Playford Corner Works

Travel Plan

DCO Requirement 27

(Applicable to Work Numbers 39 and 40)

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TABLE OF CONTENTS

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1. INTRODUCTION AND SCOPE

1.1. Project Overview

1. East Anglia Three Limited (EATL) was awarded a Development Consent Order (DCO) by the Secretary of State, Department of Business, Energy & Industrial Strategy (DBEIS) on 7 August 2017 for the East Anglia THREE Offshore Windfarm (EA THREE). The DCO granted consent for the development of a 1,200MW offshore windfarm and associated infrastructure and is live until 28 August 2022.

2. The DCO has now been subject to three non-material variations:

- In March 2019 EATL submitted a non-material change application to DBEIS to amend the consent to increase the maximum generating capacity from 1,200MW to 1,400MW and to limit the maximum number of gravity base foundations to 100. In June 2019 DBEIS authorised the proposed change application and issued an Amendments Order.
- In July 2020 EATL submitted a second non-material change application to DBEIS to amend the parameters of its offshore substations (reducing the number of these to one) and wind turbines (a decrease in the number of turbines and an increase in their hub height and rotor radius). On 15 April 2021 DBEIS authorised this proposed change application and issued an Amendments Order.
- In August 2021 EATL submitted a third non-material change application to DBEIS to amend the consent to remove the maximum generating capacity of 1,400MW and to amend the parameters of its wind turbines (a decrease in the number of turbines and an increase in their hub height and rotor radius). The application is currently in the consultation phase.

3. The onshore construction works associated with EA THREE will have a capacity of 1,400MW and transmission connection of 1,320MW. The construction works will be spread across a 37km corridor between the Suffolk coast at Bawdsey and the converter station at Bramford, passing the northern side of Ipswich. As a result of the strategic approach taken, the cables will be pulled through pre-installed ducts laid during the onshore works for East Anglia ONE Offshore Windfarm (EA ONE), thereby substantially reducing the impacts of connecting to the National Grid (NG) at the same location. The infrastructure to be installed for EA THREE, therefore, comprises:

- The landfall site with one associated transition bay location with two transition bays containing the connection between the offshore and onshore cables;
- Up to four onshore electrical cables (single core);
- Up to 62 jointing bay locations each with up to two jointing bays;
- One onshore converter station, adjacent to the EA ONE Substation;
- Three cables to link the substation to the National Grid Bramford Substation;
- Up to three onshore fibre optic cables; and
- Landscaping and tree planting around the onshore converter station location.

4. Since the granting of the DCO, the decision has been made that the electrical connection for EA THREE will comprise a high voltage direct current (HVDC) cable rather than a high voltage alternating current cable and, therefore, the type of substation that will be required is a HVDC converter station. The substation will, therefore, be referred to here as a 'converter station' and this amended terminology has been agreed with the relevant authorities on 15 October 2020. It has also been determined that only one converter station will be constructed rather than two that will be installed in a single phase.

1.2. Purpose and Scope

5. This plan has been produced to fulfil DCO Requirement 27 Part (1)(b) which states:

> *27. (1) No stage of the connection works may commence until for that stage the following have been submitted to and approved by the relevant local planning authority in consultation with the relevant highway authority—*
>
> *(b) a travel plan which must be in accordance with the outline travel plan;*

6. The scope of this document relates to the Travel Plan associated with the construction of the Playford Corner Works Stage (Work No.s 39-40),of the EA THREE construction works. The works are part of the onshore cable route that runs from the landfall location at Bawdsey to the onshore Converter Station works located near Bramford, Suffolk (Figure 1 Site Context Plan). Separate Travel Plans have been produced for each stage of the connection works and are provided under separate cover. Separate Port Travel Plans will also be prepared with regards to the ports to be used for the offshore construction works.

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7. The Playford Corner Works will be some of the first works to be undertaken along the cable route. These works have been designated as a stage in their own right to allow the works to commence at this location prior to works commencing along the cable route as a whole (i.e. the main cable works construction phase). The Construction Consolidation Site (CCS) and the access to it will be constructed in Summer 2022 and the additional access, jointing bay installation, cable pull through and reinstatement will be undertaken as part of the main cable works construction phase.

8. This document is intended to set out a plan to meet key objectives which will maximise the sustainability of travel methods used to get to and from the Playford Corner Works, to reduce the associated volume of vehicular traffic and therefore minimise the carbon footprint generated and the impact on the environment and surrounding communities. This will involve ensuring that methods of travel used are more sustainable – e.g. minibuses instead of cars – and that the need for travel to and from site is absolutely required.

9. While this Travel Plan is a full Travel Plan (rather than an Interim Travel Plan in the terminology used by Suffolk County Council (SCC) guidance (SCC, undated) (see Section 5.2.2)), this Travel Plan is a dynamic, living document that will be updated as required following review of monitoring outputs, to ensure that the aims and objectives represent the up-to-date situation in respect of travel and access. This Travel Plan will be in use for the duration of the Playford Corner Works and, therefore, regular monitoring and review will be essential to ensuring that the document remains relevant.

10. This Travel Plan has been developed with consideration for the scale of the development and the likely impact on travel behaviour for construction staff and vehicles as a result of any potential measures.

11. EATL will work with the SCC Highways Authority to ensure appropriate resourcing is in place to monitor compliance with the provisions of this Travel Plan.

12. The information contained herein shall be adhered to by the appointed Principal Contractor and implementation and compliance will be monitored by the Construction Management Team. These measures will only be revised with the agreement of East Suffolk Council (ESC). Any revisions to the Travel Plan will be issued with the quarterly monitoring report (see Section 10.2).

1.3. Objectives

13. A Travel Plan is an important tool for delivering sustainable access to a development. It provides a strategy that seeks to deliver sustainable transport objectives through positive action. This Travel Plan seeks to establish clear outcomes to be achieved in relation to access and sets out all the measures to be implemented, with timescales, targets and responsibilities for implementation, monitoring and review.

14. An Outline Travel Plan (Document 8.8 of the Environmental Statement (ES)) was produced to support the EA THREE DCO application. This Travel Plan has been produced in accordance with the principles, objectives and guidance provided within the Outline Travel Plan which provides the necessary guidance to formulate a plan for managing the potential increase in vehicular traffic as a result of EA THREE onshore construction works.

15. From a transport planning perspective, the onshore cable route has challenging features such as, a specialist workforce, which is widely disbursed and travelling from remote locations. Without intervention, the workforce would have the propensity to use private car travel to site and many of those journeys would be single occupancy. This in turn could lead to significant environmental impacts on the local highway network and the surrounding communities in the vicinity of the onshore cable route.

16. A review of the transport network within the project study area (Section 6 refers) has concluded that the existing public transport and road network offers few opportunities to access the site by walking, cycling or public transport and therefore these modes are unlikely to make a material contribution to the construction personnel travel choices. To address this, a Travel Plan strategy has been developed which concentrates on transporting personnel to site, at a minimum occupancy of 1.5 employees per vehicle (with a stretch target of 2.5 employees per vehicle), to manage the impact of the construction workforce traffic. This requires intercepting employees at journey origin with multiple pick-ups by minibus/crew bus and car share syndicates with the aim of reducing single occupancy vehicles. In addition, the Travel Plan Strategy includes the following key features for the project as a whole:

- Preventing employees travelling direct to certain sections of the cable route (i.e. sections 1 to 7 and 9 to 10 as shown on Figure 3 during the main cable route construction phase);
- The restriction of travel to the Primary CCS, converter station and onshore cable route section 8 by single occupancy cars; and
- The provision of minibus/crew bus transfer from the Primary CCS to sections 1 to 7 and 9 to 10 (Playford Corner Works are in Section 7 (see Figure 3).:

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17. The main objectives of this Travel Plan aim to bring a sustainable transport arrangement to the daily construction operations and can be summarised as follows:

- Achieve a minimum occupancy of 1.5 employees per vehicle and where possible to meet a stretch target of 2.5 employees per vehicle;
- Achieve a minimum percentage of trips made by minibus/crew bus pick-up service of 35%;
- Achieve the minimum number of single car occupancy car traffic movements to and from the development in order to minimise traffic impacts on local communities and commuters;
- Reduce the need for travel to and from site; and
- Address the access needs of site users, by supporting cycling, walking and public transport; and
- Outline the performance standards required of the Principal Contractor to ensure the project is managed within the bounds of the employee generated traffic impacts assessed in Chapter 27 Traffic and Transport of the ES.

18. In contrast to a more typical workplace Travel Plan, construction employees would be in a contractually controlled environment, ensuring that monitoring and enforcement regimes are more readily accepted.

2. ABBREVIATIONS

CCS	Consolidated Construction Site
CIHT	Chartered Institution of Highways and Transportation
CLO	Community Liaison Officer
DBEIS	Department of Business, Energy and Industrial Strategy
DC	Direct Current
DCO	Development Consent Order
EA ONE	East Anglia ONE Offshore Windfarm
EA THREE	East Anglia THREE Offshore Windfarm
EATL	East Anglia THREE Limited
ES	Environmental Statement
ESC	East Suffolk Council
HVDC	High Voltage Direct Current
MW	Megawatt
NG	National Grid
NPPF	National Planning Policy Framework
SCC	Suffolk County Council

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3. CABLE CONSTRUCTION

3.1. Cable Works – Overview

19. The construction works will be spread across a 37km corridor between the Suffolk coast at Bawdsey and the Converter Station at Bramford, passing the northern side of Ipswich. The cables will be pulled through pre-installed ducts laid during the onshore works for East Anglia ONE. The construction activity within each section along the onshore cable route will be as follows:

- Any minor temporary modifications to the public road network;
- Establish the Construction Consolidation Sites (CCSs);
- Establish accesses to, and temporary haul road to, the jointing bay locations;
- Establish temporary jointing bay compounds;
- Excavate jointing bay pit to locate the existing ducts at each of the compounds;
- Construct jointing bay;
- Transport of cables to site, pull cables through ducts and undertake jointing;
- Topsoil replacement and seeding;
- Remove temporary compounds (jointing bays and CCS); and
- Reinstate all disturbed land and permanent fences and hedges.

20. Some temporary modification of the existing road networks may be required such as localised widening, temporary widening or socketing of street signs and temporary moving of street furniture in order to allow larger vehicles than normal to access the jointing bays. This will be completed prior to the start of the main construction works within relevant sections of the cable corridor route.

21. EATL will require up to seven temporary construction compounds to aid in the construction of the proposed East Anglia THREE project. These have been designated as 'Primary Construction Consolidation Site' (PCCS) and 'Secondary Construction Consolidation Site' (SCCS) depending on their uses. Two PCCS and up to five SCCS will be installed, which will all be temporary and will be removed once construction is complete.

Table 3-1 – Construction Consolidation Site Locations

CCS Type	ID	Address
Secondary	A	Bullen Lane, Bramford, Ipswich, Suffolk IP8
Primary	B	Paper Mill Lane, Claydon, Ipswich, Suffolk IP6 0AP
Secondary	C	Witnesham Road, Ipswich, Suffolk IP6
Secondary	D	Playford Corner, Playford Mount, Ipswich, Suffolk IP6 9DS
Primary	E	Top Street, Martlesham, Suffolk IP12
Secondary	F	Clappits, Woodbridge Road, Newbourne, Woodbridge, Suffolk IP12 4PA
Secondary	G	Park Lane, Ipswich, Suffolk IP10

22. The PCCSs will:

- Form the main point of access onto the linear construction site;
- Provide areas for the storage of materials and equipment;
- House site administration and welfare facilities for the labour resources;
- Form an interchange hub for deliveries of material, equipment and resources; and
- Allow HGVs to park prior to entering the local road network during peak hours.

23. The SCCSs will act as hubs for the delivery of materials, equipment and resources along the route and will enable access to the cable route for construction. They will be of sufficient size to accommodate limited storage of materials, equipment and labour welfare facilities.

24. It is anticipated that 29 jointing bays will be required along the 37km cable route, in addition to a transition bay at the landfall. Each jointing bay will comprise a concrete box 10m long by 3m wide by 1.5m high buried so that the base is 2.5m below ground level. A jointing bay construction compound will be required adjacent to each jointing bay and will have hardstanding areas of up to 900m^2 within the compound which would typically measure 24m x 115m i.e. 2,760m^2.(in accordance with Requirement 12(11) which stipulates that the footprint must not exceed 3,740m^2). The compounds will have hardstanding and accommodate containers, drum

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trailer movement, parking, and welfare. A typical layout is shown in Figure 2 of the Code of Construction Practice (EA3-LDC-CNS-REP-IBR-000047).

25. Existing accesses and farm tracks will be upgraded and used where possible to access the jointing bay locations. Once these accesses reach the cable corridor, the routes to connect to the jointing bays are referred to as 'haul road'. The length of haul road for the cable route is limited by Requirement 12(12) of the DCO to 18.05km.

26. In addition, the ducts to be used for EA THREE, which were installed during the EA ONE project construction works, will require to be 'proved' to ensure that they are intact and free of debris. This will be undertaken by the use of foam pigs which will be driven under pressure from jointing bay to jointing bay. Each stretch of duct that was installed using Horizontal Direct Drilling (HDD) will, however, require duct-proving excavations at each end of the HDD, to allow the use of different size foam pigs, due to a difference in the diameter of these compared to the ducting installed using open trench techniques.

3.2. Playford Corner Works

27. Playford Corner Works comprise a stage of the onshore connection works and cover Work No.s 39 and 40. The infrastructure within these Work No.s comprises:

- The Playford Corner SCCS (CCS D) in Work No. 40;
- Jointing Bay 12 in Work No. 39;
- Two accesses with the public roads as follows:
  - Access AP-X (Work No. 40) southwards from Playford Mount, to access the Playford Corner SCCS and Jointing Bay 12; and
  - Access AP-W (Work No.39) eastwards from Holly Lane to access Jointing Bay 13 in Work No 38 (this Jointing Bay is not part of the Playford Corner Works);
- A crossing of Church Road (CR08 and CR09); and
- The access tracks/haul roads required to access Playford Corner SCCS, Jointing Bay 12 and also, in part, Jointing Bay 13 in Work No. 38.

28. These are shown on Figure 2.

3.2.1. Accesses AP-X and AP-W, the Crossing Point, Access Tracks and Haul Roads

29. Playford Corner SCCS will be accessed from Playford Mount using Access AP-X. This access was used for the EA ONE project but was fully reinstated following the EA ONE works, so will need to be constructed again under the EA THREE DCO. From Access AP-X, a new temporary vehicular access track of 360m length and 5.5m width will be used to access the Playford Corner SCCS and also reach the edge of the cable corridor (Work No. 39), where 190m of 5.5m wide haul road will link to Jointing Bay 12 (via a crossing of Church Road). The amount of temporary haul road required to access Jointing Bay 12 will be 190m.

30. Access AP-W will be constructed from Holly Lane, along with 670m of 5.5m wide haul road to reach Jointing Bay 13. This access was not used as part of the EA ONE construction works. 210m of this haul road will be within Work No. 38 and is not part of the Playford Corner Works.

31. A crossing of Church Road (CR08 and CR09) will be required. This will be in the same location as that used for EA ONE.

32. No watercourse crossings will be required for the Playford Corner Works.

33. The construction methodologies associated with the accesses, access track and haul roads are typically as follows:

- Set out the access and track/haul road with the use of Global Positioning Systems (GPS) Real Time Kinematic (RTK) equipment;
- Locate, divert and cap any existing field drains;
- Set out and install drainage features the length of track to be constructed;
- Remove vegetation, then remove and locally store topsoil material over the working width; seeding topsoil if it is to be stored for longer than 6 months;
- Excavate to formation level and store any excess material;
- Under-track drainage will be installed where necessary and in accordance with drainage requirements;
- Place a geotextile onto existing subsoil to improve the bearing capacity of the sub-soil, depending on ground conditions, programme and landowner requirements; and

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- Place imported stone in accordance with the design to form the track structure.

3.2.2. Secondary Construction Consolidation Site (Work No. 40)

34. The Playford Corner SCCS will be a hub for the delivery of materials, equipment and resources. The dimensions of the Playford Corner SCCS will be 60m long by 20m wide covering a surface area of 1,200m^2, in accordance with Requirement 12(9)(a) of the DCO which limits the size of each SCCS to 1,200m^2. The Playford Corner SCCS will also be within the area previously used for the EA ONE SCCS in this location.

35. The construction of the SCCSs involves stripping of topsoil, importing and laying stone for the compound base and installing cabins and welfare facilities. Construction of the Playford Corner SCCS will take approximately 3 weeks and the methodology will be as follows:

- The extent of SCCS will be marked out with the use of GPS RTK equipment;
- Any existing field drains will be located, diverted and capped;
- Drainage features will be set out and installed as required;
- Security fencing will be erected around the perimeter of the SCCS;
- Once vegetation has been removed, topsoil material over the SCCS area will be removed and locally stored and seeded if it is to be stored for longer than 6 months;
- Any excess material will be excavated to formation level and stored; and
- Imported stone will be placed in accordance with the design of the SCCS base structure.

36. The SCCS will be constructed first, with the jointing bay and cable pull through occurring at a later date (anticipated in 2024). It is intended that the SCCS will provide an early onsite presence for the onshore cable construction works and will be used as a base for mitigation and survey works being undertaken as well as for the construction team to visit site during the later stages of the planning and design process. It may also be used for stakeholder and other site meetings.

37. The Playford Corner SCCS will remain in situ for the duration of the onshore cable works, prior to being restored as described in Section 3.2.5.

3.2.3. Jointing Bay 12 (Work No. 39)

38. The jointing bay will be located within Work No. 39, 90m to the east of Church Road (Grid Ref 621869, 248384).

39. Once the location of the jointing bay compound has been established (using GPS RTK equipment), creation of the compound will commence with erection of temporary security fencing, removal of topsoil layer and installation of hardstanding areas.

40. The jointing bay will then be excavated to a depth of up to 2.5m with adequate slope batter or shoring on all sides of the excavation to prevent the soil from collapse. The existing ducts will be uncovered and concrete slabs constructed to provide a level working area. Two sump pits will be included to facilitate drainage and dewatering and water will be treated, where necessary, before being discharged. Installation and jointing of the cables will then take place, along with installation of earthing link boxes and fibre optic cable chambers, before area is back filled with subsoil.

41. The creation of the jointing bay compound and excavation of the jointing bay will each take a week.

3.2.4. Cable Installation

42. The electrical transmission cables will be delivered to the Playford Corner SCCS where they will be transferred to the jointing bay compound when needed. The cable drums will comprise abnormal loads and their delivery will be managed as set out in the Traffic Management Plan (EA3-LDC-CNS-REP-IBR-000039). Two cable lengths of approximately 1260m will be required to pull through between each pair of jointing bays. The cable ducts will be proved before the cable is pulled through. Once the cables are received at the jointing bay compound, they will be temporarily stored on the hardstanding area prior to installation in the pre-installed ducts.

43. Installation of the cables into the ducts between Jointing Bay 12 and Jointing Bay 13 (not part of the Playford Corner Works) will begin with a cable pulling system being installed into the bay. A steel bond and winching system with free spinning rollers will be installed along the bottom of the bay. Hydraulic jacks will raise the cable drum off the ground and a winch will be used to pull in cable using a pulling rope. A dynamometer will ensure the maximum pulling tension is not exceeded. Tension on the cable will be reduced using a

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biodegradable water-based lubricant. This process will be repeated for the second cable being installed in the duct. The cables will then be jointed once 2 cable sections (4 cables) have been installed.

44. It is expected that pulling and jointing operations would take approximately 2.5 weeks, typically spread over a three to four week period, with approximately five workers for each jointing bay. These works will then be repeated to install the cables between Jointing Bays 11 and 12.

3.2.5. Reinstatement

45. Following installation and jointing of the cables, the jointing bay, compound, accesses and haul roads will be reinstated with the stored topsoil and subsoil following trenching. If necessary, the subsoil will be 'ripped' prior to placement if compaction had occurred. Topsoil will be spread in such a way as to ensure that it does not become compacted. The topsoil will then be cultivated and reseeded (if required) and suitable hedgerow species replanted during the first appropriate planting season, in accordance with the Landscape Management Pan (EA3-LDC-CNS-REP-IBR-000042). Temporary fencing around any new planting would be removed once reinstatement was established.

46. The Playford Corner SCCS will remain in situ for the duration of the cable works and will then be removed and reinstated.

4. LOCAL COMMUNITY LIAISON

47. EATL is committed to providing clear communication to local residents and will manage public relations with local residents and businesses that will be affected by construction traffic. Proactive community liaison will be maintained, keeping local residents informed of the type and timing of works involved, the transport routes associated with the works, the hours of likely construction traffic movements and key traffic management measures . As outlined in the Code of Construction Practice (EA3-LDC-CNS-REP-IBR-000047), a combination of communication mechanisms such as posters, notices, exhibitions, letters, newsletters, website updates and parish council meetings will be employed to keep local residents and businesses informed.

48. A designated EA THREE Community Liaison Officer (CLO) will manage and respond to any public concerns, queries or complaints in a professional and diligent manner as set out in the Community Liaison and Public Relations Procedure contained within the Code of Construction Practice (EA3-LDC-CNS-REP-IBR-000047). The Complaints Procedure will be publicised and complaints will be directed to the EATL Community Liaison Officer. All enquiries will be logged, investigated and rectifying actions taken when deemed appropriate. Enquiries will be dealt with in an expedient and courteous manner. Details of complaints will be reported to ESC and SCC within 48 hours.

49. The CLO will liaise with Parish Councils, District Councillors and County Councillors to identify any local activities that may overlap with the construction works. EATL's Land Team will also speak to landowners regarding the timing of harvest and agricultural activity.

50. Parish Councils, District Councillors and County Councillors, including Ward Members and Portfolio Holders, in the area and the local liaison group will be contacted (in writing) in advance of the proposed works and ahead of key milestones in order to advise them of the ongoing works. The information provided will include a timetable of works, a schedule of working hours, the extent of the works, and a contact name, address and telephone number in case of complaint or query.

51. As part of the Playford Corner Works Traffic Management Plan (EA3-LDC-CNS-REP-IBR-000039), all transport related to the construction of these works will be registered and issued with a unique vehicle identification code. This will be included on an identification sticker/board that will be placed in a prominent position on the vehicle to enable the site management team and members of the public to identify the vehicle and its association to EA THREE. This will be monitored by the Traffic Co-ordinator (see Section 6 of the TMP (EA3-LDC-CNS-REP-IBR-000039)). This scheme shall be submitted to and approved by SCC. Details of the scheme will also be shared with ESC. SPR construction vehicles will have a defined identification livery so that they are immediately identifiable to construction staff and third parties.

5. BACKGROUND

5.1. Policy Context

52. Travel plans are secured through a policy framework that extends from national through to local level when dealing with new development proposals.

FOR DISCHARGE

53. The National Planning Policy Framework (NPPF)[1] includes a general objective of supporting and promoting sustainable transport and at paragraph 111, requires all developments that will generate significant amounts of movement to provide a travel plan.

54. The Department for Transport Circular 02/2013[2] entitled 'The Strategic Road Network and the Delivery of Sustainable Development' was published in September 2013 and sets out the ways in which the highways authority will engage with communities and developers to deliver sustainable development and, thus, economic growth, whilst safeguarding the primary function and purpose of the strategic road network. The overarching aim of Circular 02/2013 is to manage the impact of development through initiatives that manage down traffic impact and support the promotion of sustainable transport and the development of accessible sites. One of the key tools in achieving this would be the Travel Plan. Circular 02/2013 notes that:

> "*The preparation and implementation of a robust travel plan that promotes use of sustainable transport modes… is an effective means of managing the impact of development on the road network and reducing the need for major transport infrastructure*."

5.2. Guidance

55. There is no current national or local guidance that relates to the specific situation of preparing a Travel Plan for a temporary construction site. Therefore, this Travel Plan has adopted good practice and guidelines published for more typical workplace Travel Plans and applied them to the Playford Corner Construction Works. The following text sets out the salient guidance.

5.2.1. National Travel Plan Guidance

56. The Department for Communities and Local Government published "Travel plans, transport assessments and statements"[3] in March 2014. The guidance supports the NPPF by setting out the general principals to be followed when preparing a Travel Plan, stating that they should be:

- Proportionate to the size and scope of the proposed development to which they relate, and build on existing information wherever possible;
- Established at the earliest practicable stage of a development proposal;
- Be tailored to particular local circumstances (other locally-determined factors and information beyond those which are set out in the guidance may need to be considered, provided there is robust evidence for doing so locally);
- Be brought forward through collaborative ongoing working between the Local Planning Authority/ Transport Authority, transport operators, Rail Network Operators, Highways England where there may be implications for the strategic road network and other relevant bodies. Engaging communities and local businesses in Travel Plans, Transport Assessments and Statements can be beneficial in positively supporting higher levels of walking and cycling (which in turn can encourage greater social inclusion, community cohesion and healthier communities).

5.2.2. Local Travel Plan Guidance

57. SCC recently published "Suffolk Travel Plan Guidance" on their website. The document sets out the specific requirements for preparing a Travel Plan in Suffolk with respect to operational workplaces rather than construction sites.

5.3. Travel Requirements

58. The accesses to the Playford Corner Works is described within the Access Management Plan (EA3-LDC-CNS-REP-IBR-000036, summarised in Table 5.1 and shown on Figure 1.

FOR DISCHARGE

[1] National Planning Policy Framework, July 2021, Ministry of Housing, Communities and Local Government https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf
[2] DfT Circular 02/2013, 10 September 2013, The Strategic Road Network and the Delivery of Sustainable Development, https://www.gov.uk/government/publications/strategic-road-network-and-the-delivery-of-sustainable-development
[3] https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements

Table 5-1 Temporary Infrastructure Access Locations

Access	Address/Location	Easting	Northing	Access ID
To Playford Corner SCCS and Jointing Bay 12	Playford Mount, Ipswich, Suffolk IP6 9DS	621620	248685	AP-X
To Jointing Bay 13 (in Work No. 38)	Holly Lane, Little Bealings, East Suffolk, Suffolk, IP13 6PP	622437	248528	AP-W

59. A key part of the Travel Plan strategy during the main construction phase (i.e. once both Primary CCS are in place) is to permit employees to only travel direct to the following:

- Primary CCS B - located on Paper Mill Lane approximately 1km south-west of Claydon to access Sections 9 to 10 of the cable route (see Figure 3) i.e. Jointing Bays 2 to 5 via Accesses AP-AE to AP-AK;
- Primary CCS E - located on Top Street, approximately 0.5km south from the outskirts of Woodbridge to access Secondary CCS locations D, F, and G and jointing bays 10 to 29 and the landfall i.e. Sections 1 to 7 of the cable route (including Playford Corner Works).

60. However, during the initial construction of the SCCS (and before the installation of the haul road, joint bay and cable pull through) all vehicles will travel directly to site.

61. The PCCS locations will be the focus of deliveries and workers, with efficient means of onwards transport to serve SCCS locations and the jointing bays. In order to avoid unnecessary additional mileage, construction workers will, however, be able to travel directly to the following, as these movements are more suitable than using the Primary CCS as a hub.

- Accesses AP-AC (on Witnesham Road (B1077)) in Section 8 of the cable route to access CCS C and Jointing Bays 8 to 9;
- Access AP-AD (on Henley Road) in Section 8 of the cable route to access Jointing Bays 6 to 7; and
- Access AP-AL in Section 8 of the cable route to reach Jointing Bay 1 and CCS A.

62. The construction works at the SCCS, and jointing bay at Playford Corner Works are likely to require up to 10 staff on average, with a peak workforce of 30 personnel The construction of the CCS is anticipated to commence in Summer 2022, with the works at the jointing bay compound commencing in 2024 and being spread over a period of in the order of 6 months duration. It is expected that a high proportion of the staff employed will either live locally or stay within the local area throughout the working week and travel home at weekends.

63. Construction working hours are limited by the DCO to the following:

Requirement 25 – (1) Construction work for the connection works must only take place between 0700 hours and 1900 hours Monday to Saturday, with no activity on Sundays or bank holidays, except as specified in paragraph (2).

