 residential dwellings (marginally higher than the allocation number). Appendix C of the response has a plan showing where these dwellings are loaded onto Waveney Drive. None of the dwellings are loaded off the New Access Road, but all directly off Waveney Drive as new junctions to the west. It has not been anticipated that any vehicles of the Jeld Wen vehicles will enter or exit the site along the New Access Road.
4.7.16 Furthermore, there is no reference in the Applicant's response to the modelling/loading of the 7.5 hectares of employment allocation (which could be 30,000sqm of B1, B2, B8). The Policy states that the employment-related development of the Kirkley Waterfront allocation should be focused on the former Jeld Wen factory site, and therefore around the New Access Road and junction to Waveney Drive. The Works Plans include limits of deviation that appear to allow for the creation of a link road from the Jeld Wen site onto the New Access Road (note that while the General Arrangement Plans show a curved New Access Road, the Works Plans include limits of deviation with a right angle adjacent to the Jeld Wen site, capable of accommodating a new link road into that site). The Applicant should confirm whether the employment element of the allocation has been included/modelled. If not, then the assessment of the junction capacity will be flawed.
4.7.17 The proposed priority ghost island junction may not be appropriate to accommodate the existing and future demand in this area (i.e. not future-proofed for the allocated neighbourhood site, and no resilience testing of the proposed junction form has been submitted). In any event, it is not clear from the application drawings or the draft DCO what type of junction will be provided - it could be any junction form within the limits of deviation shown on the Works Plans which may give rise to different transport impacts from those assessed in the Applicant's Transport Assessment (which are based on the junction shown in the illustrative General Arrangement Plans).
4.7.18 It is recommended that the future capacity and proposed junction form/layout should be reconsidered, and should be capable of accommodating the expected and future traffic flow without resulting in excessive delay to traffic on the New Access Road. This concern was also raised in the Stage 1 Road Safety Audit report by WSP (completely independent from the Design Team) (October 2017) in Problem 1 and the Designers' Response (Document 7.5: Design Report Appendix 8). The Road Safety Audit stated the following in Problem 1:
"Providing a priority junction layout could create long delays for drivers on Riverside Road resulting [in] them becoming frustrated and impatient leading to risk taking at the junction area with collisions occurring."
"The proposed priority ghost-island junction layout between the realigned Riverside Road and Riverside Road serves a major employment, commercial and retail area. This generates a large amount of peak-time traffic flow in and out of the Riverside Road area. Providing a priority junction may not be appropriate to accommodate the demand."
"It is recommended that the junction layout should be capable of accommodating the expected and future traffic flow without creating excessive delay to traffic on the minor arm (Riverside Road)."
4.7.19 PBA concurs with the concerns raised in the Road Safety Audit.
4.7.20 The Designers' Response to this Problem was as follows:
"The design life of the junction is currently not known. The whole of the adjacent site is the subject of a future development containing a mixture of residential and industrial development. The current junction is the preferred layout, as a signalised junction would result in private residencies being 'caught in between' the signal heads, with a potential safety issue for turning vehicles into and out of private property. Provision of roundabout is considered to be premature in light of the future development".
4.7.21 The Designers' Response is short sighted in light of the allocation. If the junction is to be capable of accommodating the proposed growth on the allocated site then the impact of that growth should be considered from the outset since it could affect the proposed road alignment of the New Access Road, the form of the junction, and interaction with existing residential properties on Waveney Drive opposite the new junction which will be fixed as part of the DCO.
4.7.22 The concern is that the proposed junction form and capacity could become an issue to future developments at either Riverside Business Park and the Jeld Wen site when their planning applications are made, when they should have been addressed as part of the DCO application. This would put the burden on these developments, which may not have the land available to resolve this issue.

## Recommendations

4.7.23 It is acknowledged that the Applicant is undertaking junction capacity sensitivity testing of the proposed priority junction. This should take account of the following:
i) higher observed traffic flows to/from Riverside Business Park (to account for potential higher flows than recorded over one-day during the Summer) as highlighted in the December 2018 two-week ATC count);
ii) an element of growth associated with vacant plots and existing business at the Riverside Business Park; and
iii) the Kirkley Waterfront and Sustainable Urban Neighbourhood allocated site.

