APPENDIX 13.1 NMU CONTEXT REPORT

## Blank Page

## highways england

# A19 / A184 Testos Junction Improvement and A19 Downhill Lane Junction Improvement TR010020 

## Joint Non-Motorised Users Context Report



April 2017

# Infrastructure Planning 

Planning Act 2008
The Infrastructure Planning
(Applications: Prescribed Forms and
Procedure) Regulations 2009

## A19 / A184 TESTOS JUNCTION IMPROVEMENT

## The A19 / A184 (Testos Junction Improvement) Development Consent Order 2017

## Non-motorised users context report

| Regulation Number: | APFP Regulation 5(2)(a) |
| :--- | :--- |
| Planning Inspectorate Scheme <br> Reference | TR010020 |
| Application Document Reference | TR010020/6.3 Appendix 13.1 |
| Author: | A19 Project Team \& Highways England |


| Version | Date | Status of Version |
| :--- | :--- | :--- |
| Rev 0 | April 2017 | Final |

## CONTENTS

1 Introduction and approach ..... 1
1.1 Introduction ..... 1
1.2 Requirements for Improvement. ..... 1
1.3 Scheme Background and Role of the Parties ..... 2
1.4 Approach ..... 2
2 Scheme Description ..... 4
2.1 Description of the site and its surroundings ..... 4
2.2 Existing Highway Layout ..... 5
2.3 Development Proposal. ..... 6
2.4 NMU proposals - Testos Junction ..... 6
2.5 Existing Motorised Traffic Flows ..... 7
2.6 Accident Data ..... 8
3 Existing non-Motorised User Routes ..... 10
3.1 Existing Public Rights of Way ..... 10
3.2 Existing footbridges ..... 12
3.3 Roads, including existing footways and cycleways ..... 13
4 Existing Trip Generators. ..... 15
4.2 Residential Areas. ..... 15
4.3 Employment, Industrial and Commercial Areas ..... 15
4.4 Education and Community Facilities ..... 16
4.5 Riding Stables, Livery and Horse Ownership ..... 17
4.6 Transport Routes and Stops ..... 18
5 Existing Desire Lines ..... 20
5.2 Future Desire Lines ..... 23
6 Existing NMU Traffic flows ..... 24
6.1 NMU Survey and Interview Method ..... 24
6.2 Testos Junction NMU Survey Data (2014) ..... 24
6.3 Downhill Lane Junction NMU Survey (2016) ..... 25
7 Development proposals ..... 28
7.1 Industrial and Commercial ..... 28
7.2 Residential ..... 30
7.3 Transport / Improving Accessibility ..... 31
8 Relevant policies \& objectives of other organisations ..... 33
8.1 Tyne \& Wear Joint Local Transport Plan (LTP3) ..... 33
8.2 Rights of Way Improvement Plan ..... 35
8.3 Aspirations/objectives and views of user groups about A184 / A19 Testos Junction Improvement ..... 36
8.4 Aspirations/objectives and Views of User Groups about Downhill Lane Junction ..... 38
9 Conflict Points ..... 40
9.2 Key NMU Conflict Points ..... 40
10 Proposed scheme objectives for non motorised users ..... 42
Appendix A: NMU Survey Data (2015) ..... 44

## APPENDIX B: A19 / A184 Testos Junction Improvement NMU workshop option plans 45

## Figures

Figure 1: Non-motorised User Study Area and Public Rights of Way
Figure 2: A19 / A184 Testos Junction Improvement scheme
Figure 3: A19 Downhill Lane Junction Improvement scheme
Figure 4: Proposed Changes to Non-motorised User Routes
Figure 5: Communities and Bus Routes
Figure 6: Employment, Industrial and Commercial Areas
Figure 7: Location and Results of Non-motorised User Surveys - June 2014
Figure 8: Location and Results of Non-motorised User Surveys - Winter 2016
Figure 9: Location and Results of Non-motorised User Surveys - Summer 2016

## 1 INTRODUCTION AND APPROACH

### 1.1 Introduction

1.1.1 This Non-Motorised User (NMU) Context Report has been prepared to cover both the A19/A184 Testos Junction Improvement and the A19 Downhill Lane Junction Improvement. Preparation of a joint NMU Context Report was initiated at a stage when the two projects were being considered for promotion as a single scheme. Subsequently, however, this was recognised as impracticable. However, the joint NMU Context Report was continued with as it would reflect the close relationship between the flows of NMU traffic and the local desire-lines and aspirations of local communities and user groups between the two schemes.
1.1.2 Preparation of the NMU Context Report is the first stage of the NMU Audit process in accordance with the requirements of the Design Manual for Roads and Bridges (DMRB), Volume 5, Section 2, Part 5 (HD 42/05): Non-motorised User Audits.
1.1.3 The term 'non-motorised user' is a collective abbreviation for pedestrians, cyclists, and equestrians. Users of electronically assisted pedal cycles are included as cyclists, and users of unpowered or powered wheelchairs and mobility scooters are included, broadly under the category of 'pedestrians', but counted separately in surveys. Although the term 'equestrians' technically includes users of horse-drawn vehicles, these are rarely encountered and in practice it normally refers mainly to horse-riders. NMUs are also sometimes collectively referred to as 'vulnerable users', which expresses their physical vulnerability relative to motorised traffic.