(2) Outside the hours specified in paragraph (1), construction work may be undertaken for essential and non-intrusive activities including but not limited to:

(a) continuous periods of operation that are required as assessed in the environmental statement, such as concrete pouring;

(b) fitting out works associated with the onshore substation(s) comprised within Work No. 67;

(c) delivery to the connection works of abnormal loads that may cause congestion on the local road network;

(d) connection works carried out on the foreshore;

(e) daily start up or shut down;

(f) electrical installation; and

(g) non-destructive testing.

FOR DISCHARGE

64. Further information is provided in Section 5.5 of the CoCP (EA3-OND-CNS-REP-IBR-000047).

65. Chapter 27 Traffic and Transport of the ES for the East Anglia THREE project has assessed the environmental impact of traffic on the routes within the onshore highway study area across a range of effects, namely:

- Pedestrian amenity;
- Severance;
- Road safety; and
- Driver delay.

66. The ES assessment was predicated on a Travel Plan being implemented as embedded mitigation to reduce the numbers of employee vehicle movements through the promotion of car-sharing. The ES, therefore, assessed a level of traffic that would be generated during peak construction, assuming minimum vehicle occupancy of 2.5 employees per vehicle. The assessment assumed all employee trips have been reduced by a factor of 2.5 at entry point to the study area. This approach assumed multi pick up of employees prior to entering the study area, typically by minibus/crew bus or car share syndicates. The overall ratio of 2.5 assumed some essential single occupancy trips (e.g. Health and Safety Inspectors) and some multioccupancy vehicles (typically minibuses with capacity for 12 employees).

67. The ES concluded that the environmental impact of the proposed East Anglia THREE construction traffic would have no residual significant impact. Impacts of negligible to minor levels were predicted on the basis that the use of Travel Plans for each stage of the development would manage daily employee traffic demand and would be in place at the preconstruction stage.

68. Since the preparation of the ES in 2015, lessons learnt from the East Anglia TWO and East Anglia ONE North Offshore Windfarm' Environmental Statements and DCO Examination and following discussions with the Principal Contractors for the Converter Station (Siemens Energy) and cable (NKT) regarding likely car occupancy, it has become clear that a car occupancy of 2.5 is unlikely to be achievable. It was, therefore, agreed with SCC at the Traffic Working Group 3 (15 December 2021), that a target of 1.5 personnel per vehicle would be more appropriate, with a stretch target of 2.5 to also be considered.

69. Following further design works by the selected cable works Principal Contractor (NKT), an updated transport assessment (the scope for which is set out in paragraph 69) has now been carried out and is included here as Appendix 1 East Anglia Playford Corner Works and Clappits Works Traffic and Transport Technical Note (the Traffic and Transport Technical Note). The Traffic and Transport Technical Note provides an overview of the changes to the vehicle numbers associated with the construction of the Playford Corner Works and the Clappits Works and the nearby cable works in order to consider all project-related traffic on the road network to be used for the Playford Corner Works.

70. The Traffic and Transport Technical Note sets out the following:

- A summary of the assessment assumptions and requirements for EA3 as identified in the ES for the DCO submission;
- A comparison of the ES and NKT vehicle movements associated with the Playford Corner and Clappits Works at the sensitive junctions on the highway network that are likely to be used by traffic associated with these works, using a lower car occupancy for the NKT data than presented in the ES, for a robust assessment;
- Junction capacity assessments of the existing layouts of the sensitive junctions forecast to experience an increase of 30 two-way vehicle movements in the evening peak hour associated with the Playford Corner and Clappits Works (Junction 5: Roundabout junction of the A12 and A1214 and Junction 6: Roundabout junction of the A12 and Newbourne Road). The modelling shows the additional vehicle movements do not have a significant impact on the operation of the junctions compared to the base year 2024 plus committed development scenario; and
- An update of road safety analysis at key junctions and routes the highway network that are likely to be used by traffic associated with the Playford Corner and Clappits Works. This indicates there has been a general improvement in road safety since the submission of the DCO application, with no deficiency in the layout or condition of the junctions reviewed.

71. The maximum daily and evening peak vehicle movements presented in Appendix 1 are summarised in Table 5-2. This is based on a car occupancy of 1.5 (as discussed in paragraph 67).

FOR DISCHARGE

Table 5-2 Confirmed Maximum Figures

	Employees				HGV Movements	
	Number		Vehicle Movements			
	Daily	PM Peak	Daily	PM Peak	Daily	PM Peak
Playford Corner Works and also Clappits Works including relevant cable installation works (Sections 8 to 11)	60	60	80	40	40	4

72. Table 5-2 details that there could be a peak of 30 employees per day associated with the construction of the Playford Corner Works. With the application of an employee to vehicle ratio of 1.5, the number of daily employee vehicle arrivals would be 20 for these works. As noted in paragraph 69, it has been confirmed that this number of vehicles, when combined with those associated with the nearby cable works and including HGVs would not result in capacity issues at the identified sensitive junctions (Junction 5: Roundabout junction of the A12 and A1214 and Junction 6: Roundabout junction of the A12 and Newbourne Road).These levels are all within the estimates used in the ES.

73. The commitments made in this Travel Plan are designed to enable the 1.5 ratio to be achieved and this ratio is, therefore, a principal target of the Travel Plan (see Section 8.1) with a stretch target of 2.5 employees per vehicle. A quarterly monitoring report will be produced for issue to ESC and SCC, as set out in Section 10.

74. The HGV and abnormal loads that will also be required to visit site are described in the Traffic and Transport Technical Note included as Appendix 1.

6. ACCESS BY SUSTAINABLE TRAVEL MODES

6.1. Walking

75. The Chartered Institution of Highways and Transportation (CIHT) document entitled 'Guidelines for Providing for Journeys on Foot' considers 2km as a 'preferred maximum' distance for commuting on foot.

76. Playford Corner Works are in a remote rural location, reached by derestricted roads with a 60mph speed limit. The 2km catchment area from the SCCS access point (Access AP-X) includes the southern part of Grundisburgh and parts of Great Bealings, Little Bealings and Playford, however, existing walking provision is minimal, with no roadside footpaths. Access AP-W to Jointing Bay 13 is also located on a derestricted road with a 60mph speed limit, with no walking provision. Villages within 2km of this access comprise Grundisburgh, Great Bealings, Little Bealings, Beacon Hill and Playford.

77. The PRoW network in the vicinity has been considered and the two accesses are less than 1km from the Fynn Valley Walk (a National Trail), however the network does not link to any nearby settlements of any size that would facilitate a journey on foot of less than 2km.

78. It is, therefore, considered that these access locations are not conducive to pedestrian movements.

6.2. Cycling

79. Cycling is generally an acceptable mode of travel for journeys up to 5km . Figure 2 illustrates the potential catchment area of 5km radius for workers to cycle to the permitted access point.

80. There are no formal cycling facilities in the vicinity of Playford Corner Works, however a 5km radius includes the villages of Grundisburgh, Great Bealings, Little Bealings and Playford and parts of Woodbridge, Martlesham, Martlesham Heath, Kesgrave and Ipswich.

FOR DISCHARGE

6.3. Public Transport — Bus

81. Route 59 provided by FirstBus runs along Boot Street and past Access AP-X (and close to Access AP-W), however, this is a daily service running into Ipswich from Little Bealings/Great Bealings at around 9am and returning at lunchtime and would not therefore provide a service that could be used to access the Works.

6.4. Public Transport – Train

82. The closest railway station to Playford Corner is located at Woodbridge some 5.9km away. The station is operated by Abellio Greater Anglia running between Ipswich and Lowestoft. Currently, there are services running approximately every hour stopping at Woodbridge station between 06:34 and 22:31 Monday to Friday. In order for employees to travel between the railway station and Playford Corner, employees would need to make a linked trip. The distance would discount walking as a viable option, and there are currently no buses, which would make a linked cycle trip the only realistic option to access Playford Corner by train.

6.5. Summary

83. A review of the transport network within the project study area has concluded that the accessibility of the development will enable only a few journeys to be made by cycle, bus and train to the construction site from across Ipswich and Woodbridge as well as places further afield. Recognising that sustainable modes will have a limited share of workforce travel, it is proposed that the travel measures set out in Section 9 of this Travel Plan be implemented to minimise vehicle movements further.

7. ADMINISTRATION

7.1. Introduction

84. This Travel Plan forms a framework for further detailed initiatives to be drawn up between EATL and contractors/subcontractors, once appointed. This framework sets out the objectives and principles for achieving sustainable travel and provides details of the targets, responsibilities for implementation and monitoring and review requirements. This framework will be incorporated into agreements drawn up between EATL and the Principal Contractor.

7.2. Travel Plan Co-ordinator

85. Management of the Travel Plan will be achieved through the identification of a suitable person as the Travel Plan Co-ordinator. The Travel Plan Co-ordinator will provide a key role in delivering a successful Travel Plan. The Travel Plan Co-ordinator role will be undertaken by a senior member of the Contractor's site management team and will be based on site (i.e. the cable route site as a whole) for the duration of the construction works. The name, contact details and working hours of the appointed Travel Plan Co-ordinator will be provided to ESC and SCC Highways Authority prior to commencement of the works. Any changes in Travel Plan Co-ordinator will be notified to ESC and SCC. The Travel Plan Co-ordinator will report to a senior member of the Principal Contractor's construction team.

86. The Travel Plan Co-ordinator role will be established prior to the occupation of the site and will act as the fulcrum for the development of the Travel Plan measures and the day to day operation of the Plan. Once appointed, the Travel Plan Co-ordinator will act as the main contact for the Travel Plan for both construction staff and SCC Highways Authority and will be responsible for implementing measures and monitoring the effects of implementation. The Travel Plan Co-ordinator will regularly attend on site progress meetings in order to influence and engage with construction staff to ensure successful implementation of the Travel Plan.

87. The Travel Plan Co-ordinator will:

- Set up and maintain a filing system for all correspondence relating to the Travel Plan;
- Oversee the implementation of the Travel Plan including the monitoring programme, reporting and any corrective measures required to meet the targets, which will be identified through discussion with relevant local authorities;
- Oversee the necessary data collection exercises and monitoring programme and report to the relevant authorities;
- Identify potential breaches and ensure corrective procedure is followed; and
- Advise on alternative / corrective measures required to meet targets.

88. The Travel Plan Co-ordinator will be responsible for setting up and launching the Travel Plan in accordance with the schedule set out in Table7-1.

FOR DISCHARGE

Table 7-1 Travel Plan Administration Schedule:

Timescale	Action
Two months before construction starts	Appoint Travel Plan Co-ordinator Exchange contact details with relevant officers (SCC) Collect details of local accommodation Arrange minibus/crew bus provision Research travel information
One month before construction starts	Obtain up-to-date public transport timetables and literature Review walking and cycling facilities Prepare and issue Travel Plan Information Packs for all construction staff Set-up a car sharing register and establish car share syndicates Ensure sufficient cycle parking and associated facilities are available at site. Produce a staff notice board specific to the site with useful information regarding travel choice and include information such as details of car share schemes, cycle routes, bus and train times, etc. Implement mechanisms for providing guaranteed lift home.
Four weeks after construction starts	Begin spot checks to monitor number of staff using the minibus/crew bus pick-up service and average car occupancy
Every month after construction starts	Monitor travel patterns through data acquired from minibus/crew bus drivers, car occupancy and car park utilisation. Data will be collected with respect to management of shift patterns to demonstrate that the assumptions in Traffic and Transport Technical Note remain valid. Undertake Travel Plan audit and modify where appropriate Liaise with relevant officers (SCC) and other groups where appropriate Issue a Travel Plan Information Pack and undertake site induction for new starters Maintain and update the information stored in the car sharing register Monitor cycling provision
Every three months after construction starts	Produce monitoring report

7.3. Monitoring by the Highways Authority

89. The Travel Plan Co-Ordinator will liaise with SCC Highways Authority regarding monitoring and enforcement of the Travel Plan measures by them.

7.4. Funding

90. Appropriate funding will be allocated by EATL at the start of the Travel Plan process to cover the costs involved in administering the Travel Plan over the construction period. This will be incorporated into any tender agreement.

91. The funding will cover all costs relating to the Travel Plan Co-ordinator, implementation of measures and initiatives, marketing of the Travel Plan and monitoring.

92. Funding will also cover the costs of the SCC reviewing officer, via the Planning Performance Agreement.

8. TARGETS

93. The setting of targets is essential to ensure that the objectives of this Travel Plan are met. Targets are therefore linked to the objectives and are SMART (Specific, Measurable, Achievable, Realistic and Time-related). Targets will be measurable through the use

of indicators, which represent the results of monitoring. Indicators may also be used to highlight the progress of the Travel Plan without necessarily having a linked target.

94. The two types of target are:

- Aims, which consider modal share; and
- Actions which are non-quantifiable and represent milestones.

8.1. Aims – Modal Share Targets

95. Table 8-1 shows the three modal targets which will be maintained and measured throughout the life of the project. The Travel Plan Co-ordinator will be responsible for collating and reporting the data associated with these. Details of the data to be collected, the monitoring plan and reporting schedule are provided in Section 10.1 of this Travel Plan.

Table 8-1 Travel Plan Targets, Indicators and Monitoring Methods

Target Type	Target	Indicator	Monitoring Method
Average Vehicle Occupancy	Minimum of 1.5 persons and where possible to meet a stretch target of 2.5 employees per vehicle	Number of occupants Number of vehicles	Completion of sign in sheets Spot check counts
Percentage of trips made by minibus/crew bus pick-up service	Minimum of 35%	Number of minibus/crew bus trips	Daily driver record
Daily Worker Vehicle Movements (Two Way) including relevant cable installation works (Sections 8 to 11)	Maximum of 80[4]	Number of vehicles	Completion of sign in sheets

8.2. Actions – Milestone Targets

96. The Travel Plan Co-ordinator will be responsible for implementing measures throughout the construction works, which will be reviewed monthly, by the Travel Plan Co-ordinator, following the results of monitoring to identify if any changes are required, for example to the minibus/crew bus service in order to maximise its use by workers.

97. The initial milestone target would be to ensure that all new staff receive a Travel Plan Information Pack. Details of what is to be included in these packs are provided in Section 9.1 of this Travel Plan. Further milestone targets may include providing additional cycle parking, subject to demand.

9. TRAVEL MEASURES

98. Implementation of this Travel Plan will require consultation with construction workers as the project progresses to establish which measures are the most effective, prove difficult to implement or may be unpopular. This will be the responsibility of the Travel Plan Co-ordinator.

99. The following sections in this Travel Plan outline the measures to be promoted by the Travel Plan Co-ordinator. They are set out under the following general headings:

- Travel awareness;
- Travel database;
- Public transport information;
- Minibus/crew bus service;

[4] In accordance with Table 5-2 of this document

FOR DISCHARGE

- Cycling;
- Car sharing scheme;
- Car parking management;
- Managing worker movements;
- Welfare and catering facilities;
- Road safety;
- Guaranteed lift home; and
- Sustainable travel by port workers.

9.1. Travel Awareness

100. Good accurate information on the range of services and travel initiatives available is a critical element of a successful Travel Plan.

101. The Travel Plan Co-ordinator will make new employees and sub-contractors aware of the existence of the Travel Plan by providing them with an information leaflet summarising the Travel Plan as part of a Travel Plan Information Pack, which will be issued to all employees on appointment of their position. Any parking management policies will be explained to members of staff during the recruitment process.

102. The Travel Plan Information Pack will include, though not exclusively, the following:

- A map showing the location of the CCSs and permitted accesses in relation to the local area, highlighting the nearby bus stops and associated times of bus services using these stops.
- Details of services that stop at the railway stations and bus stations, highlighting the minibus/crew bus pick-up service;
- Information relating to traffic-related environmental concerns, congestion problems and car sharing to raise awareness;
- Details of local accommodation available;
- Details of car sharing scheme;
- Details of minibus/crew bus collection points and frequencies;
- Details and maps of local cycle and walking routes
- Details of provisions made for cyclists;
- Rules for car parking; and
- Details of the “guaranteed ride home scheme”.

103. The Travel Plan Co-ordinator will ensure that any amendments to the Travel Plan or any relevant information are passed on to members of staff in the form of leaflets.

104. Information will be provided to new staff about the range of facilities available on site and this will be posted on noticeboards at the CCS.

9.2. Travel Database

105. The Travel Plan Co-ordinator will collate data on a monthly basis, having been recorded by drivers of minibuses/crew buses and through spot checks of vehicle occupancy, to calculate the proportions of staff travelling by minibus/crew bus and average car occupancy. The information recorded will be put into a database to monitor the monthly figures and identify any trends that may lead to targets being missed.

106. Information contained within the database will inform the review process which will be carried out in conjunction with ESC and SCC Highways Authority.

9.3. Public Transport Information

107. The Travel Plan Co-ordinator will encourage use of public transport as a mode of travel to work by implementing the following initiatives.

- Provide up-to-date public transport information, including route maps and timetables, with the Travel Plan Information Pack and on staff notice-boards;
- Provide details of local taxi companies;
- Provide regular minibus/crew bus collection and drop-off at Woodbridge rail station (during initial construction of the commencement works and before the main cable route construction phase);
- Provide secure lockers to allow tools and equipment to remain on-site;

FOR DISCHARGE

- Liaise regularly with local public transport operators to ensure that information remains valid;
- Liaise with local public transport operators to attempt to negotiate a discount for site workers; and
- Provide details of the websites and telephone advice services to enable staff to obtain details on their individual journey requirements, including the Transport Direct journey planner and Traveline (Tel 0871 200 2233).

9.4. Minibus/Crew Bus Service

108. The contractor will provide a minibus/crew bus collection service that will transport construction workers from pre-arranged points to the CCS and permitted access locations. The collection points will be determined from the location of local accommodation and will primarily cover Ipswich and Woodbridge, including key destinations such as Ipswich bus and rail stations and key bus stops in proximity to the CCS. The minibus/crew bus pick up locations will be further developed when details of locations of accommodation of workers are available.

109. Pick up points, with safe off-road parking, will be established near the A14 north and south, and the A12 north and south, to intercept longer distance journeys. All pick up points would be carefully selected by the Traffic Co-ordinator and will be chosen so as to not induce trips through the sensitive junctions identified in the ES, namely:

- Junction 1: Roundabout junction of the A14 and B1113;
- Junction 5: Roundabout junction of the A12 and A1214;
- Junction 6, Roundabout junction of the A12 and Newbourne Road;
- Junction 11: Roundabout junction of the A12 and B1438; and
- Junction 12, Roundabout junction of the A14 and A12 (south).

110. Details of these collection points will be provided within Travel Plan Information Packs for all staff. The locations will be reviewed, based on demand, and could result in wider coverage in order to meet demand.

111. In addition, during the main construction phase, those workers arriving at Primary CCS B will be transported to Secondary CCS C and Jointing Bays 1 to 3 those arriving at Primary CCS E will be transported to relevant Secondary CCSs at D, F and G and Jointing Bays 10 to 29 and also the landfall via minibus/crew bus using the public road connections. This will reduce the number of vehicle movements travelling on the local road network. Mini-buses will also be allocated to service the converter station work area.

9.5. Cycling

112. The Travel Plan Co-ordinator will encourage cycling as an alternative mode of travel to work by implementing the following initiatives:

- Provide secure cycle parking for construction workers at CCS A, B, C and E;
- Provide changing facilities and secure lockers to allow tools and equipment to remain on-site;
- Provide a communal toolbox, to include puncture repair kit, cycle tools, oil, etc;
- Promote the availability of cycling information, including route maps and useful tips and guidance, from, for example, the Sustrans website (https://www.sustrans.org.uk/our-blog/get-active/?location=null&theme=null);
- Promote implementing a Bicycle Users Group to help encourage non-confident or new cyclists;
- Investigate the potential for staff to hire bikes on a short-term basis for those staying locally;
- Establish contact with the senior cycling officer of ESC to ensure that up-to-date information is available regarding cycle routes and other facilities for cyclists in the vicinity of the site.

9.6. Car Sharing Scheme

113. The majority of construction workers will work in teams and therefore, if they require temporary accommodation in the area, are likely to reside in the same location. This will naturally lead to car sharing as frequently occurs on any construction project. However, for those who do not benefit from the above circumstances, the Travel Plan Co-ordinator will set up a car sharing scheme / register. Staff will be consulted by the Travel Plan Co-ordinator to allow potential car sharers to register an interest and provide details of their journey to and from work. The Travel Plan Co-ordinator will then identify suitable matches for staff that may be able to share their journeys to and from work.

9.7. Car Parking Management

114. Car parking will be provided on site in accordance with the Suffolk Guidance for Parking, Technical Guidance, 2019, as far as is relevant to construction. Parking for staff, visitors and minibuses/crew buses will all be contained within the CCS and jointing bay compound.

FOR DISCHARGE

The management of car parking associated with the development will be considered alongside other initiatives to make efficient use of the construction site space. This will ensure sufficient space is available for visitors.

115. A key mechanism to ensure compliance with the target vehicle movements will be to restrict parking spaces. Total parking provision for employees would be in line with the employee vehicle trips (i.e. one space per arrival). The Principal Contractor will assess their workforce and would optimise the number of single occupancy, car share and minibus/crew bus spaces to accord with the benchmark targets. A permit system would be adopted to allocate these spaces and the car parking spaces will be clearly marked.

116. Preferential parking for registered car sharers and minibus/crew bus drivers would be provided on site. Single occupancy parking would only be permitted if authorised by pre-booking.

117. It is currently anticipated that the electrical supplies to the Primary CCS will be by diesel generators, which would not be appropriate for the provision of electric vehicle charging points. Should mains supply electricity be available, then electric vehicle charging points will be installed. Provision will be made at the PCCS for emergency charging to avoid electric vehicles becoming stranded on site. No electric vehicle charging facilities are proposed at the SCCS.

118. All employees will be required to park in designated areas and display their parking permit to prevent unauthorised parking. Employees not parking their vehicle in designated areas or not displaying their permit will be subject to an enforcement action (see Section 10.3).

119. Access to Playford Corner Works would be prohibited for those on foot or cycle, unless a prior arrangement had been made. This is a measure aimed at discouraging employees travelling in single occupancy cars, and parking locally and walking/cycling to the sites.

120. The demand and supply of the car parking area will also be monitored on a monthly basis. Any additional parking requirements would be identified in advance by prior notification and provision made where possible. Use of the local Park & Ride facilities at Martlesham will be discussed with SCC. Final details will be approved prior to implementing this solution during construction.

121. To support the Travel Plan, a combination of the following measures will be implemented in order to minimise travel by car:

- Effective reduction in number of car parking spaces compared to number of employees at each major stage of the construction programme;
- Reallocation of spaces for cycle storage (as required); and
- Provide priority spaces for minibus/crew bus use.

9.8. Management of Worker Movements

122. Details of the updated transport assessment and the maximum daily construction worker vehicle movements are provided in the Traffic and Transport Technical Note in Appendix 1 of this Travel Plan. The majority of worker movements will take place in the morning, as workers arrive and in the evenings as workers leave site. Peak hours on the network are considered to be 08:00-09:00 and 17:00-18:00. As the majority of EA THREE construction workers will travel to site before the morning peak stats at 08.00, the updated transport assessment focuses on a PM peak hour assessment. The Traffic and Transport Technical Note gives details of the maximum peak hour construction vehicle movements (HGV and construction workers). As noted in paragraph 69, the Traffic and Transport Technical Note confirmed that the anticipated maximum number of vehicles (both employee and HGV) will not result in either capacity issues at the identified sensitive junction (the Claydon Interchange) nor will additional traffic management measures be required with respect to road safety. No additional traffic management measures are, therefore, considered necessary.

9.9. Welfare and Catering Facilities

123. To avoid the need for employees to drive off site during the working day for lunch, welfare facilities will be provided at the CCS during periods of use, this will include an area for employees to prepare and eat lunch.

9.10. Road Safety

124. A 'near miss' reporting system for all highways incidents will be established by the Travel Plan Co-ordinator. The Travel Plan Co-ordinator will ensure that all accidents and near misses are recorded within this system and that employees are reminded during inductions to report all issues through the near miss system. Any accidents or near misses will be recorded, investigated, and reported to transport stakeholders by the Travel Plan Co-ordinator and or HSE Co-ordinator. Near-misses will be reported within the quarterly

FOR DISCHARGE

monitoring report that will be issued to SCC and ESC (see Section 10.1). Near-misses will be reported within the quarterly monitoring report that will be issued to SCC and ESC (see Section 10.1).

125. The Travel Plan Co-ordinator will retain records of all incidents and submit to SCC Highways Authority within 48 hours. If emerging issues are identified, the Travel Plan Co-ordinator will initiate discussions with highway stakeholders to identify potential opportunities for improvement.

9.11. Guaranteed Lift Home

The Travel Plan Co-ordinator will set up and manage a system to ensure that anyone who did not travel in their own car has a guaranteed lift home in the event of an unforeseen problem e.g. picking up a sick child from school. This aims to encourage the use of car sharing/minibuses/crew buses , cycling, walking, and public transport by giving users the security of knowing they can return home quickly in an emergency.

9.12. Sustainable Travel by Port Workers

126. Travel Plan measures relating to movements of port workers associated with the Marshalling and Base Ports will be detailed within a relevant Port Travel Plan(s) which will be provided under separate cover.

9.13. Summary of Measures

9.13.1. Definite Measures

Table 9-1 Measures to be implemented

Measures to be Implemented	
Travel awareness	Travel Plan Information Pack
Travel database	Monitoring data collated on a monthly basis
Public transport information	Staff notice boards within communal areas Travel Plan Information Pack
Minibus/crew bus service	From pre-arranged points e.g. bus and rail stations
Cycling	Secure cycle parking Changing area and lockers Communal toolbox
Car sharing scheme	Manage and encourage use of car share register
Car parking management	Restriction of parking spaces with permit system Monitoring of overspill parking.
Management of worker movements	Shift patterns would be managed so as to adhere to worker movements assessed in the Traffic and Transport Technical Note (Appendix 1).
Welfare and catering facilities	Facilities to be provided on site to minimise off-site trips
Road safety	An accident and near miss reporting system
Guaranteed lift home	To ensure that anyone who did not travel in their own car has the security of knowing they can return home quickly in an emergency.

9.13.2. Potential Measures

Table 9-2 Measures to be Investigated

Measures to be Investigated	
Car Parking	Level of parking to be reviewed during construction programme
	Reallocate spaces for cycling
Public Transport	Potential for additional or revised minibus/crew bus pick-up points following feedback from monitoring and staff
Cycling	Monitor cycle parking use and increase provision if necessary Investigate potential for bike hire

10. MONITORING AND ENFORCEMENT

10.1. Monitoring

128. The Travel Plan Co-ordinator will monitor travel on a monthly basis throughout the construction period and will report to ESC and SCC every three months (within 4 weeks of the end of that reporting period). The monitoring of the Travel Plan is important for the following reasons:

- It will demonstrate to ESC and SCC that the aims and objectives of the Travel Plan are being achieved;
- It justifies the commitment of the Travel Plan Co-ordinator and of other resources;
- It maintains support for the Travel Plan by reporting successes; and
- It identifies any measures that are not working or problems with the approach of the Travel Plan.

129. Surveys and on-site records will be used to monitor travel to and from the site. The surveys will be used to monitor the number of staff using the minibus/crew bus service, car share syndicates, car park utilisation and the average car occupancy, while spot checks will identify any deficiencies in cycle parking provision. Cycling trips would be monitored simultaneously with car park occupancy and those entering the site would be cross referenced to their journey origin in order to discourage parking locally and then cycling into site. The results will then be compared with the mode share targets identified in Section 8 of this Travel Plan. In addition, feedback would be sought from the workforce during site briefings to gain an understanding of travel habits and to seek suggestions for improving the Travel Plan.

130. On arrival to site each day, workers will be required to sign in. Provision will be made on the sign in sheet for workers to record their mode of transport taken that day. This will provide a large amount of important data for the Travel Plan Co-ordinator to review and evaluate which measures of the Travel Plan are successful and where amendments may need to be made.

131. The local highway network adjoining each site access will regularly be observed by the Travel Plan Co-ordinator to check for evidence of overspill parking. Minibus/crew bus pick up points will also be checked to ensure personnel are using the designated parking areas.

132. The Travel Plan Co-ordinator will develop the monitoring programme in conjunction with SCC Highways Authority to ensure that the monitoring procedures are appropriate. The Travel Plan Co-ordinator will maintain a monitoring table of progress to key Travel Plan targets based on the results of the monitoring travel surveys.