Transport/Highways Supporting Evidence for NWL
4.7.24 This is the only vehicular access to Riverside Business Park (and Trinity House), and therefore needs to provide sufficient resilience and security of access to maintain operational facilities on the Business Park.
4.7.25 One of the principal justifications for the Scheme is to facilitate future business growth and to provide capacity to accommodate planned growth (see, for example, the Case for the Scheme, Document 7.1, paragraph E.S.8) yet the proposed junction on the New Access Road may well provide a constraint to future employment growth on both the Riverside Business Park and allocated Jeld Wen site.

### 4.8 Issue Number HT7 - Rail level crossing on B1531 Victoria Road NWL LLP Representations

There is minimal information detailed on the likely forecast impact on the existing rail level crossing as a result of the Scheme, particularly since there is forecast to be almost a doubling of traffic on Victoria Way and Waveney Drive. It is not clear what level of consultation has taken place with Network Rail and the local highway authority in terms of considering the safety implications of this forecast impact, since level crossings are considered by the Rail industry as a key safety concern in some instances, and Network Rail's policy position on level crossings is broadly to close, bridge over or tunnel under level crossings to address this safety concern.

## Applicant's Response

The forecast changes in traffic flows on B1531 Victoria Road in the vicinity of the level crossing near to A146 Bridge Road / A1117 Saltwater Way for 2022 and 2037 are presented in Table D-1 of Appendix D based on the Saturn Model.

This shows that traffic flows passing through the level crossing will reduce substantially by approximately $50 \%$ as a result of the Scheme. Therefore the Scheme would help to alleviate delay and congestion which occurs at this level crossing.

Table E-2 of Appendix E compares the forecast daily traffic flows for 2022 and 2037 with and without the Scheme on A146 Bridge road level crossing. This shows that traffic flows passing through the level crossing would reduce significantly by between 25 and 30\%.

The Scheme would therefore result in a significant reduction in traffic volumes at both level crossings.

## PBA's Further Review

4.8.1 The Applicant's response is acknowledged. However, it is still unclear from the Transport Assessment documentation how traffic on the same road (B1531) over a 2 km stretch is forecast to significantly reduce on the western end, but significantly increase on the eastern end. If available, traffic model 'difference plots' between the Do Minimum and Do Something scenarios should be provided to clarify this point.

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### 4.9 Issue Number HT8 - Proposed New Access Road / New Canning Road Priority Junction

## NWL Representations

The proposed layout requires further review in the interests of highway safety. There is no proposed right turn lane facility into Canning Road (the vast majority of vehicles will turn right).

## Applicant's Response

There is sufficient room to provide a ghost island junction but it is not deemed necessary. TD42/95 Geometric Design of Major/Minor Priority Junctions part of the Design Manual for Roads and Bridges, provides guidance that the provision of such a facility is based on a combination of traffic flows, see Figure 2.2 of TD 42/95. For the flows expected to be using Riverside Road, the link to Canning Road would need to become the Major Road Flow and the link to Nexen the Minor Flow. The figure states that for a major road flow the forecast traffic would need to be 13,000 vehicles two-way AADT and the minor road greater than 300 vehicles two-way AADT. The predicted flows based on the available car parking spaces to Waveney District Council offices, Northumbrian Water Ltd and others do not aggregate to 13,000 vehicles and similarly the number of vehicles accessing Nexen will be considerably less than 300 vehicles. Therefore, the predicted flows show that a simple junction without a right turn lane is appropriate.

PBA's Further Review
4.9.1 The Applicant's response relates to the capacity of the junction. The issue was raised, not because of capacity, but in the interests of highway safety.
4.9.2 The safety concern is that the vast majority of vehicles will turn in and out of Canning Road to access Suffolk County Council offices, Waveney District Council offices, Trinity House, etc. Since there will be minimal traffic accessing the Nexen unit, there is the concern that over time, drivers exiting Canning Road may become complacent and not look right when exiting resulting in a collision.
4.9.3 The proposed layout requires further review in the interests of highway safety. Alternatively, the priority should be changed with the Nexen access arm becoming the minor arm. This then responds to the dominant traffic flow movements.
4.9.4 This highway safety concern is also acknowledged in the Examining Authority's written questions and request for information (ExQ1: 17 December 2018). In particular, question 2.10 on what further measures can be put in place to address this concern.

### 4.10 Issue Number HT9 - Junction visibility splays at the Proposed New Access Road / New Canning Road Priority Junction

## NWL Representations

The junction visibility splays should be shown, particularly to the right to vehicles exiting from the direction of Nexen, in order to demonstrate that the appropriate level of visibility can be achieved.