### 1.2 Requirements for Improvement

1.2.1 Testos junction currently handles high volumes of vehicles every day and suffers severe congestion, especially during peak periods.
1.2.2 Downhill Lane Junction suffers from serious congestion and delays, these being particularly observable at Nissan shift change times where traffic queues back onto the A19 mainline, particularly from the northbound off-slip.
1.2.3 Anticipated growth in traffic means that both junctions are likely to become busier and lead to increased congestion, resulting in longer delays affecting both the local, regional and potentially national economy given the relevant industrial sites in close proximity and their importance to the north east economy. The already completed second Tyne tunnel and the A19 Coast Road Junction Improvement scheme due for completion in 2019 should help reduce regional congestion; however, proposed development in close proximity to Testos and Downhill Lane Junction, including the proposed International Advanced Manufacturing Park (IAMP) to the north of the Nissan Manufacturing Plant, will place significant localised congestion pressure on both junctions in the short and long term.
1.2.4 Historically, several smaller scale improvements (<£5 million) have been implemented at the junctions, including a recent 'pinch point' scheme to replace roundabouts with traffic signals at either end of Downhill Lane Junction overbridge (by South Tyneside Council). However, these improvements have a limited lifespan, and with congestion forecast to exceed capacity within the next few years. A major infrastructure enhancement is required.
1.2.5 Improving Testos junction to provide full grade separation of the A184 and A19 and a significant redesign of Downhill Lane junction are therefore proposed to alleviate the current and future congestion, provide safety benefits; and ultimately support economic growth in the local, regional and national economy.

### 1.3 Scheme Background and Role of the Parties

1.3.1 Highways England (HE) intends to improve Testos junction and Downhill Lane Junction, on the A19 in South Tyneside, for all users.
1.3.2 Testos junction forms the junction of the A19 and A184, located 4.2 km to the south of the Tyne Tunnel. The roundabout is the last remaining major at-grade junction on the strategic route between the A1/A168 at Dishforth, North Yorkshire and the Tyne Tunnel in South Tyneside. The junction also provides links between the conurbations of Tyneside, Wearside and Teesside, and together with the A184, forms part of an eastern route around the Tyneside conurbation. Testos junction is a major highway intersection on the South Tyneside borough's strategic trunk road network. It is currently an at-grade, signalised roundabout which suffers from severe congestion problems, particularly at peak times.
1.3.3 Downhill Lane junction is located just over 1 km south of Testos junction. It forms the junction between the A19 and the A1290 (on the west side of the junction), and also with the minor roads Downhill Lane and Washington Road. It is a grade-separated junction, with a bridge connecting the side roads across the A19, linked to the A19 by with north-bound and south-bound slip roads providing connections via traffic lighted junctions at either end of the bridge. To the south-west of Downhill Lane junction is the Nissan Manufacturing Plant and other major businesses, connecting ultimately to the A194(M) and A1231 Wessington Way, both strategic, regional routes. The junction links traffic from the west and the east of the A19 and therefore strategically; Teesside, Tyneside and Wearside.
1.3.4 This report has been prepared by Jacobs, the principal designer for both schemes. In preparing the report, Jacobs has drawn on consultation with:

- Costain (contractor);
- Highways England (developer);
- South Tyneside and Sunderland Councils (relevant local authorities); and
- Third Party NMU Groups (Independently and through the Local Access Forum).