133. The Travel Plan Co-ordinator will produce a quarterly report. As a minimum it would detail:

- Results from the car park surveys and staff briefings and any relevant supplementary data;
- Details of any identified Travel Plan breaches and corrective action; and
- Details of complaints and follow up actions.

134. This Travel Plan is a dynamic, living document that will be updated as required following review of monitoring outputs, to ensure that the aims and objectives represent the up-to-date situation in respect of travel and access. Through monitoring, should it become

FOR DISCHARGE

apparent that the aims of the Travel Plan are not being achieved through the measures identified in this document, then additional measures will be identified, discussed with SCC Highways Authority and implemented where possible.

10.2. Review Strategy

135. The Travel Plan Co-ordinator will produce a quarterly monitoring report. A typical structure for a monitoring report would be as follows:

- Introduction and Background – this will provide detail with regards to the types of works being undertaken and number of construction workers;
- Results of Surveys and Monitoring – the Travel Plan Co-ordinator will collate the results of surveys, staff briefings and monitoring that have been undertaken. Where appropriate, the results of the surveys undertaken will be compared to the targets defined in the Travel Plan;
- Breaches and Complaints– setting out details of any identified Travel Plan breaches and complaints received (if any) and corrective or follow up actions;
- Achievements – this will include the work undertaken over the previous period with evidence and examples;
- Specific Measures – this will detail how all measures from the Travel Plan have been implemented;
- Summary – this will detail whether the Travel Plan is on track to meet its targets and if not, why not; and
- Future Plan – this will detail the Travel Plan for the next period to include any specific outcomes or desired results with any additional measures that are to be included to remediate action.

136. The monitoring reports will provide an evidence base to identify the need to undertake corrective action. The contents of the monitoring reports and the system for their review and discussion will be agreed with ESC and SCC during the development of the Travel Plan by the Travel Plan Co-ordinator, prior to commencement on site. ESC and SCC would, in any case, be informed of any complaints within 48 hours.

10.3. Enforcement

10.3.1. Introduction

137. The consequences of not meeting the Travel Plan targets would be an increase in employee traffic on the highway network, impacting on sensitive junctions, potentially leading to increases in driver delay and other environmental effects. It is therefore essential that the Travel Plan Co-ordinator can quickly react to any breaches and implement corrective processes. This section therefore provides a summary of the mechanisms that would ensure that the Travel Plan is effectively enforced.

10.3.2. Potential Breaches

138. To ensure that the aims of the Travel Plan can be effectively enforced it is important to define what would constitute a breach. The Travel Plan therefore considers that the following would constitute a breach of the Travel Plan whereby corrective measures would be required:

1. Exceeding the employee vehicle trip targets (see Section 8.1);
2. Construction workers overspill parking on the public highway; and
3. Construction traffic being driven inappropriately, e.g. speeding.

10.3.3. Corrective Process

139. On receipt of a report of a potential breach, the Travel Plan Co-ordinator would investigate the circumstances and compile a report for ESC and SCC within seven working days. The report would outline the outcome of the investigation and what corrective action (if necessary) had been implemented. If the breach is found to be material, the following three stage correction process will be followed:

- Stage one – SCC confirms a breach and requests the Travel Plan Co-ordinator to review the data and concerns. SCC and the Travel Plan Co-ordinator would then agree the extent of the breach of controls and agree action. This is likely to be a contractor warning at this stage;
- Stage two – If a further material breach is identified the contractor would be given a further warning and required to involve individuals / subcontractors / suppliers to produce an action plan to outline how the issue would be rectified and any additional mitigation measures proposed. The action plan would identify a strategy with a duration of not more than seven working days to correct the breach.
- Stage three – Should further breaches still occur, the contractor would be required to remove the offender from site and the contractor/supplier would receive a formal warning. Any continued breaches by individuals of the supplier/contractor may be dealt with by the formal dispute procedures of the contract.

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140. Failure to follow the performance standards (including the correction process) or continued breaches would be addressed by contractual measures between EATL and the contractor.

141. Individual employee breaches will be addressed through UK employment law whereby the three-stage process outlined above will form the basis for disciplinary proceedings.

142. Further corrective actions would be discussed and agreed with ESC and SCC as necessary and appropriate. For example, if it is agreed that notwithstanding implementation of the corrective process above targets cannot be met for the existing works programme, alternative options will be investigated, for example the re-programming of the works.

11. REFERENCES

Suffolk County Council, (undated) *Suffolk Travel Plan Guidance*, https://www.suffolk.gov.uk/planning-waste-and-environment/planning-and-development-advice/travel-plans/

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APPENDIX 1 EAST ANGLIA THREE PLAYFORD CORNER WORKS AND CLAPPITS WORKS TRAFFIC AND TRANSPORT TECHNICAL NOTE

FOR DISCHARGE

EAST ANGLIA THREE PLAYFORD CORNER WORKS AND CLAPPITS WORKS

Traffic and Transport Technical Note

Prepared for: **ScottishPower Renewables**

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CONTENTS

DOCUMENT REFERENCES

TABLES

APPENDICES

1.0 Introduction

1.1 Background

SLR Consulting Ltd. (SLR) has been commissioned by ScottishPower Renewables (SPR) to undertake a review and analysis of the anticipated vehicle movements associated with the Playford Corner Works and the Clappits Works (and relevant onshore cable installation works Sections 1 - 7) stages of the East Anglia THREE Offshore Windfarm (EA THREE) construction works as per the Development Consent Order (DCO) dated 7th August 2017.

The forecast vehicle movements (personnel and Heavy Goods Vehicles (HGV)) associated with the construction of EA THREE onshore works were included in Chapter 27 'Traffic and Transport' of the Environmental Statement (ES), which was prepared by Royal HaskoningDHV in 2015 in support of the DCO submission (Document Reference – 6.1.27).

The vehicle movements identified in the ES were estimates based on a set of reasoned assumptions, professional experience and using previous project experience; however, following their appointment NKT, the Principal Contractor for the EA THREE cable route installation works has now confirmed the vehicle movements for the construction programme. These revised vehicle movements form the basis of the analysis presented in this Technical Note.

1.2 Purpose of the Report

The objective of this Technical Note is to provide Suffolk County Council (SCC) with an overview of the confirmed vehicle numbers associated with the Playford Corner Works and Clappits Works and the relevant cable installation works. It includes an assessment of the likely impacts at the required locations on the highway network in order to inform the discharge of DCO Requirements 16 and 27 with respect to the provision of an Access Management Plan, Traffic Management Plan and Travel Plan for each stage of the onshore works.

This Technical Note sets out the following:

- A summary of the assessment assumptions and requirements for EA THREE as identified in the ES;
- A comparison of the ES and NKT vehicle movements associated with the Playford Corner Works and the Clappits Works at the sensitive junctions on the highway network that are likely to be used by traffic associated with these works. This uses a lower vehicle occupancy for the NKT data than presented in the ES;
- A review of the likely impacts at the sensitive junctions on the highway network that are likely to be used by traffic associated with the Playford Corner Works and Clappits Works;
- A junction capacity assessment at the sensitive junctions forecast to experience an increase of 30 or more two-way vehicle movements in the evening peak hour associated with the Playford Corner Works and Clappits Works (Junction 5: Roundabout junction of the A12 and A1214 and Junction 6: Roundabout junction of the A12 and Newbourne Road); and
- An update of road safety analysis at key junctions on the highway network that are likely to be used by traffic associated with the Playford Corner Works and Clappits Works.

2.0 DCO Submission Playford Corner and Clappits Works Traffic Data

2.1 Assessment Assumptions

A brief summary of the assumptions used in the ES to assess the impact of all vehicle movements associated with the construction of EA THREE is set out as follows:

- The nature of construction works typically requires that employees work longer hours in the summer and shorter hours in the winter to take advantage of the available daylight. Employees would arrive prior to the morning network peak hour (08:00 to 09:00) throughout the year and therefore there is no requirement for assessment during this period). There is the possibility that there would be an overlap between construction employees departing the site at the end of the day and the network evening peak hour (17:00 to 18:00 observed from traffic counts), i.e. when the daytime construction shift finishes at the same time as the evening network peak. In this situation EA THREE employees would be departing the site and HGVs would be arriving at the Primary Construction Consolidation Sites (PCCSs).
- As a worst case it was assumed that all EA THREE employee trips would overlap with the evening network peak hour, recognising this scenario is only likely to occur during the months of November, December, January and February, when the sunsets at around 5pm, which would restrict (in most cases) construction working hours;
- The delivery of materials and plant to the Primary CCSs (Top Street) would be spread over a ten hour period, the onward deliveries to Secondary CCS (Playford Corner or Clappits) or points of access would be scheduled to avoid the highway network peak hours.
- A car occupancy of 2.5 employees per vehicle; and
- To develop a worst case impact scenario on the highway network, the peak traffic demand for each section was added together to create a theoretical 'in-combination worst case' week whereby the peak construction activity for all sections would occur concurrently. This results in the combined traffic flows on the 'A' class road network being over-estimated.

2.2 Assessment Requirements

In order to assess if there was any potential for significant impact the evening peak (17:00 to 18:00) on the highway network, the ES assumed that the EA THREE construction traffic was assigned to the junctions across the agreed study area.

SCC identified 11 junctions across the agreed study area as potentially being susceptible to increases in traffic flow.

In Chapter 27 'Traffic and Transport' it was concluded that the forecast vehicle movements associated with the construction of EA THREE (total construction works) were of a magnitude that could potentially lead to significant impacts at the following three sensitive junctions:

- Junction 1: Roundabout junction of the A14 and B1113 (Claydon Interchange);
- Junction 5: Roundabout junction of the A12 and A1214; and
- Junction 11: Roundabout junction of the A12 and B1438.

In the Outline Construction Traffic Management Plan (OCTMP), prepared for the EA THREE DCO application, the list of sensitive junctions where the forecast vehicle movements identified as having the potential to lead to significant impacts was as follows:

- Junction 5: Roundabout junction of the A12 and A1214;
- Junction 6: Roundabout junction of the A12 and Newbourne Road;
- Junction 8: Priority junction of the B1079 and Manor Road; and
- Junction 11: Roundabout junction of the A12 and B1438.

Capacity assessments were not undertaken at any of the junctions listed above (in Chapter 27 or the OCTMP) as part of the DCO application; however, the following strategy was proposed:

- The junctions identified as having the potential to lead to significant impacts would be subject to detailed analysis through the development of the Traffic Management Plan, post-consent, when a contractor has been appointed and can inform outcomes; and
- Further analysis would seek to quantify the potential significance of these impacts and the scope of mitigation measures. Potential mitigation measures would focus on enhanced travel planning and restricting peak hour movements rather than physical junction improvements.

The maximum vehicle movements in the evening peak hour at the sensitive junctions that would be used by the traffic associated with the Playford Corner Works and the Clappits Works and relevant cable installation works (sections 5, 6, 8 and 11) as identified in *Table 27.17 Peak Hour Traffic Flows through Sensitive Junctions* of Chapter 27 'Traffic and Transport', are set out in **Table 2-1**

Table 2-1: Forecast Evening Peak (17:00 – 18:00) Junction Impacts (ES)

Junction		Total EA THREE		
		Cars/LGVs	HGVs	Total
5	A12/A1214	88	22	110
6	A12/Newbourne Road	48	22	70
8	B1079/Manor Road	15	0	15
11	A12/B1438	134	22	156

3.0 Confirmed Playford Corner Works and Clappits Works Traffic Data

3.1 Introduction

In the context of the strategy set out in **Section 2.2,** and using the assessment assumptions, as summarised in **Section 2.1** (with the exception of car occupancy, as set out in **Section 3.2** below), the following text sets out the confirmed vehicle movements for the Playford Corner Works and Clappits Works and relevant cable installation works anticipated by NKT. The assessment is based on worst case during the construction programme, which is during the delivery of material for the construction of haul roads.

3.2 Trip Generation

The revised maximum (daily and evening peak) number of employee, employee vehicle movements and HGV movements associated with the construction of the Playford Corner Works and Clappits Works and the relevant cable installation works (i.e. Sections 1 to 7 of the cable route – see Figure 1 of the Outline Access Management Plan) are set out in **Table 3-1.**

This is based on a car occupancy of 1.5, which has been identified from lessons learnt from the EA TWO / EA ONE North ES and Examination, advice from SCC and through discussions with NKT, who have suggested that a 2.5 car occupancy is unlikely to be achievable.

Table 3-1: EA THREE Confirmed Maximum Figures (NKT)

	Employees				HGV Movements	
	Number		Vehicle Movements			
	Daily	PM Peak	Daily	PM Peak	Daily	PM Peak
Playford Corner and Clappits	**60**	**60**	**80**	**40**	**40**	**4**

3.3 Trip Distribution

The distribution for employee traffic and HGVs, as identified in the ES, is shown in **Table 3-2.**

Table 3-2: Traffic Distribution (ES)

Labour Type	Origin / Destination (%)					
	A12 South	A14 South	A12 North	A1214	A14 North	B1438
In-Migrant Labour (66%)	8.5	10.6	47.9	25.5	0	7.4
Resident Labour (34%)	43.6	2.0	8.9	21.8	19.8	4.0
HGVs	60	10	0	0	30	0

3.4 Assessment Scenarios

Based on the trip distribution in Table 3-2 and using the current construction programme, three scenarios have been defined (as shown in **Appendix 01**) to consider the maximum vehicle numbers (Scenario 1) and whilst very unlikely, two sensitivity tests of potential work area overlaps (Scenarios 2 and 3):

- **Scenario 1** - The NKT teams working on temporary haul roads for Jointing Bays 10 - 14 (Playford Corner) and Jointing Bays 20 - 22 (Clappits);
- **Scenario 2:** NKT teams working on Jointing Bays 10 - 14 (Playford Corner) and Jointing Bays 15 - 19 (Top Street) in the event of an overlap; and
- **Scenario 3**: NKT teams working on Jointing Bays 15 - 19 (Top Street) and Jointing Bays 20 - 22 in the event of an overlap

For Scenario 1, the maximum number of vehicle movements associated with the Playford Corner Works and Clappits Works and the relevant cable installation works (Sections 1 to 7) (NKT data) in the evening peak hour at Junctions 5, 6, 8 and 11 compared to the forecast EA THREE traffic movements at these junctions in the ES, is shown in **Table 3-3** to **Table 3-6.**

Table 3-3: Forecast 17:00 to 18:00 Junction Impacts (Junction 5: A12/A1214)

Arm	ES			NKT		
	Cars/LGVs	HGVs	Total	Cars/LGVs	HGVs	Total
A12 North	65	0	65	11	2	13
Main Road	0	0	0	0	0	0
A12 South	10	22	32	13	2	15
A1214	13	0	13	0	0	0
P&R	0	0	0	0	0	0
Total	**88**	**22**	**110**	**24**	**4**	**28**

Table 3-4: Forecast 17:00 to 18:00 Junction Impacts (Junction 6: A12/Newbourne Road)

Arm	ES			NKT		
	Cars/LGVs	HGVs	Total	Cars/LGVs	HGVs	Total
A12 North	38	0	38	6	2	8
Newbourne Road	5	0	5	19	0	19
A12 South	5	22	27	0	2	2
Foxhall Road	0	0	0	0	0	0
Total	**48**	**22**	**70**	**25**	**4**	**29**

Table 3-5: Forecast 17:00 to 18:00 Junction Impacts (Junction 8: B1079/Manor Road)

Arm	ES			NKT		
	Cars/LGVs	HGVs	Total	Cars/LGVs	HGVs	Total
B1079 West	4	0	4	19	0	19
B1079 East	9	0	9	0	0	0
Manor Road	2	0	2	0	0	0
Total	**15**	**0**	**15**	**19**	**0**	**19**

Table 3-6: Forecast 17:00 to 18:00 Junction Impacts (Junction 11: A12/B1438)

Arm	ES			NKT		
	Cars/LGVs	HGVs	Total	Cars/LGVs	HGVs	Total
A12 North	9	0	9	12	0	12
B1438	115	0	115	0	2	2
A12 South	10	22	32	8	2	10
Total	**134**	**22**	**156**	**20**	**4**	**24**

As **Table 3-3** to **Table 3-6** show, the confirmed vehicle numbers provided by NKT are less than those identified in the ES for the DCO submission. The large differences are due to the following:

- The ES assessed the peak traffic demand for each section, which was added together to create a theoretical 'in-combination' worst case and over-estimated;
- The NKT programme is such that the peak periods for the peak traffic demands do not overlap; and
- NKT has approximately half the jointing bays to construct, compared to the number assessed in the ES

Also, the number of vehicle movements is less than 30 (which is often used as a threshold for the need to undertake a capacity assessment) at any of the sensitive junctions, including for the sensitivity tests set out in Scenario 2 and 3, as shown in **Appendix 03.** The threshold is derived from DfT's Guidance on Transport Assessment (2007), which was withdrawn in 2014, however it is often still adopted by local highway authorities as a starting point for the consideration of likely impacts.

Notwithstanding the above, SLR has undertaken junction capacity assessments at the following junctions since the number of vehicle movements is close to 30:

- Junction 5: Roundabout junction of the A12 and A1214; and
- Junction 6: Roundabout junction of the A12 and Newbourne Road

The assessment of the likely impacts is set out in **Section 4.0**

4.0 Assessment of Likely Impacts

4.1 Introduction

This section presents a capacity assessment of the following sensitive junctions to assess the potential impact of the EA THREE construction traffic, based on the confirmed vehicle movement data provided by NKT.

- Junction 5: Roundabout junction of the A12 and A1214; and
- Junction 6: Roundabout junction of the A12 and Newbourne Road

4.2 Assessment Parameters

The assessment has been based on the following parameters:

- Evening Peak (17:00 to 18:00);
- 2024 assessment year;
- Addition of committed development traffic that is assumed likely to be on the highway network in 2024 from land at Adastral Park (3,000 dwellings) Planning Application Ref: DC/17/1435/OUT and Blacktiles Lane (47 dwellings) Planning Application Ref: DC/16/1992/FUL;
- Existing junction layouts; and
- Confirmed vehicle movement data provided by NKT as set out in **Table 3-3**, **Table 3-4** and
- **Table** 3-6**.**

Baseline traffic survey data has been obtained from the following

- Junction 5: A12/A14 – 2017 surveyed flows provided in the Transport Assessment (TA) prepared by TPA in December 2019) for the residential development at the Suffolk Constabulary Headquarters, in Martlesham Heath (Planning Application Ref: DC/20/0902/OUT; and
- Junction 6: A12/Newbourne Road – 2016 surveyed flows provided in the TA prepared in March 2019 by WYG for the Orwell Green Garden Village, development in Bucklesham (Planning Application Ref: DC/19/1988/OUT)

The data is provided in **Appendix 02.** The original survey data was not available for the 2016 data at the A12/Newbourne Road junction and therefore approximated HGV percentages have been applied to the Passenger Car Unit (PCU) flows using surveyed flows at the A12/A1214 and A12/Anson Road junctions as reasonable estimates.

Background traffic growth has been applied to the baseline traffic data to an assessment year of 2024, using TEMPRO v7.2, constrained to employment growth only given the addition of the committed housing schemes. Details of the committed development traffic data is provided in **Appendix 03.**

There is a highway improvement scheme proposed by SCC at the A12/A1214 junction; however, as this is not a committed scheme, the existing junction has been modelled.

There is a committed highway scheme at the A12/Newbourne Road roundabout associated with the Adastral Park development; however, this is not required until the occupation of the 601st dwelling and it is unlikely that this would occur by 2024, given the proposed build out rates set out in Table 23.1 of the Planning Statement submitted for the land at Astral Park application (prepared by CODE Development Planners Ltd. in March 2017) and as we understand no dwellings have currently been built and occupied.

4.3 Traffic Flows

The resulting traffic flows for the following assessment scenarios are provided in **Appendix 04:**

- 2024 base + committed development; and
- 2024 base + committed development + EA THREE

4.4 Capacity Assessments

4.4.1 Junction 5: Roundabout junction of the A12 and A1214

The ARCADY model of the existing junction layout presented in the TA for DC/20/0902/OUT (300 dwellings at the Suffolk Constabulary Headquarters at Martlesham Heath) has been replicated. The full Linsig results are provided **Appendix 05**.

Table 4-1 shows the 2017 evening peak scenario provided in the TA for DC/20/0902/OUT (Table 3.7) prepared by TPA compared to the results for the same scenario based on the replicated model.

The assessment with no Park and Ride stage has been selected, as during the peak periods, the Park and Ride stage of the sequence is rarely called, as stated in paragraph 3.110 in the TPA TA.

Table 4-1
Linsig Results (Junction 5: A12/A1214 - 17:00 to 18:00 – 2017 with No Park & Ride Stage)

Arm	TPA TA		SLR	
	Degree of Saturation	Mean Maximum Queue	Degree of Saturation	Mean Maximum Queue
A12 North	68.5	9	67.7	9
Main Road	19.7	1	19.2	1
A12 South	62.2	9	60.8	9
A1214	39.7	5	42.1	5
P&R	0	0	0	0
PRC	31.1%		32.9%	
DoS across all arms	68.5%		67.7%	

Table 4-1 shows the results of the Linsig model replicated by SLR are very similar to the results of the Linsig model in the TPA TA and is therefore considered to be a suitable model to assess the impacts of the EA THREE traffic flows in 2024.

The results of the 2024 assessment scenarios with and without the EA THREE traffic flows provided by NKT shown in **Table 4-2.**

Table 4-2
Linsig Results (Junction 5: A12/A1214 - 17:00 to 18:00)

Arm	2024 Base + Committed Development		2024 Base + Committed Development + EA THREE	
	Degree of Saturation (DoS)	Mean Maximum Queue (MMQ)	Degree of Saturation (DoS)	Mean Maximum Queue (MMQ)
A12 North	71.8	10	72.6	10
Main Road	21.9	1	22.1	1
A12 South	64.9	9	65.7	9
A1214	44.6	5	44.6	5
P&R	0	0	0	0
Practical Reserve Capacity (PRC)	25.4		24.0	
DoS across all arms	71.8%		72.6%	

Table 4-2 shows the junction is still predicted to operate within its design and theoretical capacity in 2024 with the addition of committed development traffic flows. The addition of the EA THREE traffic flows has no impact on Mean Maximum Queue (MMQ) lengths on any arm, with very minor changes to the Practical Reserve Capacity (PRC) and Degree of Saturation (DoS).

4.4.2 Junction 6: Roundabout junction of the A12/Newbourne Road

An ARCADY model has been built of the existing roundabout junction at the A12/Newbourne Road and the results of the two 2024 assessment scenarios identified above are provided in **Appendix 06** and summarised in **Table 4-3** below.

Table 4-3
ARCADY Results (Junction 6: A12/Newbourne Road - 17:00 to 18:00)

Arm	2024 Base + Committed Development		2024 Base + Committed Development + EA THREE	
	Ratio of Flow to Capacity (RFC)	Maximum Queue	Ratio of Flow to Capacity (RFC)	Maximum Queue
A12 North	1.21	216	1.21	224
Newbourne Road	0.94	8	0.99	13
A12 South	1.22	247	1.23	253
Foxhall Road	0.88	6	0.89	7

Table 4-3 shows the junction to be operating well over its theoretical capacity in the 2024 with committed development scenario, with significant queues on the A12 arms. The addition of the EA THREE traffic flows has

a negligible impact on the RFCs and maximum queues, with the biggest increase in RFC of 0.06 on Newbourne Road and the biggest increase in maximum queue of 8 vehicles on the A12 north. It should be highlighted that the majority of the EA THREE vehicles (20 cars/Light Goods Vehicles) at this junction will be leaving Newbourne Road during the evening peak hour, which is not shown to be over its theoretical capacity with the addition of the EA THREE traffic flows, with a minor increase in queue of 5 vehicles.

It should be highlighted that, whilst the junction is over capacity in the 2024 baseline with committed development traffic, once the RFC reached a value of 1, queues build exponentially in ARCADY, which wouldn't reflect what would occur in reality and the results should be treated with caution.

Given the very low and temporary number of EA THREE vehicle movements (32) forecast to use the junction in the evening peak hour and the uncertainty of committed development vehicle movements occurring by 2024, when NKT will be undertaking the commencement and relevant cable installation works, SLR would suggest the impacts at this junction can be considered negligible.

4.4.3 Capacity Assessment Summary

In summary, the forecast impact of the EA THREE vehicle movements associated with the Playford Corner Works and Clappits Works (and relevant cable installation works), in the evening peak hour (17:00 to 18:00) assessed against a 2024 with committed development baseline at Junction 5: A12/A1214 and Junction 6: A12/Newbourne Road, is negligible.

Following discussions with SCC, it has been agreed that that the constriction vehicle movements associated with the Playford Corner Works and Clappits Works (and relevant cable installation works), would not result in a material impact at the sensitive junctions.

SCC has advised, however, that should the Playford Corner Works and Clappits Works (and relevant cable installation works) be delayed by five or more years, the junction capacity assessments may be required to be revisited to take account of further background traffic growth.

5.0 Road Safety Assessment Review

5.1 Scope

The Crashmap database[1] has been used to compare the number of accidents and any clusters, for the five year period prior to the DCO application (2011 to 2015) and the most recent five year period available excluding 2020 as traffic levels will have been unrepresentative of typical conditions due to the Covid-19 pandemic (2015 to 2019), at the following locations on the A12:

- A12/B1079;
- A12/B1438;
- A12/A1214;
- A12/Newbourne Road;
- Routes from the A12:
    - B1079 between the A12 and Grundisburgh;
    - Woodbridge Road/Rose Hill/Ipswich Road between Grundisburgh and Bealings Road
    - Bealings Road; and
    - Newbourne Road/Ipswich Road

An analysis has been provided below with all associated Crashmap reports included in **Appendix 07**.

5.2 Analysis

5.2.1 A12/B1079

The number of accidents at the junction within the most recent five year period has shown a reduction from the number of accidents in the five year period prior to the submission of the DCO application:

- 2011 to 2015 - 10 accidents; and
- 2015 to 2019 – 7 accidents

There have been three accidents on the A12 southbound arm on approach to the junction in each of the five year periods recorded in 2015. A review of the available data shows the three accidents, which were in the vicinity of the give way line, were due to two separate causation factors; one involved conflict between a car and a pedal cycle, which appear to have collided side on; and two involving two vehicles, which both appear to have been a shunt. A further accident involved a pedal cycle in 2016 which occurred while vehicles were traversing the roundabout.

Overall, it can be concluded that there is not a deficiency in the highway layout that an increase in vehicles associated with the construction of EA THREE would exacerbate, and that human error and a lapse in concentration is likely the causation of the shunt accidents.

A further two accidents occurred on the A12 northbound arm on approach to the junction during both five year datasets which are of separate accounts. These have been reviewed and are, again, in vicinity of the give way line. One appears to be a shunt between a motorcycle and a car (motorcycle behind) and was serious in nature; while the other was between five cars and is of unknown causation. One casualty resulted with slight injury.

[1] www.crashmap.co.uk

5.2.2 A12/B1438

There has been a reduction in the number of accidents in the vicinity of the A12/ B1438 roundabout junction, with six occurring in the most recent five year period:

- 2011 to 2015 – 8; and
- 2015 to 2019 – 6

There are four accidents shown in relative proximity along the A12 southbound arm on approach to the junction set back from the give way line. A closer review of the detailed data, and their locations using OS data, has shown they took place apart from one another and so are not considered to be a cluster.

The remaining accidents are shown to be spread fairly evenly around the junction; therefore, it can be concluded that there are no road safety issues at this junction that an increase in vehicles associated with the construction of EA THREE would exacerbate.

5.2.3 A12/ A1214

There have been fewer accidents during the five year period of 2015-2019 than during the five year period prior to the submission of the DCO application.

- 2011 to 2015 – 8; and
- 2015 to 2019 – 6

There are no shown clusters of accidents as they are all fairly evenly spread around the junction; therefore, it can be concluded that there are no road safety issues at this junction that an increase in vehicles associated with the construction of EA THREE would exacerbate.

Two serious accidents did occur, with one shown in both dataset periods in 2015 which involved a single motorcycle. Despite a review of the detailed data report, it is unknown what occurred as it is stated the vehicle had no impact. The second accident serious in nature occurred in 2016 along Main Road and involved two cars. These two accidents are considered to be isolated events with no other accident occurring nearby.