## Applicant's Response

Visibility splays have been checked and provided to the junction. The proposed visibility envelope is shown in a plan in Appendix F and as per Suffolk County Council's design guide for a local distributor road, with a set-back of 4.5 m .

There is a small element outside of the Order limits, however any development on that land (which is in any event in local authority ownership) would be subject to the planning process in which impact on highways safety would be a consideration.

Given that SCC as local highway authority will be required to sign off on completion of new highways pursuant to article 8 of the dDCO, the final placement of trees and visibility will be in accordance with highways standards.

## PBA's Further Review

4.10.1 It is acknowledged that the visibility plan contained within Appendix $F$ of the Response shows a small element of the visibility envelope outside of the Order Limits.
4.10.2 As noted in Issue Number HT8, changing the priority with the Nexen access arm becoming the minor arm would resolve this issue.

### 4.11 Issue Number HT10 - New Access Road 90 degree bend

## NWL Representations

In the interests of highway safety, the forward visibility should be shown on the General Arrangement Plan, and land set aside to accommodate the visibility envelope. We note that the Landscaping Plans (Sheet 2 of 2) shows proposed trees immediately either side of the new access road which could impede forward visibility. Further details should be given as to how the proposed land take for the Order Limits will be disposed of so as to maintain the required forward visibility around the bend within the future highway boundary.

## Applicant's Response

The land take proposals for the Scheme have taken account of the need for a visibility splay at this location - plots 3-41 and 4-04 are included for this purpose. This will provide for a 70 m forward visibility, in accordance with Suffolk County Council's design guide for a local distributor road.

Given that SCC as local highway authority will be required to sign off on completion of new highways pursuant to article 8 of the dDCO, the final placement of trees and visibility will be in accordance with highways standards.

## PBA's Further Review

4.11.1 The Applicant's response is acknowledged, and PBA has no further comments to make at this stage. PBA would recommend the New Access Road design is subject to a Road Safety Audit process.

### 4.12 Issue Number HT11 - Stopping up of Canning Road junction with Riverside Road

## NWL Representations

Canning Road to Riverside Road is to be stopped up, but no turning head has been provided at the end.

## Applicant's Response

No turning head was indicated in the application plans because it is anticipated that anyone using the remaining length of Canning Road is likely to be visiting the Registry Office and if any non-visitors to the office are forthcoming then they can turn around using the existing access to the Registry Office.

However, the Applicant can confirm that it is currently reviewing whether a turning head should be provided and will update the Examination in due course.

## PBA's Further Review

4.12.1 The Applicant's response is acknowledged, and it is welcomed that the Applicant is currently reviewing whether a turning head should be provided. PBA still considers that a formal turning area should be provided, regardless of the Registry Office access which is private.

### 4.13 Issue Number HT12 - Canning Road accessibility

## NWL Representations

Furthermore, existing pedestrian/cycle accessibility to Canning Road is to be severed to Riverside Road. It is not clear how this accessibility will be maintained for existing staff at the Riverside Business Park.

## Applicant's Response

There are a number of options available to pedestrians and cyclists to access Riverside Business Park. There is currently an informal access between Riverside Road and the NWES car park. The Applicant will seek to retain this link. NWL has a suitable access on to Waveney Drive opposite its main entrance that will remain unchanged. There is also another access further to the west, adjacent to the Riverside Children and Families' Centre. The New Access Road also provides facilities for pedestrians and cyclists, and finally the Control Tower building is being future-proofed to allow for a link between the Bridge deck and Riverside Road to be created once public access to the adjacent quay has been provided by the landowner, Waveney District Council.

PBA's Further Review
4.13.1 The Applicant's response is acknowledged, and it is welcomed that the Applicant will seek to retain links.
4.13.2 However, it is still unclear how pedestrian and cycle accessibility (for all abilities) will be maintained for existing staff at the Riverside Business Park along the western side of Riverside Road due to the rise in gradient.
4.13.3 Further information is required on this issue since if accessibility off Riverside Road is to be severed to pedestrians and cyclists, there is a concern that pedestrians and cyclists entering and leaving Riverside Business Park from the east and north may potentially be forced to access from Waveney Drive and through the frontage of Trinity House and its associated private car park. The Applicant acknowledges that NWL has a suitable access on to Waveney Drive opposite its main entrance. The concern is that other Business Park uses will use this access.