### 1.4 Approach

1.4.1 This context report has been produced in accordance with the DMRB HD 42/05 "NonMotorised User Audits."
1.4.2 This report provides a summary of available information relevant to existing and potential patterns of use by NMUs, both now and within the design life of the proposed schemes, within a study area which captures the potential for impacts on the carriageway and also off-carriageway. It also sets out opportunities and objectives to improve conditions for NMUs in association with the scheme. This enables the principal designer (Jacobs) to make informed decisions on scheme elements which may affect NMUs as part of future development.
1.4.3 This NMU Context Report will enable later audit of the scheme against NMU objectives. The NMU Audit will assist HE and the design team in ensuring that the needs of all road users are met in the scheme design. It will aim to promote consideration of NMU interests, and dialogue between HE and the design team in order to achieve optimum provision for NMUs within design constraints. It will be conducted by someone with sufficient experience of NMU needs and the scheme's development.
1.4.4 Information contained within this report has been obtained via:

- Desk-based research
- NMU surveys undertaken during 2006 and 2014 (Testos junction);
- NMU surveys undertaken during 2016 (Downhill Lane junction)
- Site visit (November 2016)
- Consultation with local interest groups
- Traffic flow forecasts for the proposed schemes provided by Arup, derived from a traffic model.


## 2 SCHEME DESCRIPTION

### 2.1 Description of the site and its surroundings

2.1.1 The study area is shown on Figure 1 and includes the Public Rights of Way (PRoWs) and existing NMU facilities as well as important local features.
2.1.2 Testos junction (see Plate 2-1 below) is in an urban fringe location lying in a narrow belt of countryside that separates the urban areas of Boldon Colliery, Hebburn and Sunderland. The junction is a key location, being close to the Boldon Business Park (to the north-east), in general proximity to the Nissan Manufacturing Plant at Washington (to the south-west), and linked indirectly to other major development areas on two key regional routes (the A19 and the A184). Residential areas lie close by, at Fellgate and Hedworth to the north-west and Boldon Colliery to the north-east. Most of the adjacent land to the west of the junction is agricultural. To the east, there are two nature conservation sites, West Boldon Environmental Education Centre, an electricity sub-station and agricultural land. An Enterprise hire car office is located within 50 m of the junction to the west.


Plate 2-1: Testos junction, looking south towards Downhill Lane Junction
2.1.3 Downhill Lane junction (see Plate 2-2 overleaf) is also set within an urban fringe location which is surrounded primarily by agricultural land with scattered woodland. The junction is key for local communities and further afield because it provides direct access to Nissan Manufacturing Plant at Washington and is linked indirectly to other major development areas. It is economically important because it is used by Nissan to despatch newly manufactured vehicles directly from their plant to the Port of Tyne for export. This economic importance is likely to increase in the future as the land to the south-west, west and northwest of the junction has been earmarked for the proposed IAMP site which would be a significant investment and development location promoting regional growth and creating job
opportunities. Residential properties are located to the south and south-east of Downhill Lane junction at Town End Farm. Make-Me-Rich Farm and Elliscope Farm are situated to the north / north-west of the junction.


Plate 2-2: Downhill Lane junction, looking south towards the A1290 and the Nissan plant

### 2.2 Existing Highway Layout

2.2.1 Testos and Downhill Lane junctions are both busy junctions for motorised traffic and NMUs, particularly cyclists. The existing highway layout at Testos junction consists of an at-grade, signalised, traffic lighted roundabout. This connects the north - south A19 with the east west A184 (Newcastle Road). Downhill Lane junction is located approximately 1 km south of Testos junction, along the A19. This junction is grade separated with a single bridge over the A19 connected by north and south-bound slip roads. Downhill Lane junction connects the A19 with the A1290 which runs to the south-west from the junction, Washington Road and Downhill Lane which runs east-west both sides of the junction. Both the western and eastern ends of Downhill Lane overbridge are controlled by traffic lights enabling safe access from the slip roads and A1290 / Downhill Lane.
2.2.2 At the existing Testos junction, there are two NMU crossings, both on the same arm of the junction (the A19 to the north); a pedestrian crossing at the traffic lights, and a bridleway crossing the A19 via an agricultural accommodation bridge to the north. Although the bridleway leads to the A184 west of Testos Junction, there is no provision for crossing the A184 or other provision for onward travel from there. There are bus-stops on both sides of the A184, and a path across the wide central reserve between the bus-stops, but no provision for crossing the carriageways. There is a continuous footway along the north side of the A184.
2.2.3 Downhill Lane Junction is traffic light controlled with push-button on-demand signals for pedestrians and cyclists to cross. The junction forms part of a designated long-distance route (the 'Great North Forest Way'). It is also the crossing point of a major NMU desire line for cycle commuting between Boldon and Nissan Manufacturing Plant (see Section 5 for more detail). Signs on the overbridge advise cyclists to dismount. It is understood that this is required due to the width of the footpath rather than the parapet height.