5.2.4 A12/Newbourne Road

The number of accidents at the junction within the most recent five year period is slightly less than the number of accidents in the five year period prior to the submission of the DCO application:

- 2011 to 2015 – 11; and
- 2015 to 2019 – 10

Two clusters have been identified at this junction; the first being at the give way line along the Foxhall Road eastbound arm containing three accidents, and the second occurring at the give way line along the A12 northbound arm containing two accidents. A review of the detailed accident data has shown that all of these accidents are of the same type and are a shunt accident from behind involving cars with one on the A12 arm involving a motorcycle. None of these accidents were serious or fatal.

Two of the three accidents along the Foxhall Road arm occurred in 2015, meaning just one of the accidents is an additional from the five year period prior to the submission of the DCO application; while one of the two accidents along the A12 arm occurred in 2015. This suggests that, as one additional accident has occurred in both locations since 2015, there is unlikely to be any deficiencies in the highway layout that an increase in vehicles associated with the construction of EA THREE would exacerbate.

5.2.5 Routes from the A12

Table 5-1

Road Safety Review on the EA THREE Construction Routes from the A12 shows the number of recorded accidents on the EA THREE construction access routes from the A12 that would be used by vehicles associated with the construction of the EA THREE Playford Corner Works and Clappits Works and the relevant cable installation works (Sections 7 to 10) in each five year period.

Table 5-1
Road Safety Review on the EA THREE Construction Routes from the A12

Route	Period (Number of Accidents)	
	2011 - 2015	2015 - 2019
B1079 between the A12 and Grundisburgh	8	5
Woodbridge Road/Ipswich Road between Grundisburgh and Bealings Road	4	2
Bealings Road	4	4
Newbourne Road/Ipswich Road	2	2

As shown in **Table 5-1** the number of accidents has either remained the same of reduced on each of the routes between the five year period prior to the DCO submission and the most recent five year period. Also, all accidents were slight in severity and occurred at different locations. Therefore, it can be concluded that there are no road safety issues on these routes that an increase in vehicles associated with the construction of EA THREE would exacerbate.

5.3 Summary

The review of road safety in this section would indicate that there has been a general improvement of road safety since the submission of the DCO application, with no deficiency in the layout or condition of the junctions and routes reviewed.

Therefore, no changes to the measures proposed in the Traffic Management Plan are considered to be necessary, which has been agreed by SCC.

6.0 Summary and Conclusion

6.1 Summary

This Technical Note sets out the anticipated maximum number of vehicle movements associated with the construction of the EA THREE Playford Corner Works and Clappits Works and the relevant cable installation works (Sections 7 to 10) in the evening peak hour at sensitive junctions on the A12 junction using confirmed data from NKT. The assessment is based on a lower (and more realistic) vehicle occupancy of 1.5 employees, compared to the vehicle occupancy of 2.5 used in the ES for the DCO application.

Junction capacity assessments has been undertaken to test the impact of the confirmed EA THREE traffic data at the junctions, using the most recent baseline traffic data available and incorporating vehicle movements associated with various committed developments. The assessment confirmed there would be no or negligible additional queuing at the sensitive junctions with the addition of the EA THREE vehicle movements compared to the 2024 with committed development scenario.

A review of road safety on the routes that would be used by the construction traffic associated with the construction of the EA THREE Playford Corner Works and Clappits Works and the relevant cable installation works (Sections 7 to 10) shows there are no road safety issues that would be exacerbated by an increase in traffic flows and that no changes to the measures proposed in the EA THREE Traffic Management Plan are required.

6.2 Conclusion

As demonstrated, the impact of the confirmed EA THREE Playford Corner Works and Clappits Works and the relevant cable installation works (Sections 7 to 10) traffic data is such that there would be no significant impacts on capacity and no impacts on road safety on the routes used by construction traffic, with no mitigation required.

In, conclusion, as agreed with SCC, no further assessments on the highway network are required prior to the commencement of construction associated with the EA THREE Playford Corner Works and Clappits Works and the relevant cable installation works (Sections 7 to 10).

.

APPENDIX 01

NKT Vehicle Movements (including Sensitivity Tests)

	66%		34%	
	In-Migrant Labour		Resident Labour	
Origin/Deestination	**Total**	**Proportion**	**Total**	**Proportion**
A12 South	8.5%	5.6%	43.6%	14.8%
B1113	0.0%	0.0%	0.0%	0.0%
A14 South	10.6%	7.0%	2.0%	0.7%
A12 north	47.9%	31.6%	8.9%	3.0%
B1078	0.0%	0.0%	0.0%	0.0%
A1214	25.5%	16.8%	21.8%	7.4%
A14 North	0.0%	0.0%	19.8%	6.7%
B1438	7.4%	4.9%	4.0%	1.4%
Total	**99.90%**	**65.93%**	**100.10%**	**34.03%**

Programme Snapshot for Haul Road Construction and TJBs

	Start	Finish
Install Temporary Haul Roads	Mar-24	Jul-24
Transition Jointing Bays	Jul-24	Oct-24
TJB 10- 14	Jul-24	Aug-24
TJB 15 -19	Aug-24	Aug-24
TJB 20 -22	Sep-24	Sep-24

NKT Daily Data Summary (peak during haul road construction)

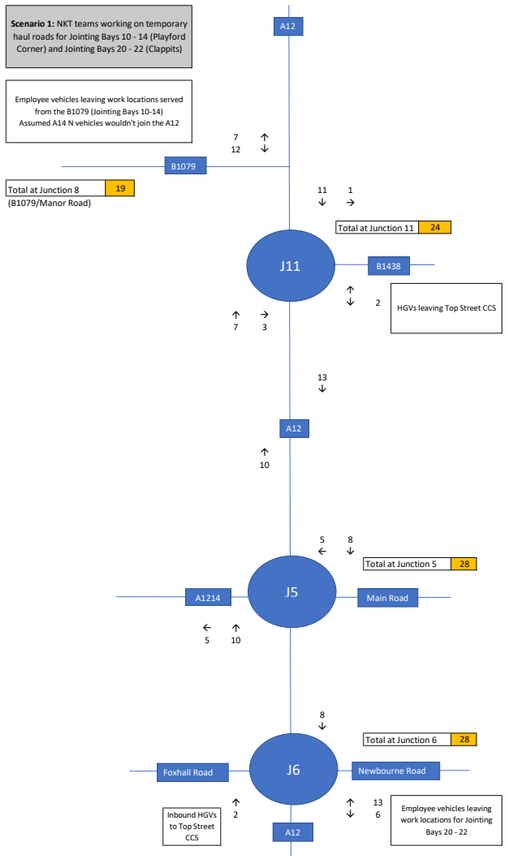
	HGVs		Employees	
	Average	Peak	Average	Peak
Location 1	32	40	20	30
Location 2	32	40	20	30
Total	**64**	**80**	**40**	**60**

NKT Daily Data Summary (TJBs)

	HGVs		Employees	
	Average	Peak	Average	Peak
TJB 10-14	8	12	12	25
TJB 15-19	8	12	12	25
TJB 20-22	8	12	12	25

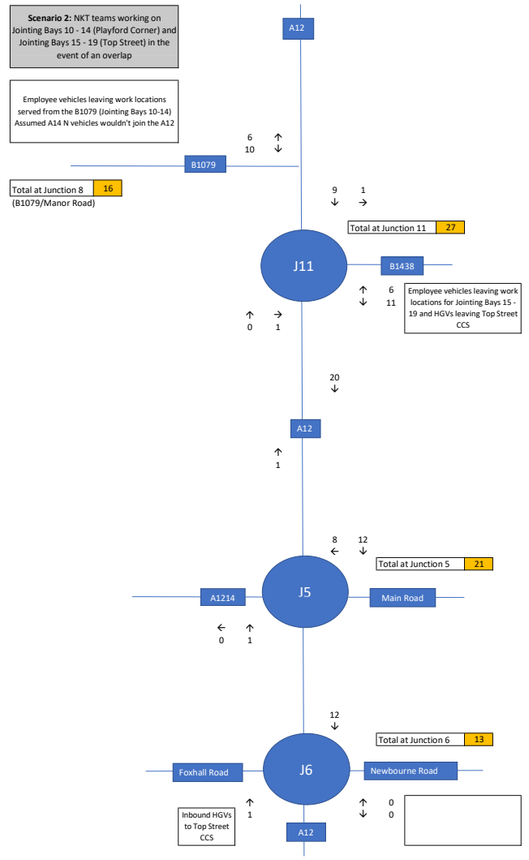
Scenario 1: NKT teams working on temporary haul roads for Jointing Bays 10 - 14 (Playford Corner) and Jointing Bays 20 - 22 (Clappits)

Employee vehicles leaving work locations served from the B1079 (Jointing Bays 10-14)
Assumed A14 N vehicles wouldn't join the A12

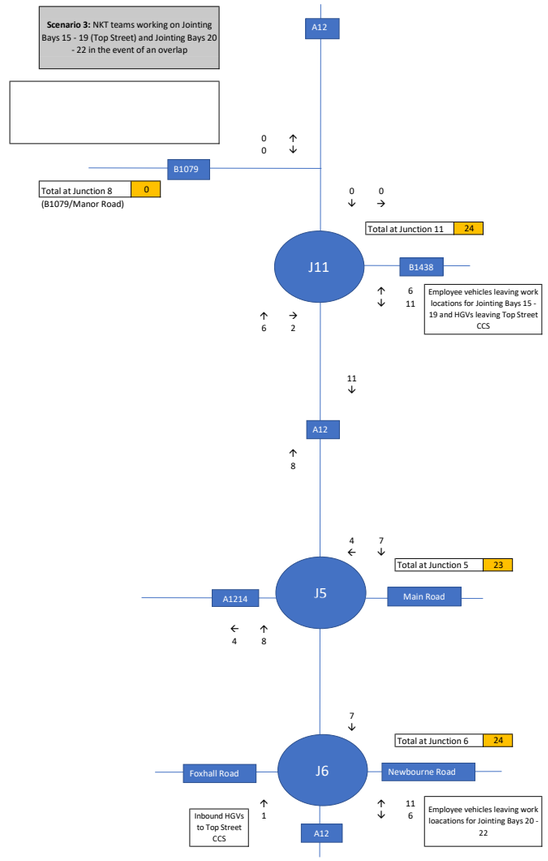


Scenario 2: NKT teams working on Jointing Bays 10 - 14 (Playford Corner) and Jointing Bays 15 - 19 (Top Street) in the event of an overlap

Employee vehicles leaving work locations served from the B1079 (Jointing Bays 10-14)
Assumed A14 N vehicles wouldn't join the A12



Scenario 3: NKT teams working on Jointing Bays 15 - 19 (Top Street) and Jointing Bays 20 - 22 in the event of an overlap

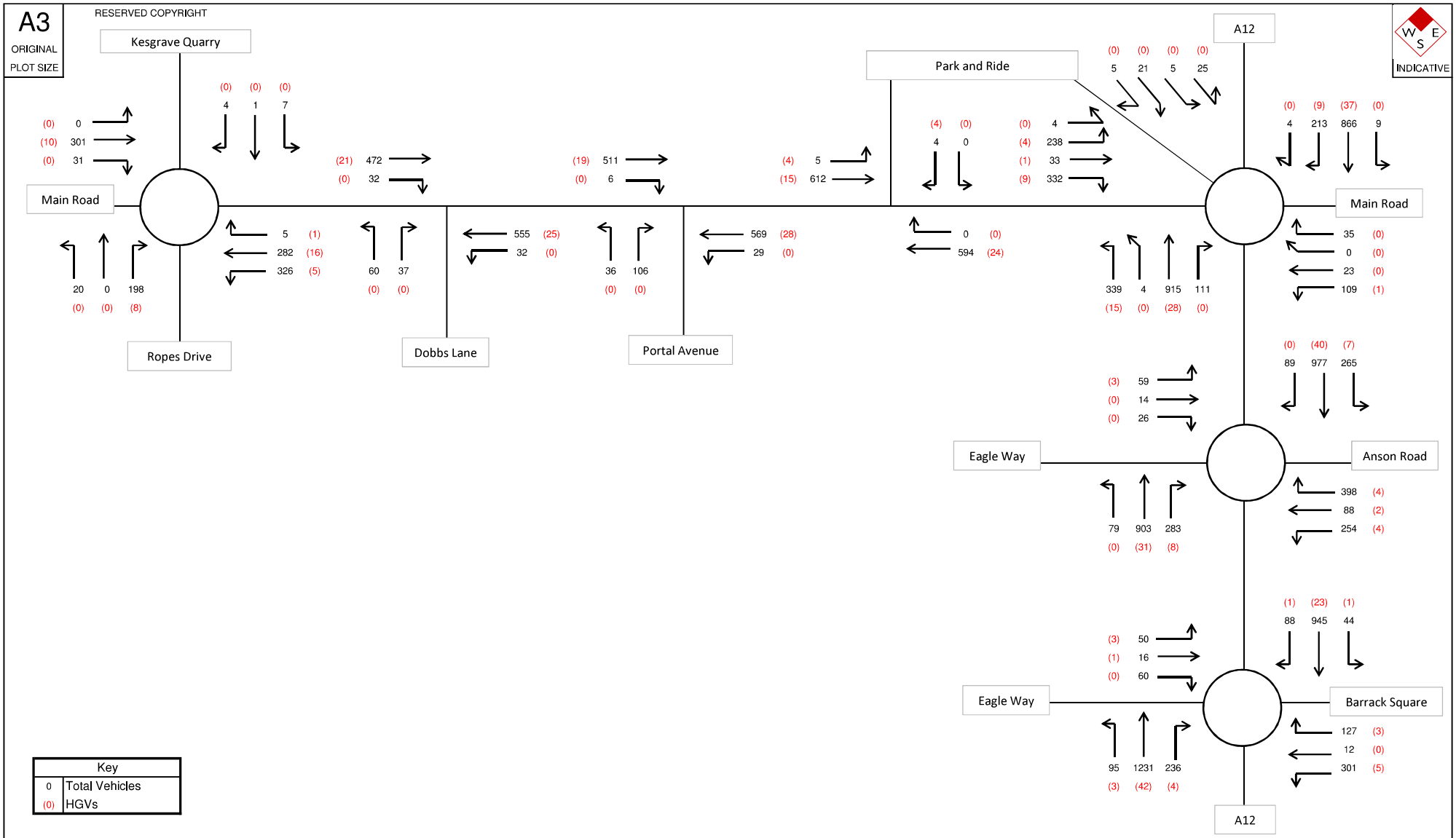


APPENDIX 02

Baseline Traffic Flows

A3
ORIGINAL
PLOT SIZE

RESERVED COPYRIGHT



Surveyed Traffic Flows - Evening peak (17:00-18:00)	Date: NOV '19	Status: INFORMATION	Scale: NTS
Suffolk Constabulary, Martlesham	Prepared By: LM	Checked By: IB	Approved By: IB
Police and Crime Commissioner for Suffolk	Project No: 1605-81	Figure No: 3.7	Revision: -

Bristol
Cambridge
London
Manchester
Oxford
Welwyn Garden City
The Stables
7 Chesterton Mill
French's Road
Cambridge
CB4 3NP
01223 455385
www.tpa.uk.com
Transport Planning Associates

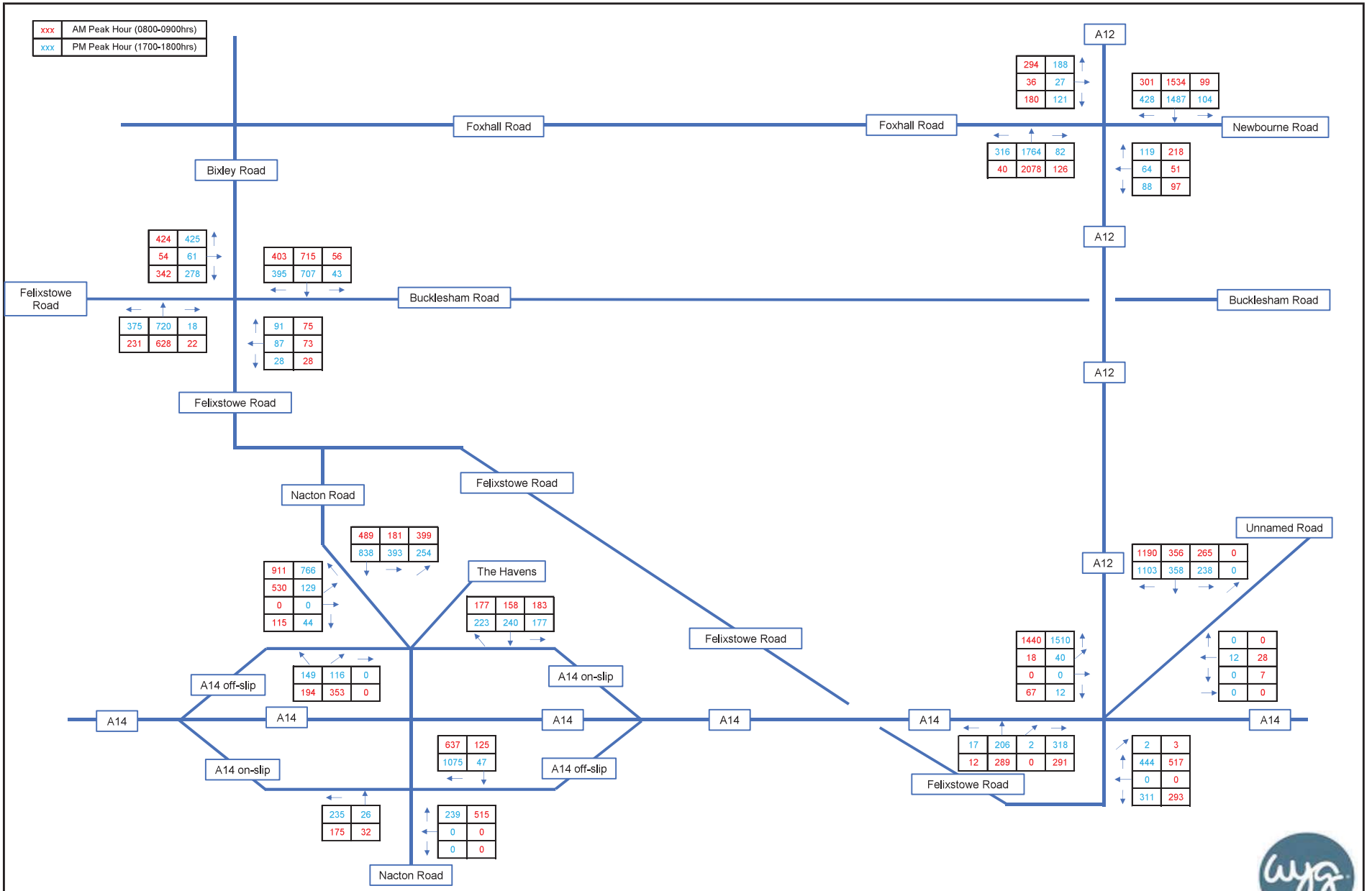


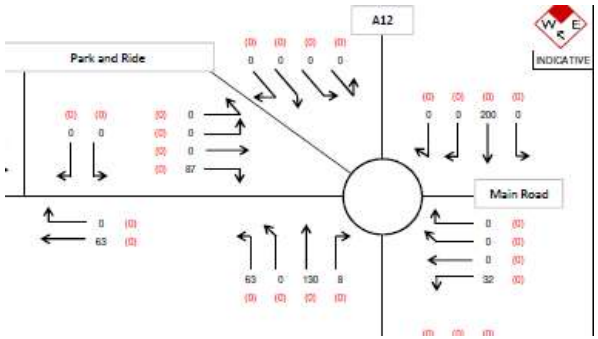
Figure 7.1 - 2016 Base Traffic Flows (PCUs)

APPENDIX 03

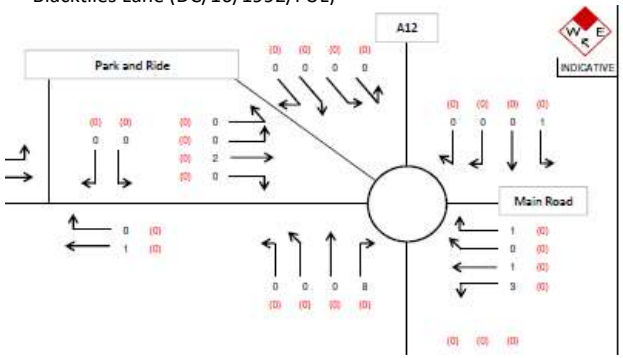
Committed Development Traffic Flows

Junction 5: A12/A1214

Adastral Park (DC/17/1435/OUT)



Blacktiles Lane (DC/16/1992/FUL)

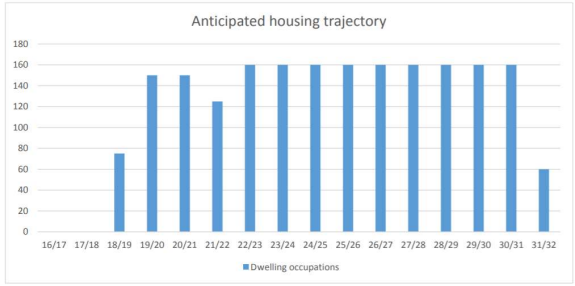


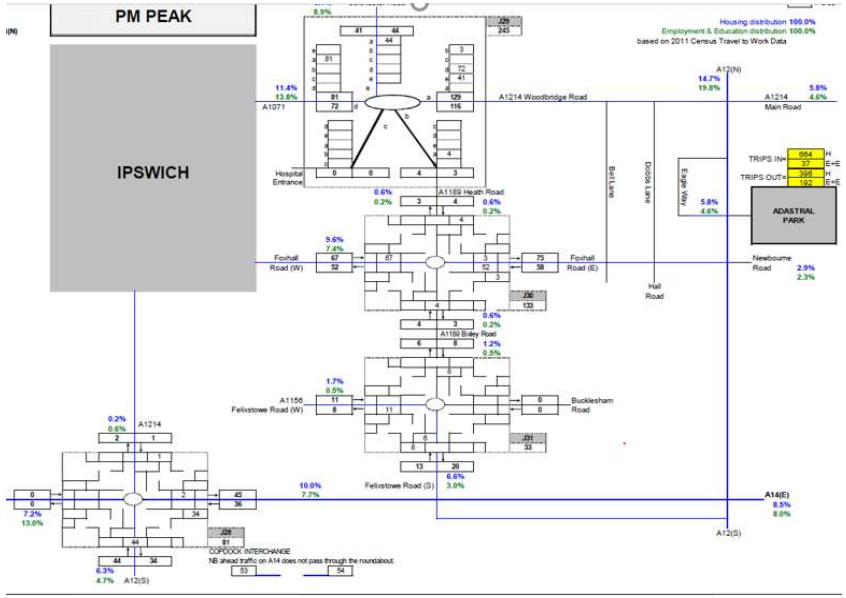
Junction 6: A12/Newbourne Road

Adastral Park (DC/17/1435/OUT)

Original Phasing Plan

Table 23.1





Assume first occupactions in 2023
Asssessment year of 2024
Assume 225 dwellings occupied 11%

	Total		A12 S			Foxhall Road		Newbourne Road		
	Arrivals	**Departures**	**Dist.**	**Arrivals**	**Departures**	**Arrivals**	**Departures**	**Dist.**	**Arrivals**	**Departures**
Housing	664	396	38.80%	258	154			2.90%	19	11
Employment	37	192	37.00%	14	71			2.30%	1	4
Total	**701**	**588**		**271**	**225**	**75**	**38**		**20**	**16**
11% at 2024	**77**	**65**	**0**	**30**	**25**	**8**	**4**	**0**	**2**	**2**

APPENDIX 04

Assessment Scenario Traffic Flows

A12/A1214/Main Road

		Cars					HGVs					PCUs				
		To					To					To				
	From	A12 S	A1214	P&R	A12 N	Main Road	A12 S	A1214	P&R	A12 N	Main Road	A12 S	A1214	P&R	A12 N	Main Road
Base 2017	**A12 S**												354	4	943	111
	A1214											341		4	242	34
	P&R															
	A12 N											903	222	4		9
	Main Road											110	23		35	
2024	**A12 S**												370	4	986	116
Employment Growth only	**A1214**											356		4	253	36
1.0451	**P&R**															
	A12 N											944	232	4		9
	Main Road											115	24		37	
Committed development	**A12 S**		7		14	9							7		14	9
Adastral Park 11% built-out	**A1214**	10				2						10				2
Blacktiles Lane	**P&R**															
	A12 N	22				1						22				1
	Main Road	7	1		1							7	1		1	
EA3	**A12 S**		5		9					2			5		14	
Worst case commencement / cable works	**A1214**															
	P&R															
	A12 N	8	5				2					13	5			
	Main Road															
Base 2024 + Com Dev	**A12 S**		7		14	9							**377**	**4**	**1000**	**125**
	A1214	10				2						**366**		**4**	**253**	**38**
	P&R															
	A12 N	22				1						**966**	**232**	**4**		**10**
	Main Road	7	1		1							**121**	**25**		**38**	
Base 2024 + Com Dev EA3	**A12 S**		12		24	9				2			**382**	**4**	**1014**	**125**
	A1214	10				2						**366**		**4**	**253**	**38**
	P&R															
	A12 N	30	5			1	2					**979**	**237**	**4**		**10**
	Main Road	7	1		1							**121**	**25**		**38**	

A12/Foxhall Road/Newbourne Road

		Cars				HGVs				PCUs			
		To				To				To			
	From	A12 N	Newbourne Road	A12 S	Foxhall Road	A12 N	Newbourne Road	A12 S	Foxhall Road	A12 N	Newbourne Road	A12 S	Foxhall Road
Base 2016	**A12 N**										104	1487	428
	Newbourne Road									119		88	64
	A12 S									1764	82		316
	Foxhall Road									188	27	121	
2024	**A12 N**										109	1555	448
Employment Growth only	**Newbourne Road**									124		92	67
1.0457	**A12 S**									1845	86		330
	Foxhall Road									197	28	127	
Committed Development	**A12 N**												
Adastral Park 11% built-out	**Newbourne Road**	2		25	4	2				7		25	4
	A12 S	30								30			
	Foxhall Road	8								8			
EA3	**A12 N**			8				2				13	
Wosrt case commencement /cable works	**Newbourne Road**	14		6						14		6	
	A12 S					2				5			
	Foxhall Road												
Base 2024 + Com Dev	**A12 N**										**109**	**1555**	**448**
	Newbourne Road	2		25	4	2				**132**		**117**	**71**
	A12 S	30								**1874**	**86**		**330**
	Foxhall Road	8								**205**	**28**	**127**	
Base 2024 + Com Dev + EA3	**A12 N**			8				2			**109**	**1568**	**448**
	Newbourne Road	16		30	4	2				**146**		**122**	**71**
	A12 S	30				2				**1879**	**86**		**330**
	Foxhall Road	8								**205**	**28**	**127**	