### 4.14 Issue Number HT13 - Pedestrian crossings

## NWL Representations

There are proposed new crossings on Waveney Drive and Riverside Road on the entry/exits to the new southern roundabout. Given the forecast doubling of traffic on Waveney Drive as a result of the Scheme, and the Environmental Statement conclusion that Waveney Drive will have a substantial disbenefit with significant adverse effects on fear and intimidation and severance for pedestrians, these proposed new crossings should be controlled crossings for both pedestrians and cyclists in order to maintain/enhance accessibility by nonmotorized users to the Riverside Business Park.

## Applicant's Response

The Applicant recognises the importance of crossings to mitigate impacts on severance, however considers that the type of crossing is best determined through the detailed design process to ensure the most appropriate solution is used.

The Applicant notes that SCC/WDC has agreed "that the type of control used at crossings should be determined at the detailed design stage taking account of the requirements set out in the Design Guidance Manual."

## PBA's Further Review

4.14.1 The same comments are made as Issue Number HT4. This issue is also acknowledged in the Examining Authority's written questions and request for information (ExQ1: 17 December 2018), in particular question 2.7.

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### 4.15 Issue Number HT14 - Car Parking

## NWL Representations

Reduction in on street car parking - despite the application documents stating that demand for car parking at Riverside Business Park is greater than supply (causing daily overspill use of on street parking on Riverside Road and Canning Road) the proposals include further parking restrictions on Canning Road and Riverside Road which result in a net loss of on street parking of around 48 vehicles. We do not consider the assertion that the proposals will encourage a reduction in parking need through improved connectivity for pedestrians and cyclists to be justified and have concerns that the Transport Assessment states that any displacement of on street parking would occur in the neighbouring residential streets (which we would consider inappropriate and insufficient).

Canning Road restrictions - it is not clear from the application documents why it is proposed to restrict all existing on street parking on Canning Road, since this on street parking should not affect the operation of the Scheme. NWL would argue this should remain as existing.

Lack of parking on new access road - there is no justification as to why on street parking could not be provided on the new access road, which would mitigate the loss of on street parking proposed elsewhere.

## Applicant's Response

The Applicant recognises the concerns of overspill of parking to adjacent residential areas.
The Applicant, having conducted parking surveys, understands that there are a number of factors contributing to on-street parking in the area, in particular differing approaches to charging for staff at some shared premises.

In some cases on-street parking is used out of ease of accessibility (for example proximity to workplace, avoidance of barrier controlled parking) than out of necessity - even when that work place has its own off-street parking.

In the Applicant's view there is a reasonable prospect of some of the displaced parking being accommodated within existing sites, taking in to account the distance to adjacent residential areas.

The Applicant also remains of the view that the Scheme will encourage cycling and walking and improves accessibility to Riverside Business Park for those modes.

Consequently, the Applicant considers that while there remains some potential for displacement to adjacent areas, this would be limited.

Nevertheless, the Applicant is reviewing the TRM plans to determine if some on-street parking could be retained. The Applicant does not however consider that on-street parking should be provided on the New Access Road; this is a 'Major Access Road' and in accordance with the Suffolk Design Guide this would be inappropriate.

The Applicant is aware that NWL staff do use on-street parking, and is cognisant that SCC, as the local highway authority, is working with NWL regarding its Travel Plan.

## PBA's Further Review

4.15.1 It is noted and welcomed that the Applicant is reviewing the proposed Traffic Regulation Measures plans to determine if some on-street parking could be retained.
4.15.2 PBA would agree that the Scheme would encourage walking and cycling in the area.
4.15.3 It is acknowledged that this issue is also raised in the Examining Authority's written questions and request for information (ExQ1: 17 December 2018). In particular, question 2.9 on how overspill parking from Riverside Business Park will be mitigated as a result of further parking restrictions. PBA endorse this question.

## Reduction in on-street car parking

4.15.4 However, PBA still has concerns that the Transport Assessment states that any displacement of on-street parking would occur in the neighbouring residential streets, such as Waveney Crescent and Kimberley Road. This is considered inappropriate and insufficient. Waveney Crescent and Kimberley Road are narrow 5.5 m wide residential roads and are not appropriate to accommodate the likely levels of overspill from the Business Park.

## Canning Road parking restrictions

4.15.5 It is not clear from the application documents why it is proposed to restrict all existing on-street parking on Canning Road, since Canning Road is currently an unadopted private road, and this on-street parking should not affect the operation of the Scheme. This should remain as existing.