### 2.3 Development Proposal

2.3.1 At Testos junction, the A 19 would be raised on an embankment approximately 7.5 m high, passing over an enlarged roundabout on two bridges and linked by slip roads. Traffic on the A19 would flow freely above the roundabout, while traffic using the A184 or exiting the A19 would still use the roundabout.
2.3.2 At Downhill Lane junction, the capacity of the junction is limited by its single bridge and lack of a fully circulatory system. The preferred option (2a) for improvement therefore focuses on provision of a second bridge parallel to the existing one, and creation of a fully circulatory system at the existing junction.
2.3.3 The proximity of Testos and Downhill Lane junction (within 1 km ) is such that two fully grade-separated junctions accessed by slip-roads cannot safely be accommodated. This is because traffic seeking to leave the A19 via the Testos north-bound off-slip or the Downhill Lane south-bound off-slip would be in conflict. Therefore, as part of the Testos Junction Improvement, the north-facing slip roads at Downhill Lane Junction would be disconnected from the A19 and extended northwards to become link roads to Testos Junction, where traffic wishing to travel between the A19 and Downhill Lane Junction would do so by passing round the roundabout at Testos Junction and using the slip roads there.
2.3.4 Although Testos junction and Downhill Lane junction are being considered separately, the proximity of both junctions means that a cumulative assessment of NMU impacts is required. The development proposal for the A19/ A184 Testos Junction Improvement scheme is shown on Figure 2 and the A19 Downhill Lane Junction Improvement scheme on Figure 3.

### 2.4 NMU proposals - Testos Junction

2.4.1 The A19/A184 Testos Junction Improvement is at a more advanced stage of design than the Downhill Lane Junction scheme. A Preliminary Design appropriate to inform an application for a Development Consent order is near-complete, and there has been extensive work on the development of the design of NMU facilities, including consultation of the Local Access Forum on options and a public consultation focused primarily on NMU facility options. As a result, a committed set of NMU facilities forms part of the Preliminary Design that will be put forward with the DCO application.
2.4.2 The Downhill Lane Junction scheme is at the beginning of this process. There has been consultation with the public and third parties on selection of a Preferred Route for the highway, and consultation with the Local Access Forum and user groups on their concerns and aspirations to inform the start of the design process for developing NMU options.
2.4.3 The proposed NMU facilities for the A19/A184 Testos Junction Improvement are described below and shown on Figure 4:

- Provision of a cycle/footway link and signalised crossing of the A19 slip roads south of Testos junction.
- Closure of Bridleway B28 and removal of the existing agricultural accommodation over-bridge which carries B28 across the A19 due to the raising associated with the A19 through Testos junction.
- Provision of a cycle/footway running along the east-bound side of the A184 and an improved footpath link on the southern side of the A184 from Testos junction to the Abingdon Way roundabout to connect with the existing cycle/footway.
- Provision of a new Pegasus crossing and separate cyclist / pedestrian crossing of the A19 connector roads, to the south of Testos junction. Screening to be provided for horses travelling under the elevated A19 carriageway and adjacent to traffic on Testos roundabout.
- Along the A19 to the south of Testos junction, provide a new bridleway running along the eastern side of the A19, (with screening for horses), linking to B27 and connecting with the B46.
- In association with the above, upgrade the section of the B27 footpath east of the A19 to a bridleway.
- Along the A19 to the south of Testos junction, provide a new footpath running alongside the western side of the A19 connecting to footpath B27.
- At Testos junction to the west of the roundabout, provide a signalised crossing for cyclists and pedestrians across the A184.
- To the west of Testos junction, provide a new bridleway running along the southern side of the west bound carriageway of the A184 from West Pastures Lane to Testos.
- At the south end of Bridleway B46, provide an improvement to the existing cycleway link to Downhill Lane junction (this facility is to cater for an observed desire line particularly for Nissan shift workers commuting by bike).
2.4.4 Consultation with interest groups has been integral to the development of the NMU proposals, as it has helped identify key desire lines and understand the utility of the proposed facilities. Consultation undertaken for the NMU facilities is detailed in Sections 8.3 and 8.4 of this report.


### 2.5 Existing Motorised Traffic Flows

2.5.1 WebTRIS provides access to traffic flow information collected from England's motorway and major trunk road network ${ }^{1}$.
2.5.2 Table 2-1 details the average monthly traffic flows taken from the Average Daily Total (ADT) and the Average Weekly Total (AWT) in close proximity to Testos junction. The latest available recorded 12 month period was between 01/01/2015 and 01/01/2016.