APPENDIX 05

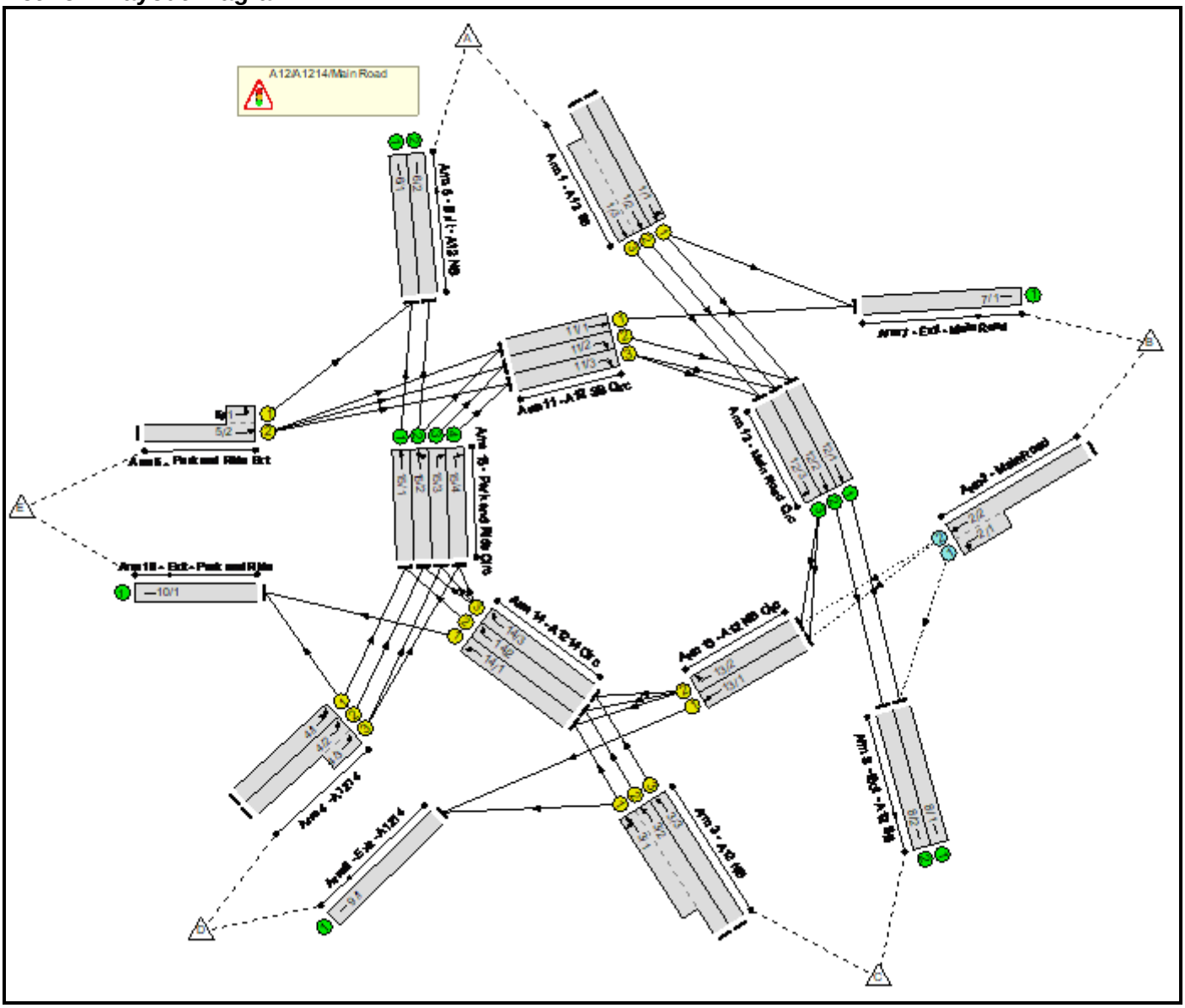
Linsig Model Results (A12/A1214)

Full Input Data And Results

User and Project Details

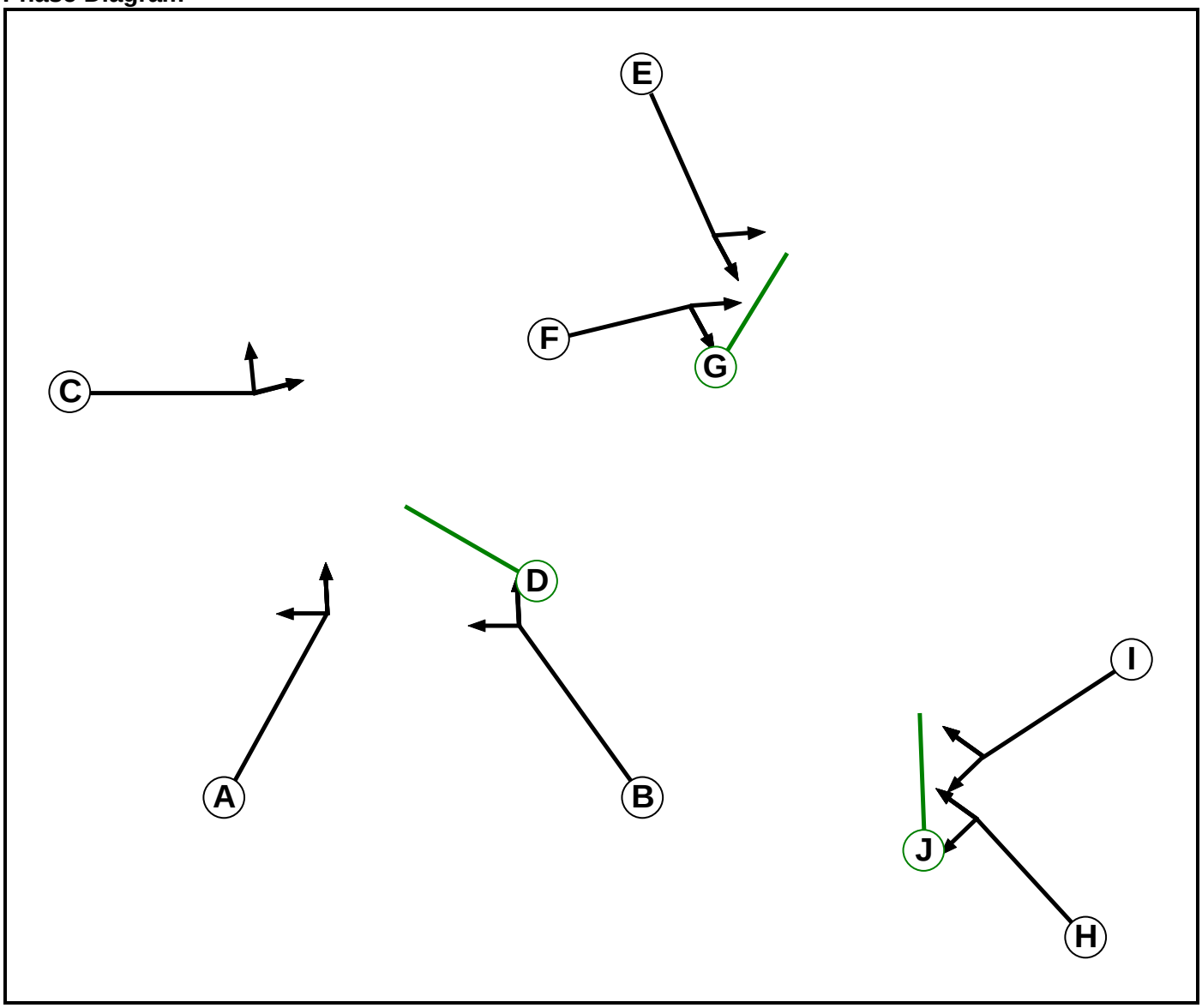
Project:	**East Anglia Three**
Title:	
Location:	A12/A1214/Main Road, Martlesham
Client:	Scottish Power Renewables
Additional detail:	
File name:	A12_A1214_Main Road 14.01.22
Author:	
Company:	
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	1		7	7
D	Dummy R/A	1		7	7
E	Traffic	2		7	7
F	Traffic	2		7	7
G	Dummy R/A	2		7	7
H	Traffic	3		7	7
I	Traffic	3		7	7
J	Dummy R/A	3		7	7

Full Input Data And Results

Phase Intergreens Matrix

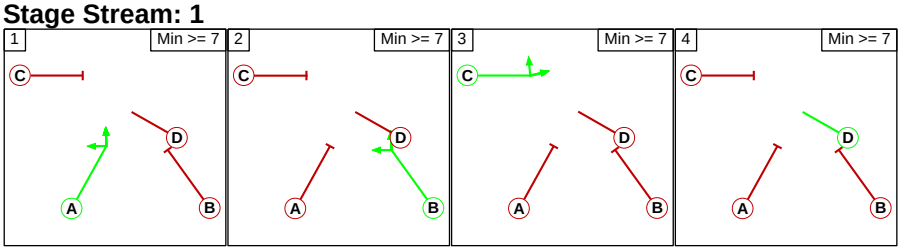
Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J
A		5	9	3	-	-	-	-	-	-
B	5		9	3	-	-	-	-	-	-
C	5	5		3	-	-	-	-	-	-
D	2	2	2		-	-	-	-	-	-
E	-	-	-	-		5	3	-	-	-
F	-	-	-	-	5		3	-	-	-
G	-	-	-	-	2	2		-	-	-
H	-	-	-	-	-	-	-		5	3
I	-	-	-	-	-	-	-	5		3
J	-	-	-	-	-	-	-	2	2	

Phases in Stage

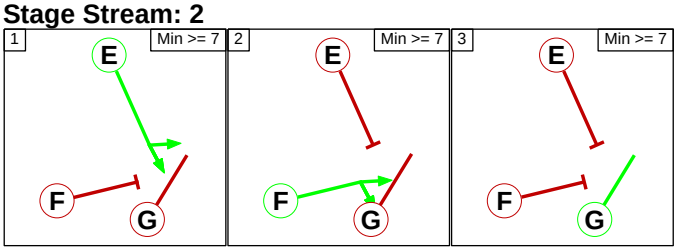
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
1	3	C
1	4	D
2	1	E
2	2	F
2	3	G
3	1	H
3	2	I
3	3	J

Stage Diagram

Stage Stream: 1

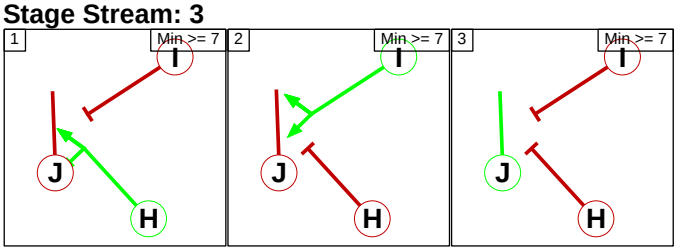


Stage Stream: 2



Full Input Data And Results

Stage Stream: 3



Phase Delays

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 3

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

Stage Stream: 1

		To Stage			
		1	2	3	4
From Stage	1		5	9	3
	2	5		9	3
	3	5	5		3
	4	2	2	2	

Stage Stream: 2

		To Stage		
		1	2	3
From Stage	1		5	3
	2	5		3
	3	2	2	

Stage Stream: 3

		To Stage		
		1	2	3
From Stage	1		5	3
	2	5		3
	3	2	2	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A12/A1214/Main Road											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
2/1 (Main Road)	8/1 (Left)	852	0	12/1	0.49	All	-	-	-	-	-
2/2 (Main Road)	13/1 (Ahead)	852	0	12/1	0.49	All	-	-	-	-	-
				12/2	0.49	All					
				12/3	0.49	All					
	13/2 (Ahead)	852	0	12/1	0.49	All					
				12/2	0.49	All					
				12/3	0.49	All					

Full Input Data And Results

Lane Input Data

Junction: A12/A1214/Main Road												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (A12 SB)	U	E	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 7 Left	Inf
											Arm 12 Ahead	Inf
1/2 (A12 SB)	U	E	2	3	60.0	Geom	-	3.50	0.00	N	Arm 12 Ahead	Inf
1/3 (A12 SB)	U	E	2	3	13.2	Geom	-	3.60	0.00	Y	Arm 12 Ahead	Inf
2/1 (Main Road)	O		2	3	4.7	Geom	-	4.00	0.00	Y	Arm 8 Left	Inf
2/2 (Main Road)	O		2	3	60.0	Geom	-	4.00	0.00	Y	Arm 13 Ahead	Inf
3/1 (A12 NB)	U	H	2	3	14.8	Geom	-	3.80	0.00	Y	Arm 9 Left	Inf
											Arm 14 Ahead	Inf
3/2 (A12 NB)	U	H	2	3	60.0	Geom	-	3.60	0.00	N	Arm 14 Ahead	Inf
3/3 (A12 NB)	U	H	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 14 Ahead	Inf
4/1 (A1214)	U	A	2	3	60.0	Geom	-	4.10	0.00	Y	Arm 10 U-Turn	Inf
											Arm 15 Left	Inf
4/2 (A1214)	U	A	2	3	60.0	Geom	-	4.10	0.00	N	Arm 15 Left	Inf
4/3 (A1214)	U	A	2	3	3.2	Geom	-	4.20	0.00	Y	Arm 15 Left	Inf
5/1 (Park and Ride Exit)	U	C	2	3	2.4	Geom	-	4.10	0.00	Y	Arm 6 Left	Inf
5/2 (Park and Ride Exit)	U	C	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 11 Ahead	Inf
6/1 (Exit - A12 NB)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2 (Exit - A12 NB)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Exit - Main Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Exit - A12 SB)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/2 (Exit - A12 SB)	U		2	3	60.0	Inf	-	-	-	-	-	-

9/1 (Exit - A1214)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (Exit - Park and Ride)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A12 SB Circ)	U	F	2	3	2.8	Geom	-	4.90	0.00	Y	Arm 7 Ahead	Inf
11/2 (A12 SB Circ)	U	F	2	3	2.8	Geom	-	4.90	0.00	N	Arm 12 Right	Inf
11/3 (A12 SB Circ)	U	F	2	3	2.8	Geom	-	4.70	0.00	Y	Arm 12 Right	Inf
12/1 (Main Road Circ)	U		2	3	2.6	Geom	-	4.40	0.00	Y	Arm 8 Ahead	Inf
12/2 (Main Road Circ)	U		2	3	2.6	Geom	-	4.40	0.00	Y	Arm 8 Ahead	Inf
12/3 (Main Road Circ)	U		2	3	2.6	Geom	-	3.80	0.00	Y	Arm 13 Right	Inf
13/1 (A12 NB Circ)	U	I	2	3	2.3	Geom	-	4.40	0.00	Y	Arm 9 Ahead	Inf
13/2 (A12 NB Circ)	U	I	2	3	2.3	Geom	-	4.40	0.00	Y	Arm 14 Right	Inf
14/1 (A1214 Circ)	U	B	2	3	2.6	Geom	-	4.60	0.00	Y	Arm 10 Ahead	Inf
14/2 (A1214 Circ)	U	B	2	3	2.4	Geom	-	4.40	0.00	N	Arm 15 Right	Inf
14/3 (A1214 Circ)	U	B	2	3	2.3	Geom	-	4.40	0.00	Y	Arm 15 Right	Inf
15/1 (Park and Ride Circ)	U		2	3	1.4	Geom	-	4.90	0.00	Y	Arm 6 Ahead	Inf
15/2 (Park and Ride Circ)	U		2	3	1.4	Geom	-	4.90	0.00	N	Arm 6 Ahead	Inf
											Arm 11 Right	Inf
15/3 (Park and Ride Circ)	U		2	3	1.4	Geom	-	4.90	0.00	N	Arm 11 Right	Inf
15/4 (Park and Ride Circ)	U		2	3	1.4	Geom	-	4.90	0.00	Y	Arm 11 Right	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2017 Survey (No Park and Ride) - PM Peak'	17:00	18:00	01:00	
2: '2024 Base + Com Dev - PM Peak'	17:00	18:00	01:00	
3: '2024 Base + Com Dev + EA3 - PM Peak'	17:00	18:00	01:00	

Scenario 1: '2017 Survey (No Park and Ride) - PM Peak' (FG1: '2017 Survey (No Park and Ride) - PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	9	903	222	4	1138
	B	35	0	110	23	0	168
	C	943	111	0	354	4	1412
	D	242	34	341	0	4	621
	E	0	0	0	0	0	0
	Tot.	1220	154	1354	599	12	3339

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2017 Survey (No Park and Ride) - PM Peak
Junction: A12/A1214/Main Road	
1/1	413
1/2 (with short)	725(In) 499(Out)
1/3 (short)	226
2/1 (short)	110
2/2 (with short)	168(In) 58(Out)
3/1 (short)	358
3/2 (with short)	900(In) 542(Out)
3/3	512
4/1	172
4/2 (with short)	449(In) 108(Out)
4/3 (short)	341
5/1 (short)	0
5/2 (with short)	0(In) 0(Out)
6/1	730
6/2	490
7/1	154
8/1	692
8/2	662
9/1	599
10/1	12
11/1	145
11/2	178
11/3	163
12/1	582
12/2	662
12/3	226
13/1	245
13/2	39
14/1	8
14/2	562
14/3	527
15/1	730
15/2	635

Full Input Data And Results

15/3	178
15/4	163

Full Input Data And Results

Lane Saturation Flows

Junction: A12/A1214/Main Road								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A12 SB)	3.40	0.00	Y	Arm 7 Left	Inf	2.2 %	1955	1955
				Arm 12 Ahead	Inf	97.8 %		
1/2 (A12 SB)	3.50	0.00	N	Arm 12 Ahead	Inf	100.0 %	2105	2105
1/3 (A12 SB)	3.60	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1975	1975
2/1 (Main Road)	4.00	0.00	Y	Arm 8 Left	Inf	100.0 %	2015	2015
2/2 (Main Road)	4.00	0.00	Y	Arm 13 Ahead	Inf	100.0 %	2015	2015
3/1 (A12 NB)	3.80	0.00	Y	Arm 9 Left	Inf	98.9 %	1995	1995
				Arm 14 Ahead	Inf	1.1 %		
3/2 (A12 NB)	3.60	0.00	N	Arm 14 Ahead	Inf	100.0 %	2115	2115
3/3 (A12 NB)	3.70	0.00	Y	Arm 14 Ahead	Inf	100.0 %	1985	1985
4/1 (A1214)	4.10	0.00	Y	Arm 10 U-Turn	Inf	2.3 %	2025	2025
				Arm 15 Left	Inf	97.7 %		
4/2 (A1214)	4.10	0.00	N	Arm 15 Left	Inf	100.0 %	2165	2165
4/3 (A1214)	4.20	0.00	Y	Arm 15 Left	Inf	100.0 %	2035	2035
5/1 (Park and Ride Exit)	4.10	0.00	Y	Arm 6 Left	Inf	0.0 %	2025	2025
5/2 (Park and Ride Exit)	4.00	0.00	Y	Arm 11 Ahead	Inf	0.0 %	2015	2015
6/1 (Exit - A12 NB Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (Exit - A12 NB Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit - Main Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit - A12 SB Lane 1)	Infinite Saturation Flow						Inf	Inf
8/2 (Exit - A12 SB Lane 2)	Infinite Saturation Flow						Inf	Inf
9/1 (Exit - A1214 Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Exit - Park and Ride Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A12 SB Circ)	4.90	0.00	Y	Arm 7 Ahead	Inf	100.0 %	2105	2105
11/2 (A12 SB Circ)	4.90	0.00	N	Arm 12 Right	Inf	100.0 %	2245	2245
11/3 (A12 SB Circ)	4.70	0.00	Y	Arm 12 Right	Inf	100.0 %	2085	2085

12/1 (Main Road Circ)	4.40	0.00	Y	Arm 8 Ahead	Inf	100.0 %	2055	2055
12/2 (Main Road Circ)	4.40	0.00	Y	Arm 8 Ahead	Inf	100.0 %	2055	2055
12/3 (Main Road Circ)	3.80	0.00	Y	Arm 13 Right	Inf	100.0 %	1995	1995
13/1 (A12 NB Circ)	4.40	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2055	2055
13/2 (A12 NB Circ)	4.40	0.00	Y	Arm 14 Right	Inf	100.0 %	2055	2055
14/1 (A1214 Circ)	4.60	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2075	2075
14/2 (A1214 Circ)	4.40	0.00	N	Arm 15 Right	Inf	100.0 %	2195	2195
14/3 (A1214 Circ)	4.40	0.00	Y	Arm 15 Right	Inf	100.0 %	2055	2055
15/1 (Park and Ride Circ)	4.90	0.00	Y	Arm 6 Ahead	Inf	100.0 %	2105	2105
15/2 (Park and Ride Circ)	4.90	0.00	N	Arm 6 Ahead	Inf	77.2 %	2245	2245
				Arm 11 Right	Inf	22.8 %		
15/3 (Park and Ride Circ)	4.90	0.00	N	Arm 11 Right	Inf	100.0 %	2245	2245
15/4 (Park and Ride Circ)	4.90	0.00	Y	Arm 11 Right	Inf	100.0 %	2105	2105

Scenario 2: '2024 Base + Com Dev - PM Peak' (FG2: '2024 Base + Com Dev - PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	10	966	232	4	1212
	B	38	0	121	25	0	184
	C	1000	125	0	377	4	1506
	D	253	38	366	0	4	661
	E	0	0	0	0	0	0
	Tot.	1291	173	1453	634	12	3563

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2024 Base + Com Dev - PM Peak
Junction: A12/A1214/Main Road	
1/1	447
1/2 (with short)	765(In) 529(Out)
1/3 (short)	236
2/1 (short)	121
2/2 (with short)	184(In) 63(Out)
3/1 (short)	381
3/2 (with short)	959(In) 578(Out)
3/3	547
4/1	187
4/2 (with short)	474(In) 108(Out)
4/3 (short)	366
5/1 (short)	0
5/2 (with short)	0(In) 0(Out)
6/1	783
6/2	508
7/1	173
8/1	749
8/2	704
9/1	634
10/1	12
11/1	163
11/2	191
11/3	175
12/1	628
12/2	704
12/3	236
13/1	257
13/2	42
14/1	8
14/2	600
14/3	563
15/1	783
15/2	671

Full Input Data And Results

15/3	191
15/4	175

Full Input Data And Results

Lane Saturation Flows

Junction: A12/A1214/Main Road								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A12 SB)	3.40	0.00	Y	Arm 7 Left	Inf	2.2 %	1955	1955
				Arm 12 Ahead	Inf	97.8 %		
1/2 (A12 SB)	3.50	0.00	N	Arm 12 Ahead	Inf	100.0 %	2105	2105
1/3 (A12 SB)	3.60	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1975	1975
2/1 (Main Road)	4.00	0.00	Y	Arm 8 Left	Inf	100.0 %	2015	2015
2/2 (Main Road)	4.00	0.00	Y	Arm 13 Ahead	Inf	100.0 %	2015	2015
3/1 (A12 NB)	3.80	0.00	Y	Arm 9 Left	Inf	99.0 %	1995	1995
				Arm 14 Ahead	Inf	1.0 %		
3/2 (A12 NB)	3.60	0.00	N	Arm 14 Ahead	Inf	100.0 %	2115	2115
3/3 (A12 NB)	3.70	0.00	Y	Arm 14 Ahead	Inf	100.0 %	1985	1985
4/1 (A1214)	4.10	0.00	Y	Arm 10 U-Turn	Inf	2.1 %	2025	2025
				Arm 15 Left	Inf	97.9 %		
4/2 (A1214)	4.10	0.00	N	Arm 15 Left	Inf	100.0 %	2165	2165
4/3 (A1214)	4.20	0.00	Y	Arm 15 Left	Inf	100.0 %	2035	2035
5/1 (Park and Ride Exit)	4.10	0.00	Y	Arm 6 Left	Inf	0.0 %	2025	2025
5/2 (Park and Ride Exit)	4.00	0.00	Y	Arm 11 Ahead	Inf	0.0 %	2015	2015
6/1 (Exit - A12 NB Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (Exit - A12 NB Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit - Main Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit - A12 SB Lane 1)	Infinite Saturation Flow						Inf	Inf
8/2 (Exit - A12 SB Lane 2)	Infinite Saturation Flow						Inf	Inf
9/1 (Exit - A1214 Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Exit - Park and Ride Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A12 SB Circ)	4.90	0.00	Y	Arm 7 Ahead	Inf	100.0 %	2105	2105
11/2 (A12 SB Circ)	4.90	0.00	N	Arm 12 Right	Inf	100.0 %	2245	2245
11/3 (A12 SB Circ)	4.70	0.00	Y	Arm 12 Right	Inf	100.0 %	2085	2085

12/1 (Main Road Circ)	4.40	0.00	Y	Arm 8 Ahead	Inf	100.0 %	2055	2055
12/2 (Main Road Circ)	4.40	0.00	Y	Arm 8 Ahead	Inf	100.0 %	2055	2055
12/3 (Main Road Circ)	3.80	0.00	Y	Arm 13 Right	Inf	100.0 %	1995	1995
13/1 (A12 NB Circ)	4.40	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2055	2055
13/2 (A12 NB Circ)	4.40	0.00	Y	Arm 14 Right	Inf	100.0 %	2055	2055
14/1 (A1214 Circ)	4.60	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2075	2075
14/2 (A1214 Circ)	4.40	0.00	N	Arm 15 Right	Inf	100.0 %	2195	2195
14/3 (A1214 Circ)	4.40	0.00	Y	Arm 15 Right	Inf	100.0 %	2055	2055
15/1 (Park and Ride Circ)	4.90	0.00	Y	Arm 6 Ahead	Inf	100.0 %	2105	2105
15/2 (Park and Ride Circ)	4.90	0.00	N	Arm 6 Ahead	Inf	75.7 %	2245	2245
				Arm 11 Right	Inf	24.3 %		
15/3 (Park and Ride Circ)	4.90	0.00	N	Arm 11 Right	Inf	100.0 %	2245	2245
15/4 (Park and Ride Circ)	4.90	0.00	Y	Arm 11 Right	Inf	100.0 %	2105	2105

Scenario 3: '2024 Base + Com Dev + EA3 - PM Peak' (FG3: '2024 Base + Com Dev + EA3 - PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	10	979	237	4	1230
	B	38	0	121	25	0	184
	C	1014	125	0	382	4	1525
	D	253	38	366	0	4	661
	E	0	0	0	0	0	0
	Tot.	1305	173	1466	644	12	3600

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: 2024 Base + Com Dev + EA3 - PM Peak
Junction: A12/A1214/Main Road	
1/1	454
1/2 (with short)	776(In) 535(Out)
1/3 (short)	241
2/1 (short)	121
2/2 (with short)	184(In) 63(Out)
3/1 (short)	386
3/2 (with short)	971(In) 585(Out)
3/3	554
4/1	187
4/2 (with short)	474(In) 108(Out)
4/3 (short)	366
5/1 (short)	0
5/2 (with short)	0(In) 0(Out)
6/1	790
6/2	515
7/1	173
8/1	756
8/2	710
9/1	644
10/1	12
11/1	163
11/2	191
11/3	175
12/1	635
12/2	710
12/3	241
13/1	262
13/2	42
14/1	8
14/2	607
14/3	570
15/1	790
15/2	678

Full Input Data And Results

15/3	191
15/4	175

Full Input Data And Results

Lane Saturation Flows

Junction: A12/A1214/Main Road								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A12 SB)	3.40	0.00	Y	Arm 7 Left	Inf	2.2 %	1955	1955
				Arm 12 Ahead	Inf	97.8 %		
1/2 (A12 SB)	3.50	0.00	N	Arm 12 Ahead	Inf	100.0 %	2105	2105
1/3 (A12 SB)	3.60	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1975	1975
2/1 (Main Road)	4.00	0.00	Y	Arm 8 Left	Inf	100.0 %	2015	2015
2/2 (Main Road)	4.00	0.00	Y	Arm 13 Ahead	Inf	100.0 %	2015	2015
3/1 (A12 NB)	3.80	0.00	Y	Arm 9 Left	Inf	99.0 %	1995	1995
				Arm 14 Ahead	Inf	1.0 %		
3/2 (A12 NB)	3.60	0.00	N	Arm 14 Ahead	Inf	100.0 %	2115	2115
3/3 (A12 NB)	3.70	0.00	Y	Arm 14 Ahead	Inf	100.0 %	1985	1985
4/1 (A1214)	4.10	0.00	Y	Arm 10 U-Turn	Inf	2.1 %	2025	2025
				Arm 15 Left	Inf	97.9 %		
4/2 (A1214)	4.10	0.00	N	Arm 15 Left	Inf	100.0 %	2165	2165
4/3 (A1214)	4.20	0.00	Y	Arm 15 Left	Inf	100.0 %	2035	2035
5/1 (Park and Ride Exit)	4.10	0.00	Y	Arm 6 Left	Inf	0.0 %	2025	2025
5/2 (Park and Ride Exit)	4.00	0.00	Y	Arm 11 Ahead	Inf	0.0 %	2015	2015
6/1 (Exit - A12 NB Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (Exit - A12 NB Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit - Main Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit - A12 SB Lane 1)	Infinite Saturation Flow						Inf	Inf
8/2 (Exit - A12 SB Lane 2)	Infinite Saturation Flow						Inf	Inf
9/1 (Exit - A1214 Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Exit - Park and Ride Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A12 SB Circ)	4.90	0.00	Y	Arm 7 Ahead	Inf	100.0 %	2105	2105
11/2 (A12 SB Circ)	4.90	0.00	N	Arm 12 Right	Inf	100.0 %	2245	2245
11/3 (A12 SB Circ)	4.70	0.00	Y	Arm 12 Right	Inf	100.0 %	2085	2085