## Lack of parking on the New Access Road

4.15.6 It is noted that the Applicant has stated that it is considered inappropriate to provide on-street parking on the New Access Road. Consideration could still be given to providing parking bays alongside the New Access Road, so vehicles are off the carriageway. This could be on one side of the access road (e.g., western side). This could provide over 270m of parking for around 45 vehicles. This would assist in mitigating the loss of on-street parking proposed elsewhere should the proposed Traffic Regulation Measures remain.
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### 4.16 Issue Number HT15 - HGV Impact (During Construction)

## NWL Representations

HGV impact - the ES forecasts 108 two-way HGVs per day to the southern compound, which enter via Waveney Drive, but then states that this "does not require detailed assessment as it will not constitute a change in traffic of greater than $30 \%$ on any link within the study area", however the number of HGVs will increase by more than 30\% on Waveney Drive, as a result (>85\%). Reassessment should be undertaken to determine if there are likely to be any significant effects arising, and associated mitigation measures to be adopted during the peak construction phase.

## Applicant's Response

The construction phase of the Scheme is predicted to generate a maximum peak of 108 twoway traffic movements per day for the delivery of construction materials. (as reported in 19.5.1 of the ES (document reference 6.1 / PINS document reference APP-136). This includes both Light Goods Vehicle and HGV movements.

It should be noted that this represents a peak forecast for the number of construction vehicles which is predicted to occur approximately half way through the 2 year construction period, in Autumn 2020. The number of construction vehicles would be on average, much lower than the peak forecast over the duration of 2 year period.

There are three construction compounds and deliveries would be split between the north and the south of Lake Lothing. Assuming a 50/50 split of movements there would be 54 two way movements a day at the peak of construction through Station Square and along Waveney Drive. As the construction hours for the Scheme would be from 07:00 to 19:00, a twelve hour day, this equates to fewer than five HGV movements per hour.

As reported in para 10.1 .9 of the TA (document reference 7.2 / PINS document reference APP-093) base year traffic data from the SATURN model identifies a flow of approximately 8500 vehicles per day using Waveney Drive of which approximately $1.5 \%$, or 127 , constitute HGVs. The number of HGVs that are likely to access the southern compound is 54 which represents a change of less than 1\% of total traffic and 43\% of HGV's.

The IEMA Guidelines set out rules-of-thumb for a screening process in determining the scale and extent of the assessment. This include links where traffic flows are predicted increase by more than 30\% (or HGVs increase by more than 30\%). On the basis that the 54 vehicles represents a peak which is expected to occur for a very limited period of the construction, and the vast majority of the construction period will not result in vehicle numbers that are over this threshold it can be reasonably expected that the increase in flows will be well below the 30\% threshold for the vast majority of the construction phase.

Effects upon nitrogen dioxide are measured either against the annual mean objective level of $40 \mu \mathrm{~g} / \mathrm{m} 3$ or the hourly mean objective level of $200 \mu \mathrm{~g} / \mathrm{m3}$. As the threshold for assessment of HGV traffic is only exceeded for a very limited period of time during the construction phase, an assessment upon the annual mean is not considered appropriate and therefore an appraisal against the hourly mean is preferred.

Where hourly monitoring data is not available, a 'rule of thumb' provided by DEFRA identifies that the hourly objective is unlikely to be exceeded where the annual mean is less than $60 \mu \mathrm{~g} / \mathrm{m3}$. As the highest monitored nitrogen dioxide level was $34.2 \mu \mathrm{~g} / \mathrm{m} 32017$ (see Appendix $8 B$ of the Environmental Statement (document 6.2/APP-168)) it is considered highly unlikely that the additional 108 HGVs would result in a change in the nitrogen dioxide level sufficient to breach the hourly average objective level.

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It is therefore not expected that there would be significant effects arising from construction related traffic and further assessment was not considered necessary.