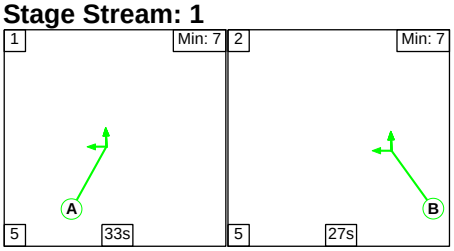
Full Input Data And Results

12/1 (Main Road Circ)	4.40	0.00	Y	Arm 8 Ahead	Inf	100.0 %	2055	2055
12/2 (Main Road Circ)	4.40	0.00	Y	Arm 8 Ahead	Inf	100.0 %	2055	2055
12/3 (Main Road Circ)	3.80	0.00	Y	Arm 13 Right	Inf	100.0 %	1995	1995
13/1 (A12 NB Circ)	4.40	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2055	2055
13/2 (A12 NB Circ)	4.40	0.00	Y	Arm 14 Right	Inf	100.0 %	2055	2055
14/1 (A1214 Circ)	4.60	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2075	2075
14/2 (A1214 Circ)	4.40	0.00	N	Arm 15 Right	Inf	100.0 %	2195	2195
14/3 (A1214 Circ)	4.40	0.00	Y	Arm 15 Right	Inf	100.0 %	2055	2055
15/1 (Park and Ride Circ)	4.90	0.00	Y	Arm 6 Ahead	Inf	100.0 %	2105	2105
15/2 (Park and Ride Circ)	4.90	0.00	N	Arm 6 Ahead	Inf	76.0 %	2245	2245
				Arm 11 Right	Inf	24.0 %		
15/3 (Park and Ride Circ)	4.90	0.00	N	Arm 11 Right	Inf	100.0 %	2245	2245
15/4 (Park and Ride Circ)	4.90	0.00	Y	Arm 11 Right	Inf	100.0 %	2105	2105

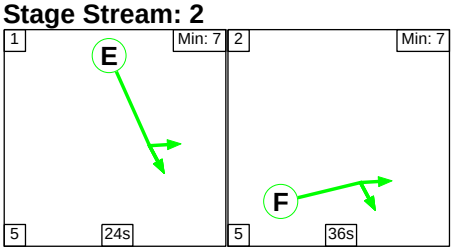
Scenario 1: '2017 Survey (No Park and Ride) - PM Peak' (FG1: '2017 Survey (No Park and Ride) - PM Peak', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

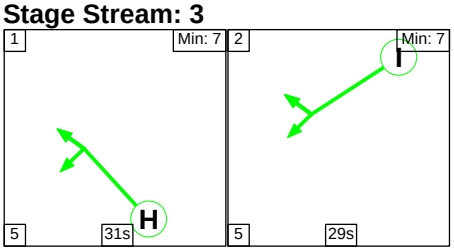
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Full Input Data And Results

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	33	27
Change Point	13	51

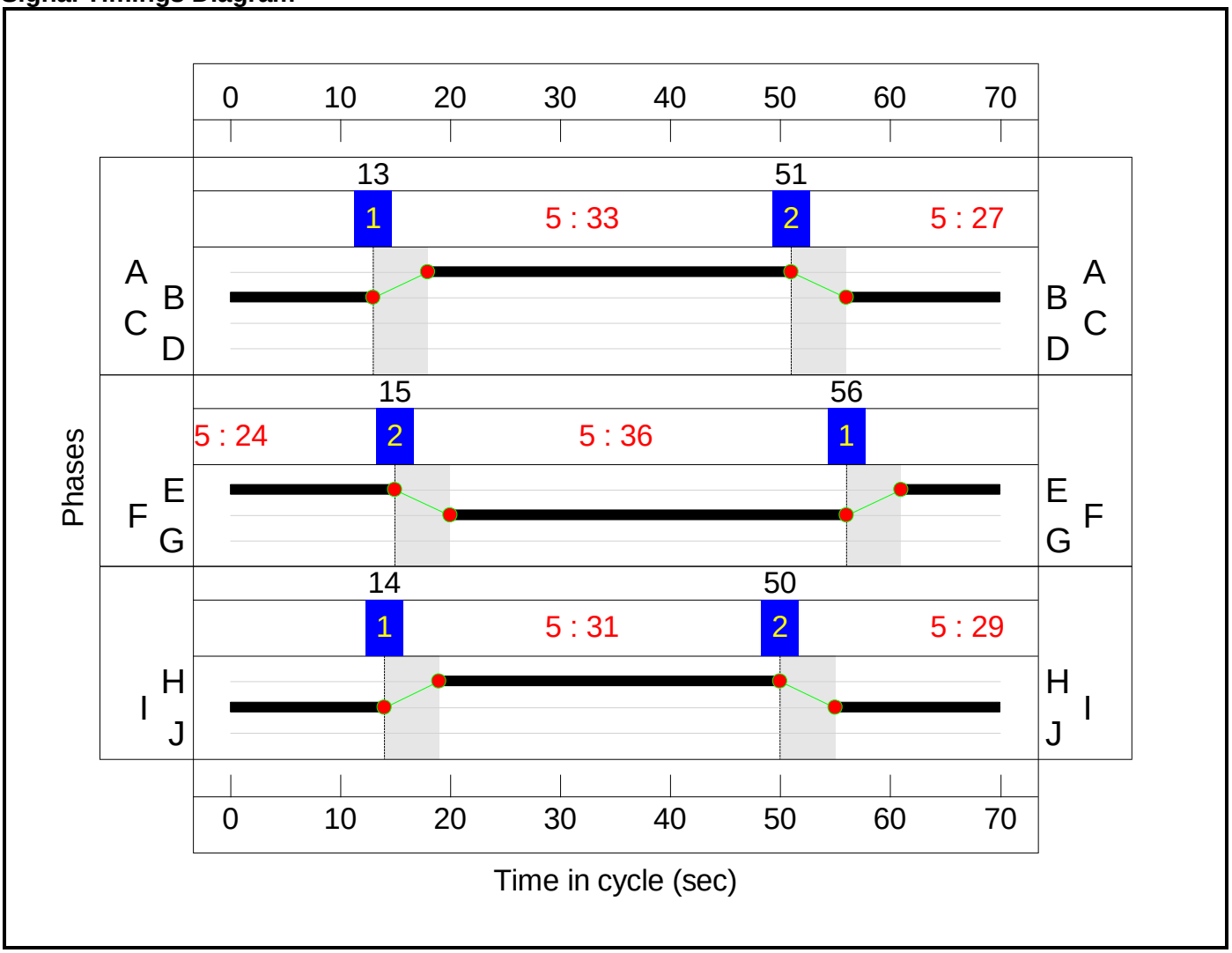
Stage Stream: 2

Stage	1	2
Duration	24	36
Change Point	56	15

Stage Stream: 3

Stage	1	2
Duration	31	29
Change Point	14	50

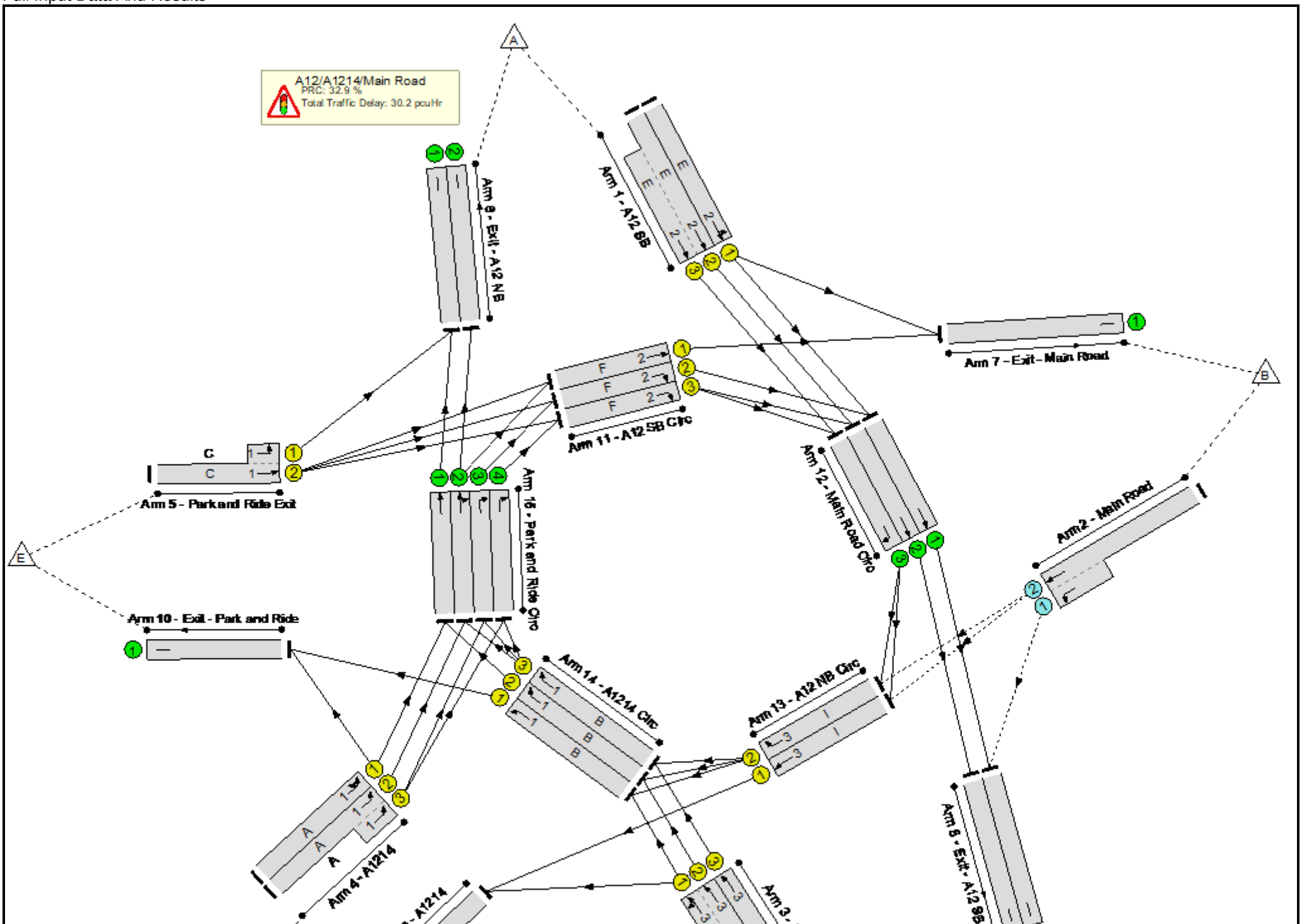
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**67.7%**
A12/A1214/Main Road	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**67.7%**
1/1	A12 SB Left Ahead	U	2	N/A	E		1	24	-	413	1955	698	59.2%
1/2+1/3	A12 SB Ahead	U	2	N/A	E		1	24	-	725	2105:1975	1070	67.7%
2/2+2/1	Main Road Left Ahead	O	N/A	N/A	-		-	-	-	168	2015:2015	875	19.2%
3/2+3/1	A12 NB Left Ahead	U	3	N/A	H		1	31	-	900	2115:1995	1479	60.8%
3/3	A12 NB Ahead	U	3	N/A	H		1	31	-	512	1985	907	56.4%
4/1	A1214 U-Turn Left	U	1	N/A	A		1	33	-	172	2025	984	17.5%
4/2+4/3	A1214 Left	U	1	N/A	A		1	33	-	449	2165:2035	1067	42.1%
5/2+5/1	Park and Ride Exit Left Ahead	U	1	N/A	C		0	0	-	0	2015:2025	0	0.0%
6/1	Exit - A12 NB	U	N/A	N/A	-		-	-	-	730	Inf	Inf	0.0%
6/2	Exit - A12 NB	U	N/A	N/A	-		-	-	-	490	Inf	Inf	0.0%
7/1	Exit - Main Road	U	N/A	N/A	-		-	-	-	154	Inf	Inf	0.0%
8/1	Exit - A12 SB	U	N/A	N/A	-		-	-	-	692	Inf	Inf	0.0%
8/2	Exit - A12 SB	U	N/A	N/A	-		-	-	-	662	Inf	Inf	0.0%
9/1	Exit - A1214	U	N/A	N/A	-		-	-	-	599	Inf	Inf	0.0%
10/1	Exit - Park and Ride	U	N/A	N/A	-		-	-	-	12	Inf	Inf	0.0%
11/1	A12 SB Circ Ahead	U	2	N/A	F		1	36	-	145	2105	1113	13.0%
11/2	A12 SB Circ Right	U	2	N/A	F		1	36	-	178	2245	1187	15.0%
11/3	A12 SB Circ Right	U	2	N/A	F		1	36	-	163	2085	1102	14.8%

Full Input Data And Results

12/1	Main Road Circ Ahead	U	N/A	N/A	-		-	-	-	582	2055	2055	28.3%
12/2	Main Road Circ Ahead	U	N/A	N/A	-		-	-	-	662	2055	2055	32.2%
12/3	Main Road Circ Right	U	N/A	N/A	-		-	-	-	226	1995	1995	11.3%
13/1	A12 NB Circ Ahead	U	3	N/A	I		1	29	-	245	2055	881	27.8%
13/2	A12 NB Circ Right	U	3	N/A	I		1	29	-	39	2055	881	4.4%
14/1	A1214 Circ Ahead	U	1	N/A	B		1	27	-	8	2075	830	1.0%
14/2	A1214 Circ Right	U	1	N/A	B		1	27	-	562	2195	878	64.0%
14/3	A1214 Circ Right	U	1	N/A	B		1	27	-	527	2055	822	64.1%
15/1	Park and Ride Circ Ahead	U	N/A	N/A	-		-	-	-	730	2105	2105	34.7%
15/2	Park and Ride Circ Ahead Right	U	N/A	N/A	-		-	-	-	635	2245	2245	28.3%
15/3	Park and Ride Circ Right	U	N/A	N/A	-		-	-	-	178	2245	2245	7.9%
15/4	Park and Ride Circ Right	U	N/A	N/A	-		-	-	-	163	2105	2105	7.7%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**336**	**0**	**0**	**23.2**	**7.1**	**0.0**	**30.2**	**-**	**-**	**-**	**-**
A12/A1214/Main Road	**-**	**-**	**336**	**0**	**0**	**23.2**	**7.1**	**0.0**	**30.2**	**-**	**-**	**-**	**-**
1/1	413	413	-	-	-	2.1	0.7	-	2.8	24.6	6.5	0.7	7.3
1/2+1/3	725	725	-	-	-	3.7	1.0	-	4.7	23.3	8.0	1.0	9.1
2/2+2/1	168	168	336	0	0	0.1	0.1	-	0.2	4.1	0.4	0.1	0.5
3/2+3/1	900	900	-	-	-	3.3	0.8	-	4.1	16.5	7.7	0.8	8.5
3/3	512	512	-	-	-	2.0	0.6	-	2.6	18.4	7.3	0.6	7.9
4/1	172	172	-	-	-	0.5	0.1	-	0.6	12.4	1.9	0.1	2.0
4/2+4/3	449	449	-	-	-	1.4	0.4	-	1.7	13.8	4.3	0.4	4.7
5/2+5/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	730	730	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	490	490	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	154	154	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	692	692	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	662	662	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	599	599	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	12	12	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	145	145	-	-	-	0.6	0.1	-	0.7	17.8	2.2	0.1	2.3
11/2	178	178	-	-	-	0.0	0.1	-	0.1	2.6	0.1	0.1	0.2
11/3	163	163	-	-	-	0.0	0.1	-	0.1	2.7	0.1	0.1	0.2
12/1	582	582	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.2	0.2
12/2	662	662	-	-	-	0.0	0.2	-	0.2	1.3	3.5	0.2	3.7
12/3	226	226	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
13/1	245	245	-	-	-	0.5	0.2	-	0.7	10.1	1.1	0.2	1.3
13/2	39	39	-	-	-	0.2	0.0	-	0.2	18.3	0.5	0.0	0.5
14/1	8	8	-	-	-	0.0	0.0	-	0.0	16.2	0.1	0.0	0.1

Full Input Data And Results

14/2	562	562	-	-	-	4.5	0.9	-	5.4	34.4	10.9	0.9	11.8
14/3	527	527	-	-	-	4.2	0.9	-	5.1	35.0	10.2	0.9	11.1
15/1	730	730	-	-	-	0.0	0.3	-	0.3	1.5	8.5	0.3	8.7
15/2	635	635	-	-	-	0.0	0.2	-	0.2	1.1	0.0	0.2	0.2
15/3	178	178	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0
15/4	163	163	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0

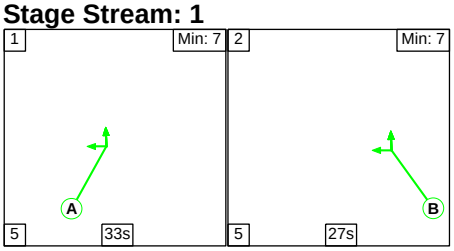
C1	Stream: 1 PRC for Signalled Lanes (%):	40.4	Total Delay for Signalled Lanes (pcuHr):	12.84	Cycle Time (s):	70
C1	Stream: 2 PRC for Signalled Lanes (%):	32.9	Total Delay for Signalled Lanes (pcuHr):	8.49	Cycle Time (s):	70
C1	Stream: 3 PRC for Signalled Lanes (%):	47.9	Total Delay for Signalled Lanes (pcuHr):	7.62	Cycle Time (s):	70
	PRC Over All Lanes (%):	32.9	Total Delay Over All Lanes(pcuHr):	30.22		

Full Input Data And Results

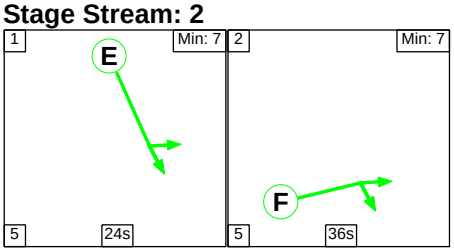
Scenario 2: '2024 Base + Com Dev - PM Peak' (FG2: '2024 Base + Com Dev - PM Peak', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

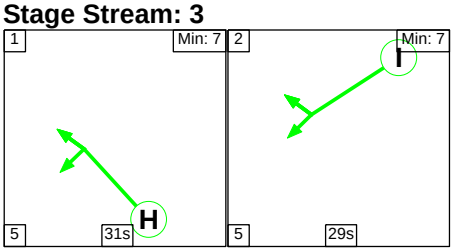
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	33	27
Change Point	13	51

Stage Stream: 2

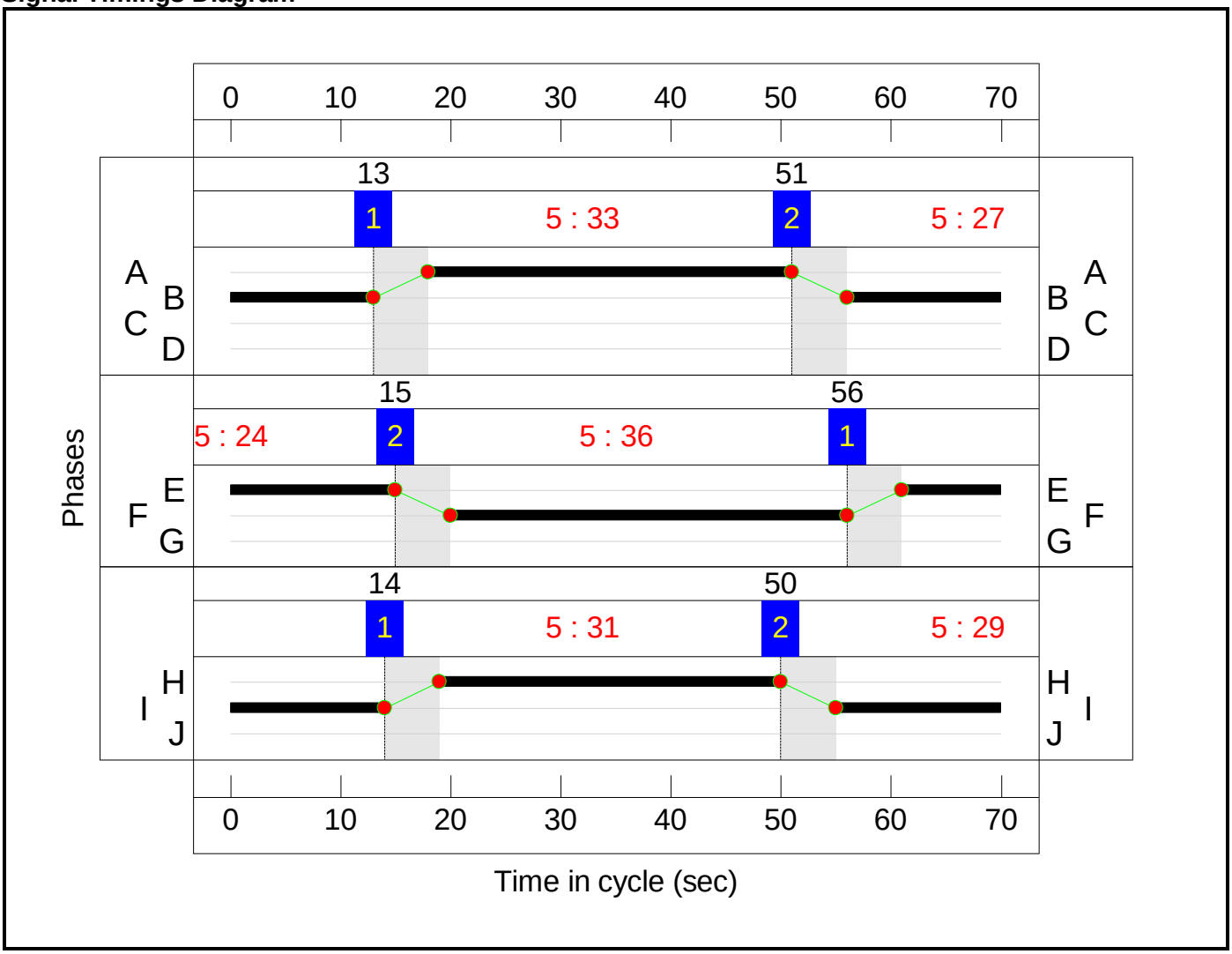
Stage	1	2
Duration	24	36
Change Point	56	15

Stage Stream: 3

Stage	1	2
Duration	31	29
Change Point	14	50

Full Input Data And Results

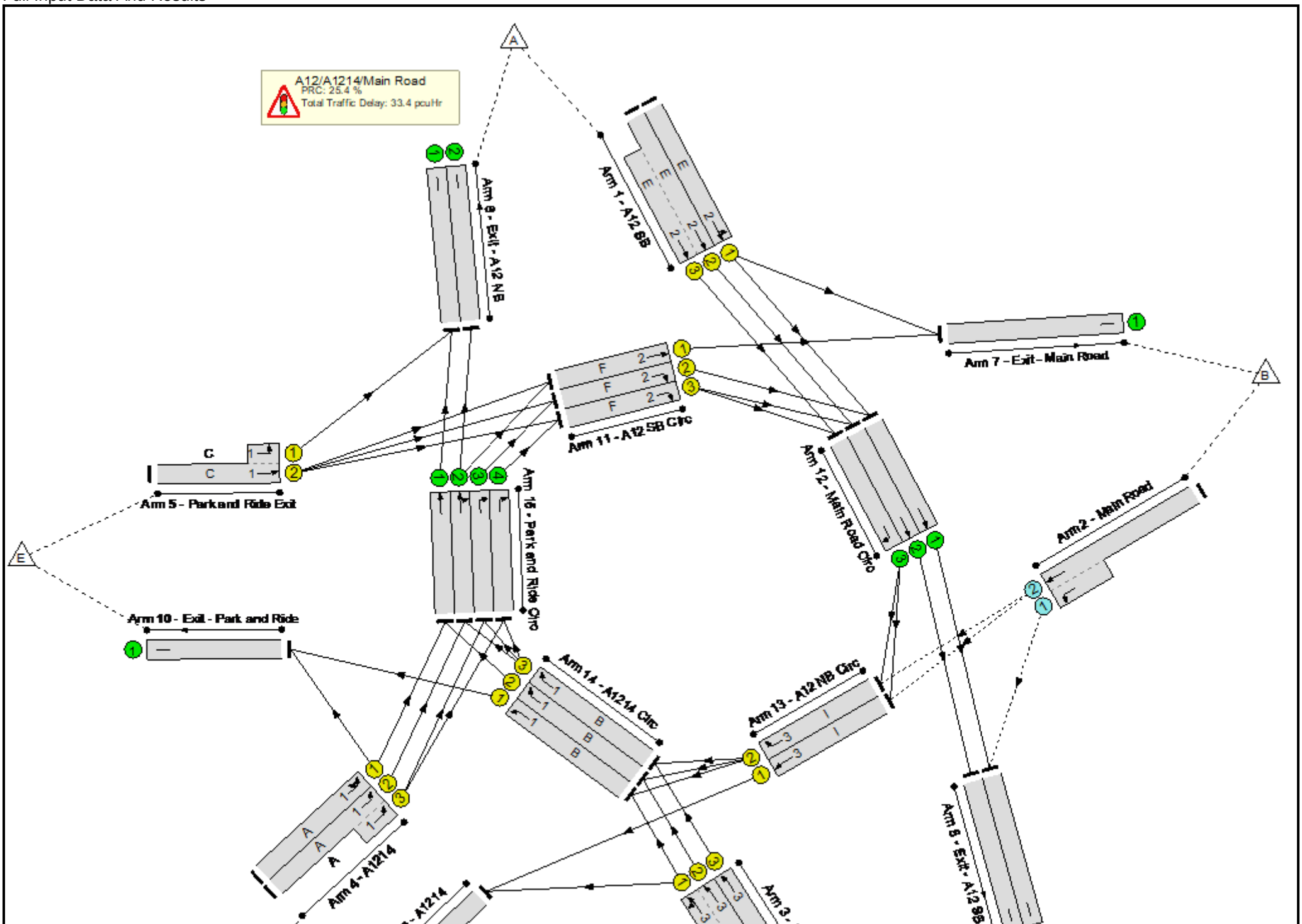
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.8%**
A12/A1214/Main Road	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.8%**
1/1	A12 SB Left Ahead	U	2	N/A	E		1	24	-	447	1955	698	64.0%
1/2+1/3	A12 SB Ahead	U	2	N/A	E		1	24	-	765	2105:1975	1066	71.8%
2/2+2/1	Main Road Left Ahead	O	N/A	N/A	-		-	-	-	184	2015:2015	838	21.9%
3/2+3/1	A12 NB Left Ahead	U	3	N/A	H		1	31	-	959	2115:1995	1478	64.9%
3/3	A12 NB Ahead	U	3	N/A	H		1	31	-	547	1985	907	60.3%
4/1	A1214 U-Turn Left	U	1	N/A	A		1	33	-	187	2025	984	19.0%
4/2+4/3	A1214 Left	U	1	N/A	A		1	33	-	474	2165:2035	1063	44.6%
5/2+5/1	Park and Ride Exit Left Ahead	U	1	N/A	C		0	0	-	0	2015:2025	0	0.0%
6/1	Exit - A12 NB	U	N/A	N/A	-		-	-	-	783	Inf	Inf	0.0%
6/2	Exit - A12 NB	U	N/A	N/A	-		-	-	-	508	Inf	Inf	0.0%
7/1	Exit - Main Road	U	N/A	N/A	-		-	-	-	173	Inf	Inf	0.0%
8/1	Exit - A12 SB	U	N/A	N/A	-		-	-	-	749	Inf	Inf	0.0%
8/2	Exit - A12 SB	U	N/A	N/A	-		-	-	-	704	Inf	Inf	0.0%
9/1	Exit - A1214	U	N/A	N/A	-		-	-	-	634	Inf	Inf	0.0%
10/1	Exit - Park and Ride	U	N/A	N/A	-		-	-	-	12	Inf	Inf	0.0%
11/1	A12 SB Circ Ahead	U	2	N/A	F		1	36	-	163	2105	1113	14.6%
11/2	A12 SB Circ Right	U	2	N/A	F		1	36	-	191	2245	1187	16.1%
11/3	A12 SB Circ Right	U	2	N/A	F		1	36	-	175	2085	1102	15.9%