## PBA's Further Review

4.16.1 PBA seek further clarity from the Applicant as to the interpretation of the number of HGVs likely, since there is some ambiguity and conflicting information in the DCO application documents.
4.16.2 The Scheme would commence in late 2019, and take approximately two years to complete. Working hours would be 0700 to 1900 Monday to Friday (12 hours), and 0700 to 1300 on Saturday (6 hours). Therefore, for Trinity House operations, there will only be one hour during the working week (1900-2000) when no construction activities would be taking place, and 4 hours during Saturday (1300-1700) when no construction activities would be taking place. For reference therefore, during the two year construction period, construction/delivery activities will be occurring during the vast majority of time the call centre is operational.
4.16.3 Reference is made to the Environmental Statement, Section 5.6 (Construction) and Section 19 (Traffic and Transport). These sections outline the peak of construction of the Scheme, and the maximum HGVs likely.
4.16.4 In particular, PBA's interpretation of paragraphs 5.6.12 and 19.5.2 imply that there is forecast to be an average of 108 two-way HGVs per day (i.e., 54 HGVs arriving, and 54 HGVs leaving) to the southern compound, which enter via Waveney Drive (a compound located off Riverside Road). This is not 54 two-way movements as suggested in the response. Paragraph 5.6.12 states these are 'one-way movements associated where a one-way movements is a single access to or egress from a site'. Therefore, by definition, a two-way movement is double.
4.16.5 Based on PBA's interpretation of the numbers, for a working day (12 hours), this equates to an average of 9 HGVs per hour (e.g., 4 HGVs in, 5 HGVs out) - or 1 HGV entering or departing every 6-7 minutes.
4.16.6 The Guidelines for the Environmental Assessment of Road Traffic published by The Institute of Environmental Assessment in 1993 (now the Institute of Environmental Management and Assessment - IEMA) suggest that for environmental impact, traffic flow increase (or heavy vehicle increases) of $30 \%$ or more represent a reasonable threshold for inclusions within the assessment process.
4.16.7 Paragraph 19.5.3 of the Environmental Statement states that this HGV generation ( 108 HGVs ) "does not require detailed assessment as it will not constitute a change in traffic of greater than 30\% on any link within the study area...therefore further assessment is scoped out of the assessment".
4.16.8 However, based on PBA's interpretation of the HGV numbers, this would be incorrect since the number of HGVs will increase by more than $30 \%$ on Waveney Drive. With reference to paragraph 10.1.9 of the Transport Assessment June 2018 (document Reference 7.2), there are approximately 8,500 vehicles per day using Waveney Drive of which approximately $1.5 \%$, or 127 , are HGVs. This would equate to a HGV increase of $85 \%$, well in excess of $30 \%$.
4.16.9 Furthermore, based on this interpretation, 10-11 months of the 2 year construction programme would have $>30 \%$ HGV increase on Waveney Drive - which is almost half of the construction programme.
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4.16.10 Therefore, further clarity is sought as the interpretation of the HGV movements. This is to ensure that if there are likely to be any significant effects arising during construction from HGV activity, associated mitigation is sought during the peak construction phase on Waveney Drive.

### 4.17 Issue Number HT16 - HGV Trip Distribution and Assignment (during construction)

## NWL Representations

There appears to be no mention of this in the application documents, and we consider the likely trip assignment of HGVs on Waveney Drive should be reviewed and assessed to fully understand the likely impacts (and associated mitigation, if required).

## Applicant's Response

The assumptions relating to the distribution of HGV's during the period of construction are set out in Section 19.5 of the ES (document reference 6.1 / PINS document reference APP-136). As noted above, this assumes a 50\% split of movements to the north and south of the Lake. This would result in 54 two-way movements a day at the peak of construction through Station Square and along Waveney Drive.

HGVs would route via the SRN/PRN as far as is practical to minimise the impact on local roads. Paragraph 2.8.3 of the Interim CoCP requires the Contractor to set out the traffic management measures that will be applied during construction in the full CoCP.

## PBA's Further Review

4.17.1 The same comments are made as Issue Number HT15.
4.17.2 It should also be noted that Waveney District Council's (WDC) and SCC's relevant representation submitted on September $21^{\text {st }} 2018$ following a Planning Committee meeting on September 18 ${ }^{\text {th }} 2018$ stated that "the impact of construction traffic will require further consideration." PBA agrees.

### 4.18 Issue Number HT17 - Abnormal HGV loads (during construction) <br> NWL Representations

There is no mention of this in the application pack. Abnormal loads should be considered, and how they will be managed so as to not interfere with local business operations.

## Applicant's Response

Permission is required from Suffolk County Council in its capacity as the local highway authority to move abnormal loads on the local highway network and Suffolk Police must be notified. On receipt of an application Suffolk County Council will work with the transporting company to agree a safe and suitable route for the load, aiming to minimise impacts on other road users as far as possible. The need to move abnormal loads on the highway network for the Scheme is currently unknown.