Full Input Data And Results

12/1	Main Road Circ Ahead	U	N/A	N/A	-		-	-	-	628	2055	2055	30.6%
12/2	Main Road Circ Ahead	U	N/A	N/A	-		-	-	-	704	2055	2055	34.3%
12/3	Main Road Circ Right	U	N/A	N/A	-		-	-	-	236	1995	1995	11.8%
13/1	A12 NB Circ Ahead	U	3	N/A	I		1	29	-	257	2055	881	29.2%
13/2	A12 NB Circ Right	U	3	N/A	I		1	29	-	42	2055	881	4.8%
14/1	A1214 Circ Ahead	U	1	N/A	B		1	27	-	8	2075	830	1.0%
14/2	A1214 Circ Right	U	1	N/A	B		1	27	-	600	2195	878	68.3%
14/3	A1214 Circ Right	U	1	N/A	B		1	27	-	563	2055	822	68.5%
15/1	Park and Ride Circ Ahead	U	N/A	N/A	-		-	-	-	783	2105	2105	37.2%
15/2	Park and Ride Circ Ahead Right	U	N/A	N/A	-		-	-	-	671	2245	2245	29.9%
15/3	Park and Ride Circ Right	U	N/A	N/A	-		-	-	-	191	2245	2245	8.5%
15/4	Park and Ride Circ Right	U	N/A	N/A	-		-	-	-	175	2105	2105	8.3%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**368**	**0**	**0**	**25.1**	**8.3**	**0.0**	**33.4**	**-**	**-**	**-**	**-**
A12/A1214/Main Road	**-**	**-**	**368**	**0**	**0**	**25.1**	**8.3**	**0.0**	**33.4**	**-**	**-**	**-**	**-**
1/1	447	447	-	-	-	2.3	0.9	-	3.2	25.9	7.2	0.9	8.1
1/2+1/3	765	765	-	-	-	3.9	1.3	-	5.2	24.4	8.8	1.3	10.1
2/2+2/1	184	184	368	0	0	0.1	0.1	-	0.2	4.7	0.5	0.1	0.6
3/2+3/1	959	959	-	-	-	3.6	0.9	-	4.5	17.1	8.3	0.9	9.3
3/3	547	547	-	-	-	2.2	0.8	-	2.9	19.2	7.9	0.8	8.7
4/1	187	187	-	-	-	0.5	0.1	-	0.6	12.5	2.0	0.1	2.1
4/2+4/3	474	474	-	-	-	1.5	0.4	-	1.9	14.1	4.8	0.4	5.3
5/2+5/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	783	783	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	508	508	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	173	173	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	749	749	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	704	704	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	634	634	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	12	12	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	163	163	-	-	-	0.7	0.1	-	0.8	17.6	2.5	0.1	2.5
11/2	191	191	-	-	-	0.0	0.1	-	0.1	2.6	0.1	0.1	0.2
11/3	175	175	-	-	-	0.0	0.1	-	0.1	2.7	0.1	0.1	0.2
12/1	628	628	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
12/2	704	704	-	-	-	0.0	0.3	-	0.3	1.3	4.1	0.3	4.3
12/3	236	236	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
13/1	257	257	-	-	-	0.5	0.2	-	0.7	10.1	1.2	0.2	1.4
13/2	42	42	-	-	-	0.2	0.0	-	0.2	17.8	0.6	0.0	0.6
14/1	8	8	-	-	-	0.0	0.0	-	0.0	16.2	0.1	0.0	0.1

Full Input Data And Results

14/2	600	600	-	-	-	4.8	1.1	-	5.9	35.4	11.7	1.1	12.7
14/3	563	563	-	-	-	4.6	1.1	-	5.6	36.1	10.9	1.1	12.0
15/1	783	783	-	-	-	0.0	0.3	-	0.3	1.5	9.4	0.3	9.7
15/2	671	671	-	-	-	0.0	0.2	-	0.2	1.1	0.0	0.2	0.2
15/3	191	191	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0
15/4	175	175	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0

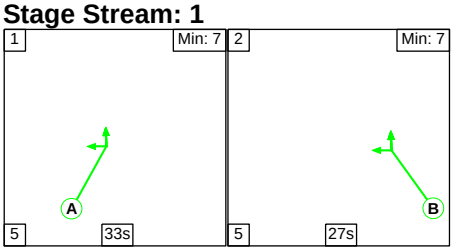
C1	Stream: 1 PRC for Signalled Lanes (%):	31.4	Total Delay for Signalled Lanes (pcuHr):	14.09	Cycle Time (s): 70
C1	Stream: 2 PRC for Signalled Lanes (%):	25.4	Total Delay for Signalled Lanes (pcuHr):	9.46	Cycle Time (s): 70
C1	Stream: 3 PRC for Signalled Lanes (%):	38.7	Total Delay for Signalled Lanes (pcuHr):	8.40	Cycle Time (s): 70
	PRC Over All Lanes (%):	25.4	Total Delay Over All Lanes(pcuHr):	33.38	

Full Input Data And Results

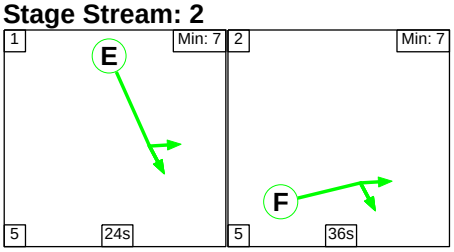
Scenario 3: '2024 Base + Com Dev + EA3 - PM Peak' (FG3: '2024 Base + Com Dev + EA3 - PM Peak', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

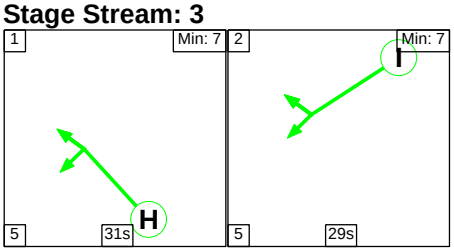
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	33	27
Change Point	13	51

Stage Stream: 2

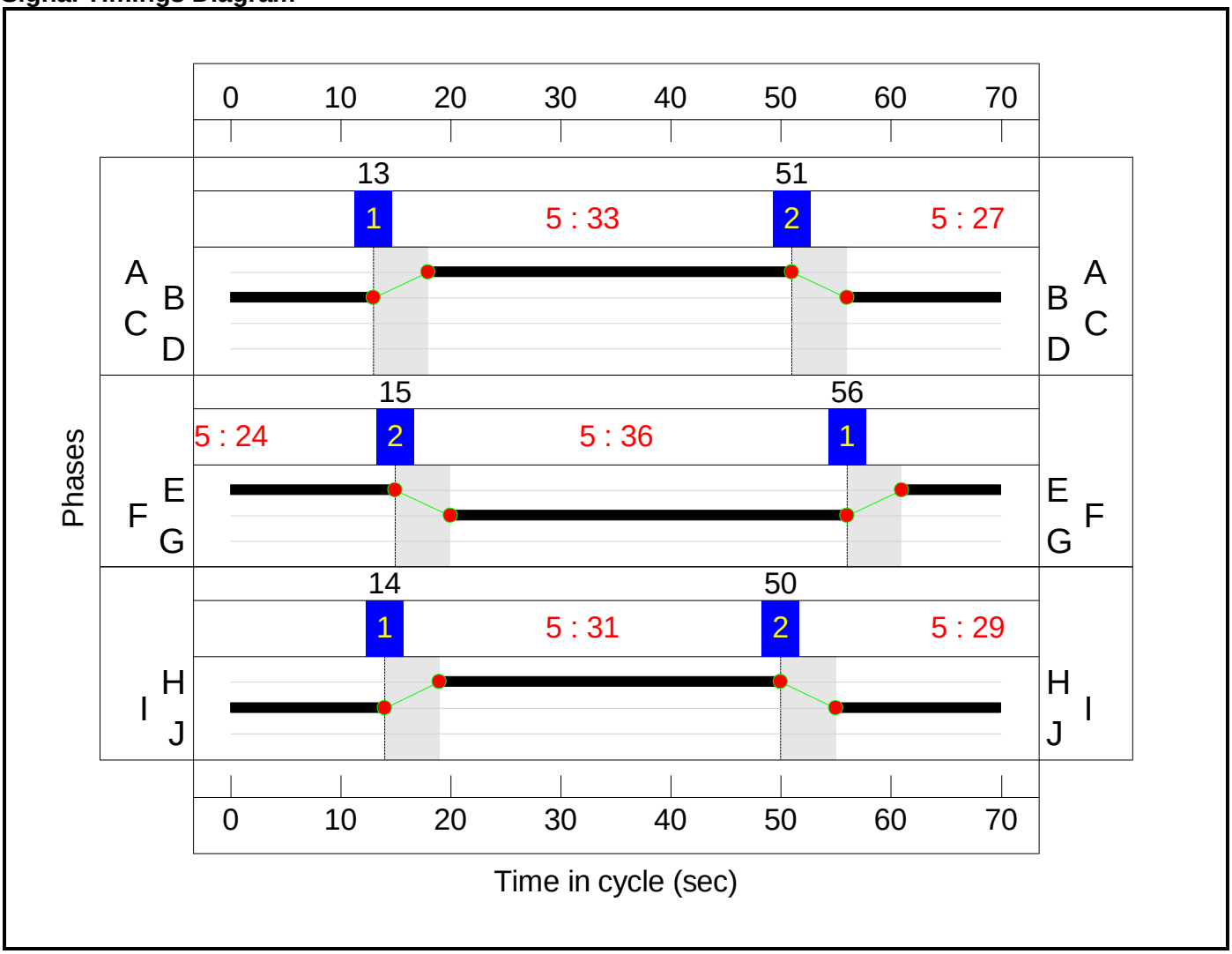
Stage	1	2
Duration	24	36
Change Point	56	15

Stage Stream: 3

Stage	1	2
Duration	31	29
Change Point	14	50

Full Input Data And Results

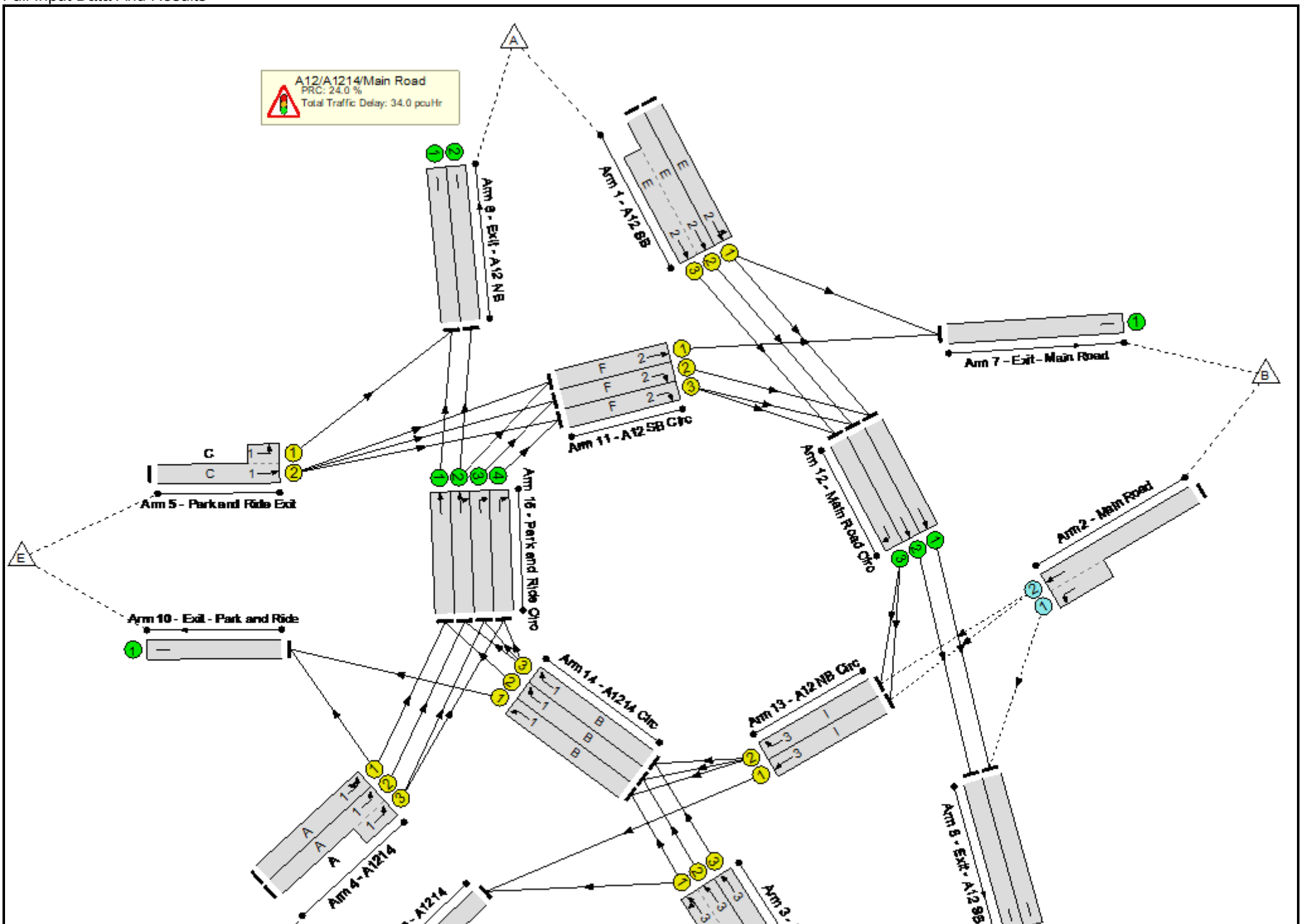
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**72.6%**
A12/A1214/Main Road	-	-	**N/A**	-	-		-	-	-	-	-	-	**72.6%**
1/1	A12 SB Left Ahead	U	2	N/A	E		1	24	-	454	1955	698	65.0%
1/2+1/3	A12 SB Ahead	U	2	N/A	E		1	24	-	776	2105:1975	1069	72.6%
2/2+2/1	Main Road Left Ahead	O	N/A	N/A	-		-	-	-	184	2015:2015	833	22.1%
3/2+3/1	A12 NB Left Ahead	U	3	N/A	H		1	31	-	971	2115:1995	1479	65.7%
3/3	A12 NB Ahead	U	3	N/A	H		1	31	-	554	1985	907	61.1%
4/1	A1214 U-Turn Left	U	1	N/A	A		1	33	-	187	2025	984	19.0%
4/2+4/3	A1214 Left	U	1	N/A	A		1	33	-	474	2165:2035	1063	44.6%
5/2+5/1	Park and Ride Exit Left Ahead	U	1	N/A	C		0	0	-	0	2015:2025	0	0.0%
6/1	Exit - A12 NB	U	N/A	N/A	-		-	-	-	790	Inf	Inf	0.0%
6/2	Exit - A12 NB	U	N/A	N/A	-		-	-	-	515	Inf	Inf	0.0%
7/1	Exit - Main Road	U	N/A	N/A	-		-	-	-	173	Inf	Inf	0.0%
8/1	Exit - A12 SB	U	N/A	N/A	-		-	-	-	756	Inf	Inf	0.0%
8/2	Exit - A12 SB	U	N/A	N/A	-		-	-	-	710	Inf	Inf	0.0%
9/1	Exit - A1214	U	N/A	N/A	-		-	-	-	644	Inf	Inf	0.0%
10/1	Exit - Park and Ride	U	N/A	N/A	-		-	-	-	12	Inf	Inf	0.0%
11/1	A12 SB Circ Ahead	U	2	N/A	F		1	36	-	163	2105	1113	14.6%
11/2	A12 SB Circ Right	U	2	N/A	F		1	36	-	191	2245	1187	16.1%
11/3	A12 SB Circ Right	U	2	N/A	F		1	36	-	175	2085	1102	15.9%

Full Input Data And Results

12/1	Main Road Circ Ahead	U	N/A	N/A	-		-	-	-	635	2055	2055	30.9%
12/2	Main Road Circ Ahead	U	N/A	N/A	-		-	-	-	710	2055	2055	34.5%
12/3	Main Road Circ Right	U	N/A	N/A	-		-	-	-	241	1995	1995	12.1%
13/1	A12 NB Circ Ahead	U	3	N/A	I		1	29	-	262	2055	881	29.7%
13/2	A12 NB Circ Right	U	3	N/A	I		1	29	-	42	2055	881	4.8%
14/1	A1214 Circ Ahead	U	1	N/A	B		1	27	-	8	2075	830	1.0%
14/2	A1214 Circ Right	U	1	N/A	B		1	27	-	607	2195	878	69.1%
14/3	A1214 Circ Right	U	1	N/A	B		1	27	-	570	2055	822	69.3%
15/1	Park and Ride Circ Ahead	U	N/A	N/A	-		-	-	-	790	2105	2105	37.5%
15/2	Park and Ride Circ Ahead Right	U	N/A	N/A	-		-	-	-	678	2245	2245	30.2%
15/3	Park and Ride Circ Right	U	N/A	N/A	-		-	-	-	191	2245	2245	8.5%
15/4	Park and Ride Circ Right	U	N/A	N/A	-		-	-	-	175	2105	2105	8.3%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**368**	**0**	**0**	**25.4**	**8.5**	**0.0**	**34.0**	**-**	**-**	**-**	**-**
A12/A1214/Main Road	**-**	**-**	**368**	**0**	**0**	**25.4**	**8.5**	**0.0**	**34.0**	**-**	**-**	**-**	**-**
1/1	454	454	-	-	-	2.4	0.9	-	3.3	26.2	7.3	0.9	8.2
1/2+1/3	776	776	-	-	-	4.0	1.3	-	5.3	24.6	8.9	1.3	10.2
2/2+2/1	184	184	368	0	0	0.1	0.1	-	0.2	4.8	0.5	0.1	0.6
3/2+3/1	971	971	-	-	-	3.7	1.0	-	4.6	17.2	8.4	1.0	9.4
3/3	554	554	-	-	-	2.2	0.8	-	3.0	19.4	8.0	0.8	8.8
4/1	187	187	-	-	-	0.5	0.1	-	0.6	12.5	2.0	0.1	2.1
4/2+4/3	474	474	-	-	-	1.5	0.4	-	1.9	14.1	4.8	0.4	5.3
5/2+5/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	790	790	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	515	515	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	173	173	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	756	756	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	710	710	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	644	644	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	12	12	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	163	163	-	-	-	0.7	0.1	-	0.8	17.5	2.5	0.1	2.5
11/2	191	191	-	-	-	0.0	0.1	-	0.1	2.6	0.1	0.1	0.2
11/3	175	175	-	-	-	0.0	0.1	-	0.1	2.7	0.1	0.1	0.2
12/1	635	635	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
12/2	710	710	-	-	-	0.0	0.3	-	0.3	1.4	4.1	0.3	4.3
12/3	241	241	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
13/1	262	262	-	-	-	0.5	0.2	-	0.7	10.1	1.2	0.2	1.4
13/2	42	42	-	-	-	0.2	0.0	-	0.2	17.6	0.6	0.0	0.6
14/1	8	8	-	-	-	0.0	0.0	-	0.0	16.2	0.1	0.0	0.1

Full Input Data And Results

14/2	607	607	-	-	-	4.9	1.1	-	6.0	35.6	11.8	1.1	12.9
14/3	570	570	-	-	-	4.6	1.1	-	5.8	36.4	11.1	1.1	12.2
15/1	790	790	-	-	-	0.0	0.3	-	0.3	1.5	9.5	0.3	9.8
15/2	678	678	-	-	-	0.0	0.2	-	0.2	1.1	0.0	0.2	0.2
15/3	191	191	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0
15/4	175	175	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0

C1	Stream: 1 PRC for Signalled Lanes (%):	29.8	Total Delay for Signalled Lanes (pcuHr):	14.31	Cycle Time (s):	70
C1	Stream: 2 PRC for Signalled Lanes (%):	24.0	Total Delay for Signalled Lanes (pcuHr):	9.66	Cycle Time (s):	70
C1	Stream: 3 PRC for Signalled Lanes (%):	37.1	Total Delay for Signalled Lanes (pcuHr):	8.57	Cycle Time (s):	70
	PRC Over All Lanes (%):	24.0	Total Delay Over All Lanes(pcuHr):	33.99		

APPENDIX 06

ARCADY Results (A12/Newbourne Road)

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
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Filename: 20220120_A12_Foxhall_Road_2016_base_Updated HGV.j9
Path: \\euafs\SHEFS\SHE\AMA Sheffield\Projects\Scottish Power Renewables - 00481\404.05356.00006 - East Anglia offshore wind farms\EA3\A12 Corridor TAs\A12_Foxhall Road Roundabout
Report generation date: 20/01/2022 13:16:33

Summary of junction performance

	PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2024 Base + Com Dev				
Arm 1	D1	215.8	393.48	1.21	F
Arm 2		8.3	91.10	0.94	F
Arm 3		246.7	425.48	1.22	F
Arm 4		6.2	60.29	0.88	F
	2024 Base + Com Dev + EA3				
Arm 1	D2	224.0	411.12	1.21	F
Arm 2		12.6	126.69	0.99	F
Arm 3		253.3	441.66	1.23	F
Arm 4		6.5	63.22	0.89	F

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	A12/ Foxhall Road Roundabout
Location	Ipswich
Site number	
Date	13/01/2022
Version	1
Status	(new file)
Identifier	
Client	SPR
Jobnumber	404.05356.00006
Enumerator	SLR\llong
Description	

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024 Base + Com Dev	PM	ONE HOUR	16:45	18:15	15

2024 Base + Com Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A12/ Foxhall Road	Standard Roundabout		1, 2, 3, 4	365.26	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A12 N	
2	Newbourne Road	
3	A12 S	
4	Foxhall Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	6.09	7.72	1.0	43.3	72.9	16.0	
2	3.93	3.93	9.4	25.1	72.9	30.0	
3	7.72	7.86	3.0	23.5	72.9	23.0	
4	3.57	4.12	16.2	27.5	72.9	19.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.568	2069
2	0.420	1202
3	0.617	2452
4	0.443	1295

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	2112	100.000
2		✓	320	100.000
3		✓	2290	100.000
4		✓	360	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	109	1555	448
	2	132	0	117	71
	3	1874	86	0	330
	4	205	28	127	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	3	4	4
	2	1	0	2	2
	3	3	2	0	5
	4	2	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	1.21	393.48	215.8	F
2	0.94	91.10	8.3	F
3	1.22	425.48	246.7	F
4	0.88	60.29	6.2	F

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1590	179	1967	0.808	1573	4.1	9.124	A
2	241	1587	536	0.449	238	0.8	12.118	B
3	1724	485	2153	0.801	1708	4.0	8.097	A
4	271	1560	603	0.450	268	0.8	10.897	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1899	213	1948	0.975	1848	16.8	28.446	D
2	288	1865	419	0.686	283	2.0	25.878	D
3	2059	571	2099	0.981	2001	18.4	28.156	D
4	324	1829	483	0.669	319	1.9	21.864	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	2325	242	1931	1.204	1927	116.5	131.743	F
2	352	1962	379	0.930	334	6.6	64.677	F
3	2521	621	2069	1.219	2065	132.4	138.118	F
4	396	1906	450	0.882	383	5.3	47.722	E

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	2325	247	1928	1.206	1928	215.8	314.206	F
2	352	1967	377	0.935	345	8.3	91.104	F
3	2521	628	2065	1.221	2064	246.7	334.097	F
4	396	1909	448	0.885	393	6.2	60.286	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1899	223	1942	0.978	1933	207.3	393.480	F
2	288	1952	383	0.751	307	3.5	54.459	F
3	2059	605	2079	0.990	2070	243.8	425.483	F
4	324	1899	453	0.715	337	2.8	34.612	D

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1590	197	1956	0.813	1947	118.1	301.845	F
2	241	1944	387	0.623	248	1.8	27.509	D
3	1724	570	2100	0.821	2091	152.0	341.423	F
4	271	1892	456	0.595	276	1.6	21.057	C

APPENDIX 07

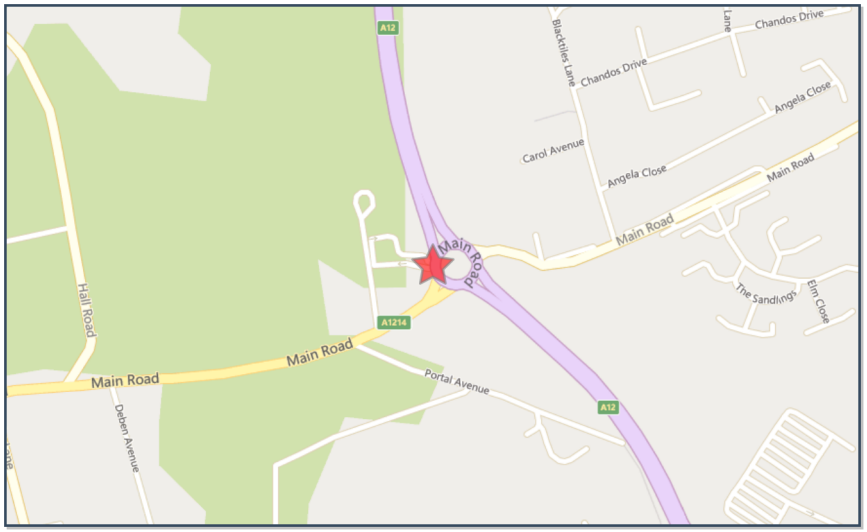
Crashmap Reports

crashmap.co.uk

Validated Data

Crash Date:	Saturday, March 07, 2015	**Time of Crash:**	3:13:00 PM	**Crash Reference:**	**201537EA88591**

Highest Injury Severity:	Serious	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	1
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	624136 246303
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	50				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Auto traffic signal				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 500cc	14	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Did not impact	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	21 - 25	Unknown or other	Unknown or other

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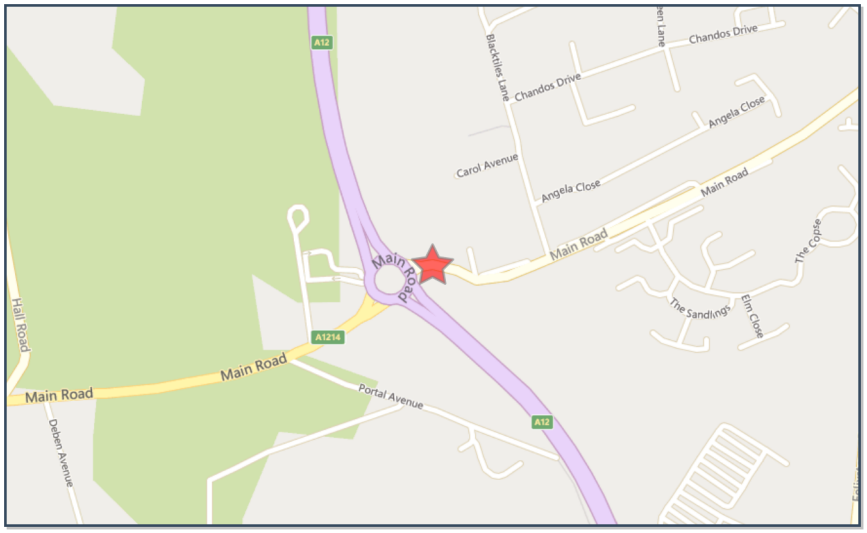
Validated Data

Crash Date:	Wednesday, November 16, 2016	**Time of Crash:**	9:33:00 AM	**Crash Reference:**	**2016370133654**
Highest Injury Severity:	Serious	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	624235 246324
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	60				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	10	Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
2	Car (excluding private hire)	-1	Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Vehicle or pillion passenger	Male	Over 75	Unknown or other	Unknown or other