PBA's Further Review
4.18.1 The Applicant's response is acknowledged.
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## 5 Summary and Conclusions

5.1.1 This Report has been prepared by PBA on behalf of NWL and identifies a number of transport and traffic related concerns arising from the proposed Lake Lothing Third Crossing.
5.1.2 NWL has always been supportive of the principles of the Scheme, which seeks to relieve traffic congestion and assist the development and regeneration of Lowestoft. However, it is essential to NWL that a series of matters are clarified and resolved in relation to NWL's land interests and operational activities at Trinity House both during construction and operation of the Scheme.
5.1.3 PBA has reviewed the DCO application documents and the Response to Relevant Representations submitted by the Applicant in November 2018. There are a number of concerns that remain outstanding in terms of the potential impact on NWL's operations at Trinity House. A summary of the identified issues are as follows:

## Construction Phase

- There is currently no mechanism to ensure that vehicular, pedestrian and cycle access to Trinity House is maintained at all times during the construction period and this must be secured through the DCO.
- There is insufficient detail about the likely impact of HGV traffic on Waveney Drive during construction. Further clarity is required as to the accuracy of the forecast HGV numbers and likely trip distribution and assignment and confirmation that this has been adequately assessed and that the mitigation proposed is appropriate.


## General highway design arrangements

- There are safety concerns associated with the layout of the proposed new junction between the New Access Road and New Canning Road, and prioritisation of the proposed T-junction should be reviewed and amended in the interests of highway safety.
- Further consideration should be given to the stopping up of the Canning Road junction with Riverside Road and how accessibility for pedestrian and cyclists are maintained / enhanced.
- Given the substantial increase in traffic volumes as a result of the Scheme, further mitigation should be provided in the form of additional pedestrian crossings on Waveney Drive both during the construction and operational phases of the development. These should be secured through the DCO and provided prior to the start of construction of the Scheme.


## Operational phase (final state)

- Further mitigation measures should be provided to address the significant adverse effect to pedestrians on Waveney Drive as a result of the forecast increase in traffic.
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- The traffic counts informing the Transport Assessment's (TA) assumptions as to movements to Riverside Business Park were based on a single day in July (which is not a neutral month) and as such underestimates existing movements. The TA does not appear to take into account the future growth of Riverside Business Park, and as such underestimates traffic that will use the New Access Road. Furthermore, the TA does not account for the allocation of the Jeld Wen site for employment purposes in the area adjacent to the New Access Road. It assumes that no vehicles will load onto the New Access Road from that site. Given that the limits of deviation in the Works Plans allow for the provision of a new link into the Jeld Wen site, the approach in the TA is unrealistic and results in an underestimation of traffic using the New Access Road. The form of the proposed New Access Road / Waveney Drive priority ghost island junction should be reconsidered given the future growth allocated in this area and the actual trips associated with Riverside Business Park.


## On-street car parking

- The reduction in on-street car parking within the Riverside Business Park will be detrimental to the efficient operation of Trinity House and is likely to push vehicles onto nearby residential streets that are not able to accommodate the additional vehicles. The rationale for reducing on-street car parking is not clear and should not be introduced through the DCO.
- Consideration should be given to alternative on-street car parking arrangements on the New Access Road, to reduce the likelihood of non-residential parking in neighbouring residential streets.
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Appendix B General Arrangement Plan (Sheet 2 of 2)


## Appendix C Traffic Regulations Measures Plan (Sheet 2 of 3)



Appendix D Riverside Road ATC results

# Intelligent Data Collection Limited Lowestoft ATC 

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Project Number:
Site Number:
Week Commencing:
Road Name:
Survey Type:
Direction AB
Direction BA

Peter Brett Associates
ID04329
Site 1
03/12/2018
Riverside Road
ATC
Flow from Waveney Drive (S)
Flow from Canning Road (N)
to Canning Road (N)
to Waveney Drive (S)

## Quality Assurance and Issue Record

Quality Assurance

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| Signature |  |  |  |  |
| Checked by | David Collinge |  |  |  |
| Signature |  |  |  |  |
| Project Director | Paul O'Neill |  |  |  |
| Signature |  |  |  |  |
| Project Number | ID04329 |  |  |  |
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| 23:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 07-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  | 0 | 0 |  |  |
| 06-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| 06-00 | 0 | 0 | 0 | 0 | , | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| 00-00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |






