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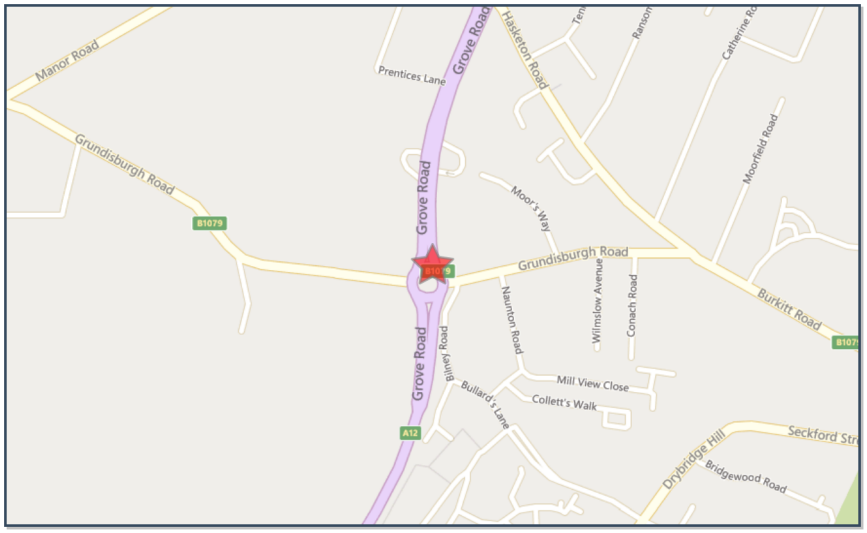
Validated Data

Crash Date:	Monday, May 04, 2015	**Time of Crash:**	12:05:00 PM	**Crash Reference:**	**201537EA90007**

Highest Injury Severity:	Slight	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	626029 249352
Weather Description:	Unknown				
Road Surface Description:	Dry				
Speed Limit:	40				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	35	Unknown	Unknown	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)	11	Female	56 - 65	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	56 - 65	Unknown or other	Unknown or other

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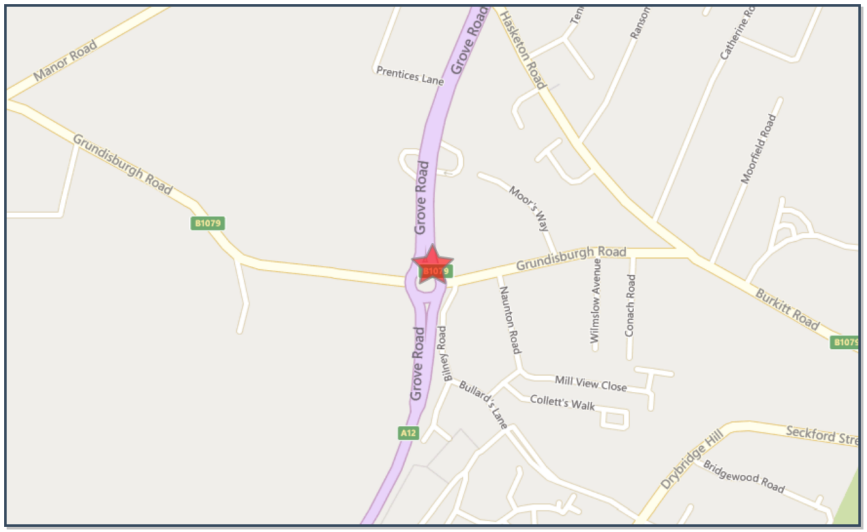
Validated Data

Crash Date:	Saturday, September 19, 2015	**Time of Crash:**	7:55:00 AM	**Crash Reference:**	**201537EA93865**

Highest Injury Severity:	Slight	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	626032 249346
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	40				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	4	Female	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Pedal cycle	-1	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

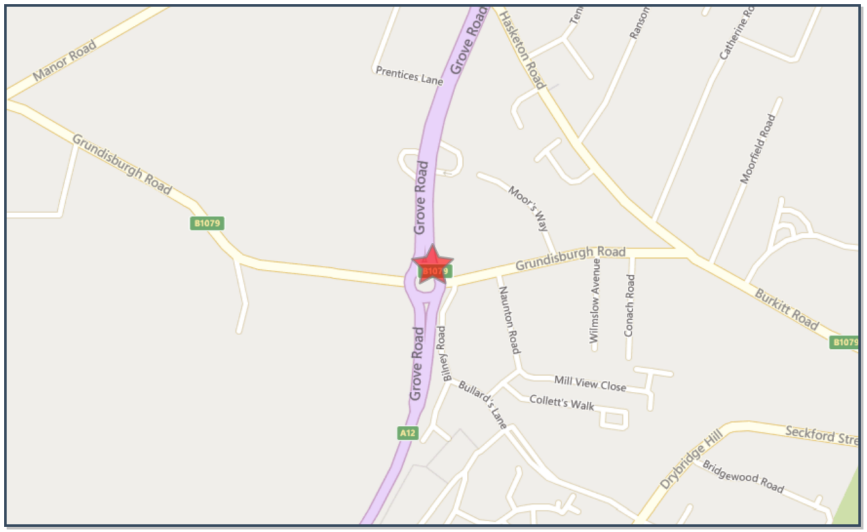
Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

crashmap.co.uk

Validated Data

Crash Date:	Monday, November 30, 2015	**Time of Crash:**	1:20:00 PM	**Crash Reference:**	**201537EA95849**

Highest Injury Severity:	Slight	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	626033 249352
Weather Description:	Raining with high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	40				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Van or goods vehicle 3.5 tonnes mgw and under	1	Male	56 - 65	Vehicle is slowing down or stopping	Front	Journey as part of work	None	None
2	Car (excluding private hire)	6	Female	21 - 25	Vehicle is waiting to proceed normally but is held up	Back	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	21 - 25	Unknown or other	Unknown or other

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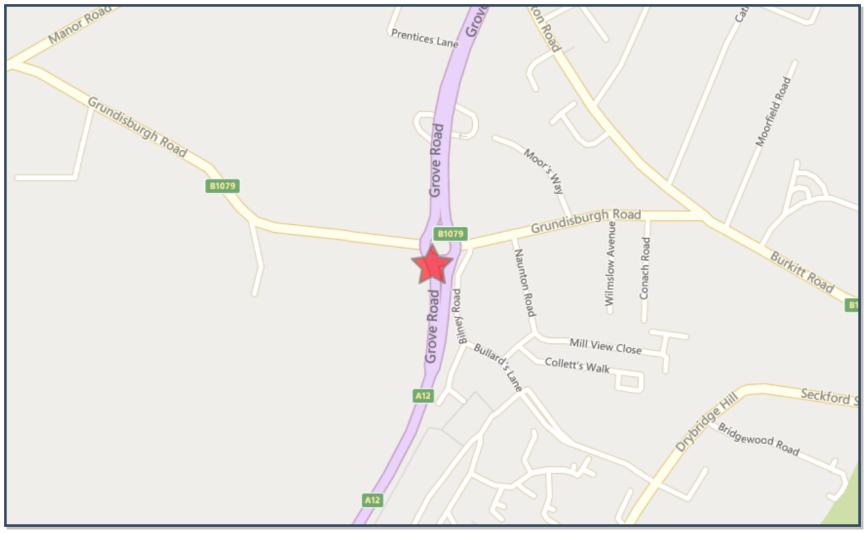
Validated Data

Crash Date:	Wednesday, March 27, 2019	**Time of Crash:**	7:27:00 AM	**Crash Reference:**	**2019370829505**

Highest Injury Severity:	Slight	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	5
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	626009 249292
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	60				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	18	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)	9	Male	36 - 45	Vehicle is waiting to proceed normally but is held up	Offside	Journey as part of work	None	None
3	Car (excluding private hire)	6	Male	46 - 55	Vehicle is waiting to proceed normally but is held up	Nearside	Commuting to/from work	None	None
4	Car (excluding private hire)	2	Male	Unknown	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	None
5	Car (excluding private hire)	3	Male	Unknown	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other

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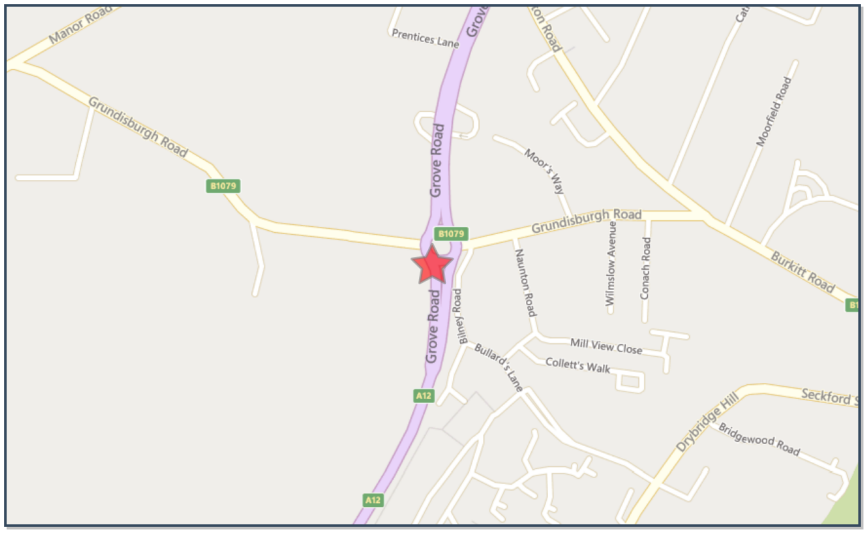
Validated Data

Crash Date:	Wednesday, August 21, 2019	**Time of Crash:**	9:30:00 PM	**Crash Reference:**	**2019370872259**

Highest Injury Severity:	Serious	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	626008 249297
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	40				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 50cc and up to 125cc	9	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)	11	Male	46 - 55	Vehicle is slowing down or stopping	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

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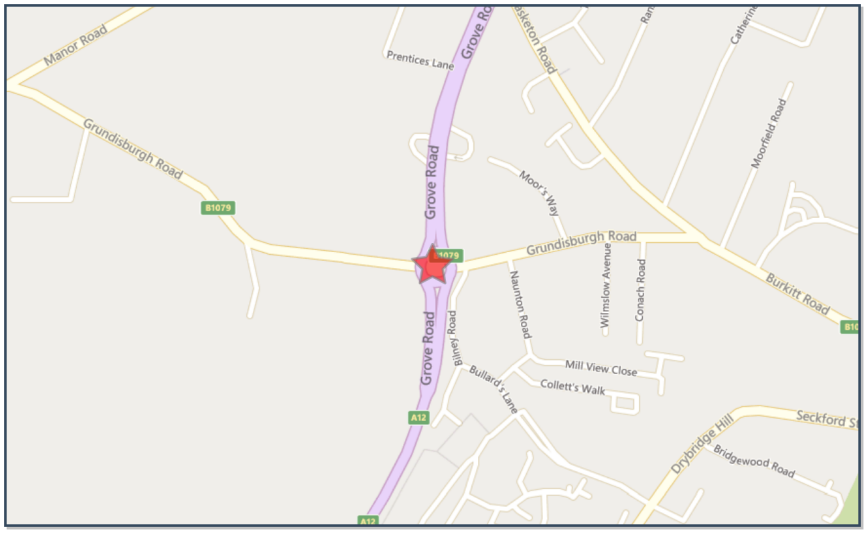
Validated Data

Crash Date:	Thursday, October 06, 2016	**Time of Crash:**	4:40:00 PM	**Crash Reference:**	**2016370120558**

Highest Injury Severity:	Slight	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	626018 249323
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	40				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	3	Male	56 - 65	Vehicle is moving off	Offside	Other	None	None
2	Pedal cycle	-1	Female	Unknown	Vehicle is in the act of turning right	Did not impact	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	Unknown	Unknown or other	Unknown or other

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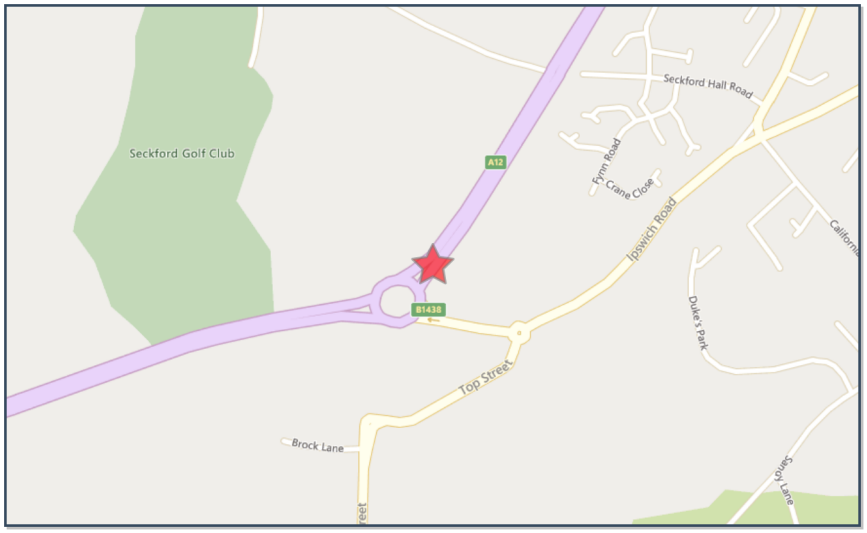
Validated Data

Crash Date:	Saturday, November 07, 2015	**Time of Crash:**	12:50:00 PM	**Crash Reference:**	**201537EA95212**

Highest Injury Severity:	Slight	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	625430 248031
Weather Description:	Raining with high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	60				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Not Applicable				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	13	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)	-1	Male	56 - 65	Vehicle is slowing down or stopping	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

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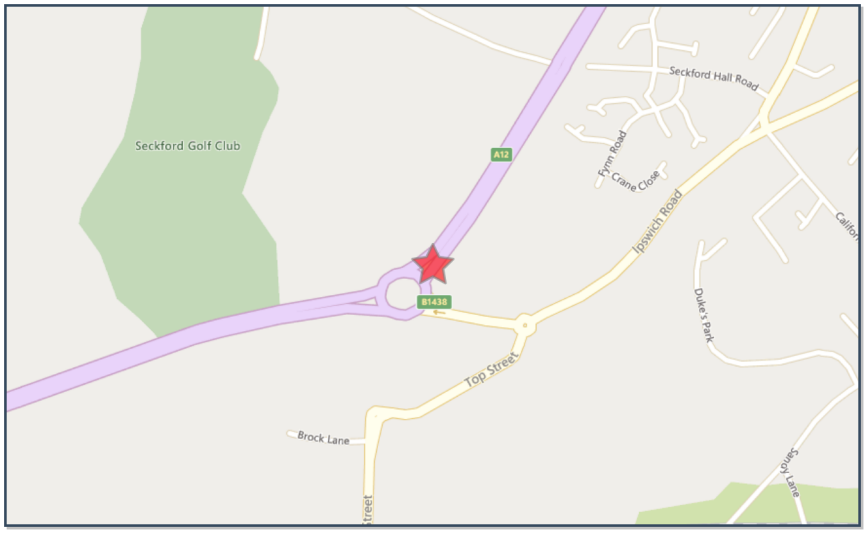
Validated Data

Crash Date:	Thursday, February 01, 2018	**Time of Crash:**	6:20:00 PM	**Crash Reference:**	**2018370265732**

Highest Injury Severity:	Serious	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	625420 248015
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Not Applicable				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	3	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
2	Motorcycle over 500cc	10	Male	56 - 65	Vehicle is in the act of turning right	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Serious	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

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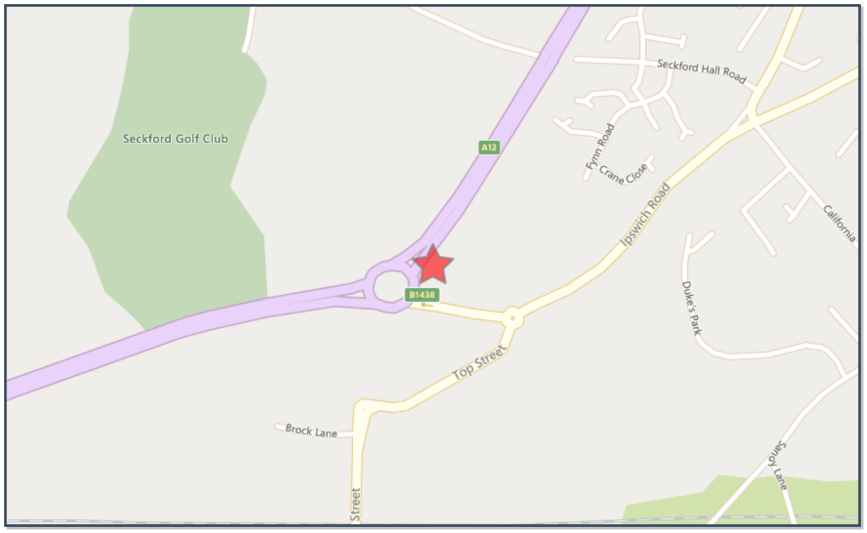
Validated Data

Crash Date:	Monday, May 14, 2018	**Time of Crash:**	3:48:00 PM	**Crash Reference:**	**2018370298289**

Highest Injury Severity:	Slight	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	625438 248010
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 500cc	15	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)	3	Female	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

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Validated Data

Crash Date:	Monday, July 27, 2015	**Time of Crash:**	3:50:00 PM	**Crash Reference:**	**201537EA92461**

Highest Injury Severity:	Slight	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	624631 243931
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	60				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	9	Male	Over 75	Vehicle is slowing down or stopping	Front	Other	None	None
2	Car (excluding private hire)	10	Female	36 - 45	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Vehicle or pillion passenger	Female	Over 75	Unknown or other	Unknown or other

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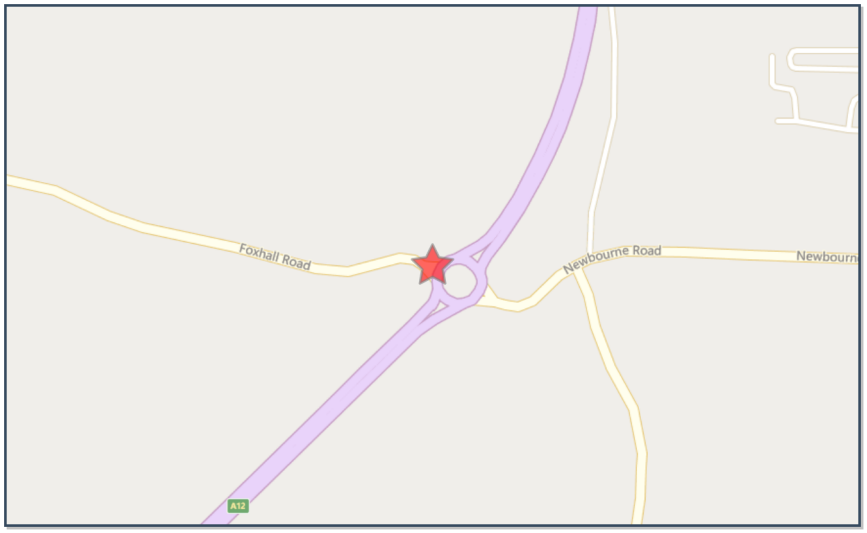
Validated Data

Crash Date:	Sunday, December 13, 2015	**Time of Crash:**	1:14:00 PM	**Crash Reference:**	**201537EA96211**

Highest Injury Severity:	Slight	**Road Number:**	A12	**Number of Casualties:**	2
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	624620 243925
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	60				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Female	26 - 35	Vehicle is slowing down or stopping	Front	Other	None	None
2	Car (excluding private hire)	9	Male	26 - 35	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Vehicle or pillion passenger	Female	26 - 35	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Female	26 - 35	Unknown or other	Unknown or other

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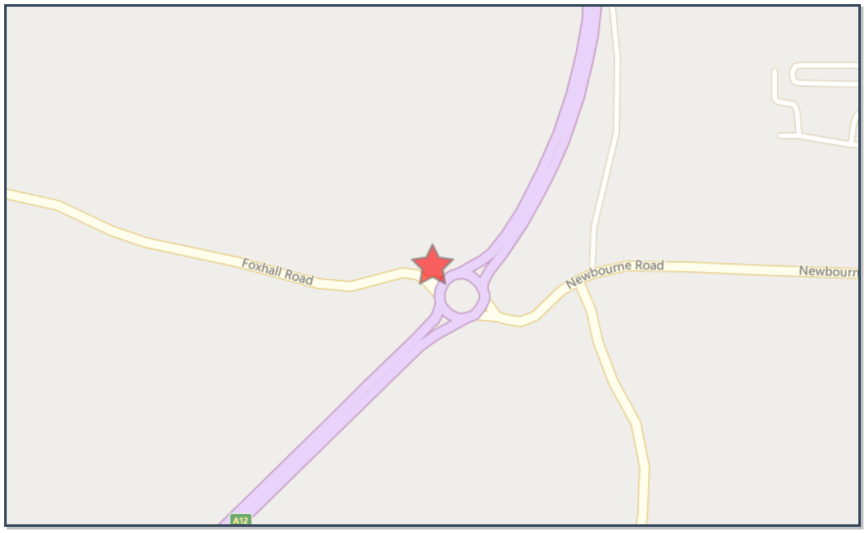
Validated Data

Crash Date:	Tuesday, April 12, 2016	**Time of Crash:**	9:15:00 AM	**Crash Reference:**	**2016370062614**

Highest Injury Severity:	Slight	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Ipswich Borough			**OS Grid Reference:**	624616 243945
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	60				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	11	Female	26 - 35	Vehicle is moving off	Front	Other	None	None
2	Car (excluding private hire)	4	Female	46 - 55	Vehicle is moving off	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	26 - 35	Unknown or other	Unknown or other

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Validated Data

Crash Date:	Friday, March 20, 2015	**Time of Crash:**	2:55:00 PM	**Crash Reference:**	**201537EA89055**

Highest Injury Severity:	Slight	**Road Number:**	A12	**Number of Casualties:**	1
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	624624 243883
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	6	Female	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Motorcycle over 500cc	-1	Male	Over 75	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	Over 75	Unknown or other	Unknown or other

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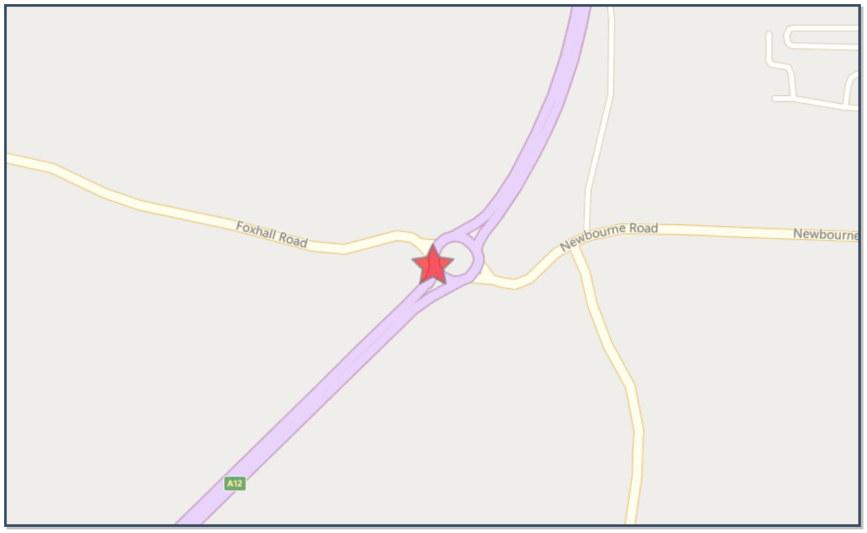
Validated Data

Crash Date:	Wednesday, November 06, 2019	**Time of Crash:**	11:52:00 AM	**Crash Reference:**	**2019370922692**
Highest Injury Severity:	Slight	**Road Number:**	A12	**Number of Casualties:**	2
Highway Authority:	Suffolk			**Number of Vehicles:**	2
Local Authority:	Suffolk Coastal District			**OS Grid Reference:**	624625 243898
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	3	Female	66 - 75	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)	7	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Male	36 - 45	Unknown or other	Unknown or other

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Internal Use

621500 622000 622500 623000

249000 248500 248000

Access AP-X

Playford Corner SCCS

Crossing Point CR-8

Crossing Point CR-9

Jointing Bay 12

Access AP-W

Track

GP

ROAD

Boot Street

Path (um)

CHURCH ROAD

HOLLY LANE

THE

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Works No.s Overview

Abbey Farm
Culpho
Hill Farm
Great Bealings
Boot Street
39
40
Farrows End
Clematis Cottage
Holly Lane
Playford
Little Bealings

EA THREE DCO Corridor
Secondary Construction Consolidation Site
Jointing Bay Compound
Top Soil
Access Track
Haul Road
EA THREE Existing Cable Ducts
EA ONE Existing Cable Ducts

Works No.s
39
40

Rev	Date	By	Comment
B	05/04/2022	PW	Second Issue
A	31/03/2022	JRS	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

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NOT TO BE USED FOR NAVIGATION.

Playford Corner Works Stage

Figure 1: Site Context Plan

Drg No	05356.00006.12.0021.1 Site Context Plan
Rev	2
Date	05/04/2022
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\Onshore Substation\ONCS and Commencement Master\5356.00006.12.0021.1 Works Site Context.mxd

615000 620000 625000 630000

250000 245000

Access AP-X

Access AP-W

Crossing Point CR-8

1

51

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

EA THREE DCO Corridor

Commencement Works Access Point

5km Access Point Buffer

Cycle Routes within 5 km of Access Point

On-Road route on the National Cycle Network

On-Road route on the Regional Cycle Route

Traffic Free Route on the National Cycle Route Link

Traffic Free route on the National Cycle Network

11 Cycle Route Number

GoBe consultants

Rev	Date	By	Comment
A	11/04/2022	PW	First Issue

Original A3 Plot Scale 1:50,000

0 1 2 Kilometres

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Playford Corner Works Stage

Figure 2: 5 km Cycling Catchment

Drg No	05356.00006.12.0078.0 5km Cycling Catchment
Rev	1
Date	11/04/2022
Layout	N/A

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610000 620000 630000

250000 240000

N

WOODBRIDGE IPSWICH KESGRAVE

9 8 7 6 10 5 11 4 3 2 1

AH AF AE AD AB AC AA Z Y X W V U T R Q S AK AJ AI AG P O N M L K I H G F E D C B A AL

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

EA THREE DCO Corridor
Access Point (Red Label Indicates Access Reference)
Route Section
11 Cable Route Section Reference

Rev	Date	By	Comment
A	11/04/2022	JRS	Initial Issue

Original A3 Plot Scale 1:75,000

0 1 2 Kilometres

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East Anglia Three

Figure 3: Sections of the Cable Route

Drg No	05356.00006.12.0079.0 Sections of Cable Route
Rev	1
Date	11/04/2022
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\Onshore Substation\Doc Ref EA3-GRD-CON-PLN-IBR-000118\5356.00006.12.0079.0 Sections of the Cable Route.mxd

620000 620500 621000 621500 622000 622500 623000 623500 624000 624500 625000 625500 626000 626500

251000 250500 250000 249500 249000 248500 248000

Grundisburgh
Hasketon
River Lark
River Fynn
Culpho
Great Bealings
Little Bealings
Playford
Maidensgrave
Boot Street
Whitehouse Farm
Cottage Flat
Boundary Farm
Sycamore Farm
Gull Farm
Brook Farm
Elm Tree Farm
Wood Farm
Bridge Farm
Grundisburgh Hall
Park Farm
Hill Farm
Abbey Farm
Culpho Manor
Park Corner Cottages
Culpho Hall
Farrows End
Clematis Cottage
Thorpe Hall Barns
Hall Farm
Eimtree Cottage
Kennel Farm
Avalon
Short Hoo Cottage
Bridge Cottage
Morley Barn Farm
Manor Farm House
Shrubbery Farm
Gazebo Farm
Bealings House
Wood Barn Cottages
Rosery Farm
Birds Hill
Seckford Hall Bungalow
Seckford Hall Hotel
Meadow Cottage
Cherry Tree Cottage
Cherry Tree Farm
Dower House
Creek Farm
Education Facility
Access AP-X
Access AP-W
Playford Corner SCCS
Jointing Bay 12
Crossing Point CR-9
Crossing Point CR-8

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

EA THREE DCO Corridor
Secondary Construction Consolidation Site
Jointing Bay Compound
Access Track
Haul Road
Top Soil
Construction Access Route

GoBe consultants

Rev	Date	By	Comment
B	12/04/2022	PW	Second Issue
A	31/01/2022	PW	First Issue

Original A3 Plot Scale 1:17,500

0 350 700 Metres

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Playford Corner Works Stage

Figure 4: Construction Access Route

Drg No	05356.00006.12.0078.1 Construction Access Route
Rev	2
Date	11/04/2022
Layout	N/A

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