Client:
Project Number:
Junction Numbe
Junction Nun
Flow from:

| Date | Monday | 03/12/201 |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time | Total | Cycle | Motor Cycle | Car | LGV | 2 Axled Rigid | 3 Axled Rigid | 4 Axled Rigid | 3 Axled Artic | 4 Axied Artic | 5+ Axled Artic | Bus | $\begin{gathered} \hline \hline \text { Mean Speed } \\ (\mathrm{Mph}) \\ \hline \hline \end{gathered}$ | $\begin{gathered} 85 \% \text { ile Speed } \\ (\mathrm{Mph}) \end{gathered}$ |
| 00:00 | * | * | * | * | * | * | * | * | * | * | * | * |  |  |
| 00:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 00:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 00:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 01:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | $:$ |
| 01:30 | * | * | * | * | * | * | * | * | * | * | * | * | $:$ | $:$ |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 02:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 02:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 02:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 03:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | $\square$ |
| 03:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 04:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 04:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 04:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | $:$ |
| 05:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 05:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 06:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 06:30 | ${ }_{*}^{*}$ | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 07:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 07:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 07:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 08:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 08:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 08:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 09:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 09:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 09:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 10:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 10:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 11:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 11:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 11:45 | * | * | * | * | * | * | * | * | * | * | ${ }_{*}^{*}$ | * | - | - |
| 12:15 | * | * | * | * | * | * | * | * | * | * | * | * |  | . |
| 12:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 12:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 13:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 13:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 14:00 | * | * | * | * | * | * | * | * | * | * |  |  |  |  |
| 14:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 14:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 14:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * |  |  |
| 15:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 15:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 15:45 | * | * | * | * | * | * | * | * | * | * |  |  | - | - |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 16:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 16:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 17:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 17:30 | * | * | * | * | * | * | * | * | * | * | * | * |  | - |
| 17:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 18:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 18:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 19:15 | * | * | * | * | * | * | * | * | * | * | * | * |  | - |
| 19:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 20:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 20:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 20:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | - |  |
| 21:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | : |
| 21:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 22:15 | * | , | * | * | * | * | * | * | * |  | * | * | - | - |
| 22:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 22:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 23:15 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 23:30 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 23:45 | * | * | * | * | * | * | * | * | * | * | * | * | - | - |
| 07-19 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| 06-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| $06-00$ $00-00$ | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | - |  | 0 |  |  |
| 00-00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |






















intelligentdata

|  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| vehicle classification: |  |  |  |  |  |  |  |
|  | Monday | Tuessay | Wednestay | Thursday | Friday | Saturday | Sunday |
| Monday |  |  |  |  |  |  |  |





intelligentdata
Tuesday Wednesday Thursday
Friday
Saturday Sunday
Monday

|  |  |  |
| :---: | :---: | :---: |
| 18esday | Wednesday | Thursday |

Saturday $\quad$ Sunday



## Intelligent Data - Automatic Traffic Count Output

Period Commencing:
Road Name: Riverside Road

03/12/2018

## Speed Summary Data

## A-B Direction

| Mean Speed <br> $(\mathrm{mph})$ | 85\%ile Speed <br> $(\mathrm{mph})$ |  |
| :---: | :---: | :---: |
| Date | - | - |
| $03 / 12 / 2018$ | 23.0 | 27.3 |
| $04 / 12 / 2018$ | 22.4 | 26.8 |
| $05 / 12 / 2018$ | 22.6 | 27.2 |
| $06 / 12 / 2018$ | 22.5 | 27.2 |
| $07 / 12 / 2018$ | 20.8 | 26.7 |
| $08 / 12 / 2018$ | 21.9 | 27.5 |
| $09 / 12 / 2018$ | 23.2 | 27.6 |
| $10 / 12 / 2018$ | 23.1 | 27.3 |
| $11 / 12 / 2018$ | 23.4 | 27.8 |
| $12 / 12 / 2018$ | 23.2 | 27.6 |
| $13 / 12 / 2018$ | 22.7 | 27.5 |
| $14 / 12 / 2018$ | 21.1 | 27.0 |
| $15 / 12 / 2018$ | 21.2 | 26.9 |
| $16 / 12 / 2018$ | 22.9 | 27.1 |
| $17 / 12 / 2018$ | 23.1 | 27.3 |
| $18 / 12 / 2018$ | 22.9 | 27.0 |
| $19 / 12 / 2018$ | 23.3 | 27.3 |
| $20 / 12 / 2018$ | - | - |
| $21 / 12 / 2018$ | - | - |
| $22 / 12 / 2018$ | - | - |
| $23 / 12 / 2018$ |  |  |
|  |  |  |

Prepared by: Belal Mustfah Checked by: David Collinge

These speeds represent those which are between $1 \%-10 \%$ above the posted speed limit These speeds represent those which are between $10 \%-20 \%$ above the posted speed limit These speeds represent those which are over $20 \%$ above the posted speed limit