Table 2-1: Average monthly traffic flows at Testos junction

|  | 24 hour | 18 hour | 16 hour | 12 hour |
| :---: | :---: | :---: | :---: | :---: |
| Site - North of Testos Roundabout - South-bound on A19 GPS Ref: 433852; 561331 |  |  |  |  |
| ADT | 19643 | 19076 | 18665 | 16340 |

[^0]| AWT | 23906 | 23246 | 22764 | 19920 |
| :--- | :--- | :--- | :--- | :--- |
| Site - West of Testos Roundabout - West-bound on A184 <br> GPS Ref: 432435; 561118 |  |  |  |  |
| ADT | 18504 | 17833 | 17249 | 14922 |
| AWT | 20401 | 19760 | 19158 | 16555 |

2.5.3 Table 2-2 provides a summary of the average monthly traffic flows taken from the Average Daily Total (ADT) and the Average Weekly Total (AWT) in close proximity to Downhill Lane junction. The latest available recorded 12 month period was between 01/01/2015 and 01/01/2016.

Table 2-2 Average monthly traffic flows at Downhill Lane junction

| 24 hour | 18 hour | 16 hour | 12 hour |
| :--- | :--- | :--- | :--- |

Site - South of Testos Roundabout - South-bound TMU Site 9346/1 on A19.
GPS Ref: 434649; 558743.

| ADT | 28142 | 27187 | 26264 | 22969 |
| :--- | :--- | :--- | :--- | :--- |
| AWT | 31608 | 30619 | 29613 | 25891 |

### 2.6 Accident Data

2.6.1 HD 42/05 requires information on "accident data", which is the term still used by the Tyne and Wear Traffic and Accident Data Unit (TADU). It should be noted that the Department for Transport (DfT) have since changed the terminology to "road collisions" (reflecting that collisions happen for a reason and not by chance). Therefore, the term "collision/s" has been used throughout this report.
2.6.2 The North East Regional Road Safety Resource, in partnership with the Tyne and Wear, TADU and Gateshead Council's Geospatial Systems Team have developed an interactive map showing the locations of all the North East's road user casualties by severity and road user type over the past five years ${ }^{2}$.
2.6.3 Table 2-3 details the NMU collisions which have occurred at and in the immediate vicinity ( 100 m ) of Testos junction. The collisions are rated as: fatal; serious; or slight.

[^1]Table 2-3: NMU collisions at Testos junction

| Number of <br> NMU <br> Causalities | Severity | Date | Type | Time | Location Detail |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Slight | $19 / 12 / 2012$ | Pedestrian | $17: 40$ | North of Roundabout |

2.6.4 Table 2-4 details NMU collisions that have occurred at and in the immediate vicinity ( 100 m ) of Downhill Lane junction. The collisions are rated as: fatal; serious; or slight.

Table 2-4: NMU collisions at Downhill Lane junction

| Number of <br> NMU <br> Causalities | Severity | Date | Type | Time | Location Detail |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Serious | $02 / 04 / 2012$ | Pedestrian | $17: 35$ | Downhill Lane junction / <br> Washington Road |
| 1 | Serious | $12 / 06 / 2012$ | Cyclist | $07: 30$ | Downhill Lane junction, <br> exit from north-bound slip <br> road |
| 1 | Slight | $08 / 07 / 2013$ | Cyclist | $23: 30$ | Entry to Downhill Lane <br> junction north-bound slip <br> road |
| 1 | Slight | $05 / 08 / 2015$ | Cyclist | $17: 46$ | Junction of A1290 and <br> Downhill Lane |
| 1 | Slight | $22 / 10 / 2016$ | Cyclist | $16: 43$ | Downhill Lane junction / <br> exit from south-bound slip <br> road |

## 3 EXISTING NON-MOTORISED USER ROUTES

### 3.1 Existing Public Rights of Way

3.1.1 The location of the existing PRoW network in the vicinity of the junctions is shown on Figure 1. These PRoW are summarised in the text below:

Bridleway B28
3.1.2 Situated to the north of Testos junction, Bridleway B28 provides a safe east-west route over the A19, via an old agricultural accommodation bridge, between Brooklands Way and the A184. The bridge is indicated with an arrow in Plate 3-1.


Plate 3-1: Bridleway B28-accommodation bridge over the A19, looking north-east from an elevated position above Enterprise Rent-a-Car

## Bridleway B46

3.1.3 Situated to the east of Testos junction, Bridleway B46 runs north-south between the A184 / B1298 Abingdon Way roundabout and Downhill Lane junction. The bridleway is a popular facility with a variety of NMUs, particularly cyclists. Plate 3-2 shows an aerial photograph of the southern section of Bridleway B46, which is in close proximity to Downhill Lane junction.
3.1.4 Bridleway B46 follows the line of an old mineral railway. Near the south end of the bridleway, this line is severed by the A19, and the bridleway diverts onto a different route parallel to the toe of the earthworks for Downhill Lane Junction, and follows a sinuous route to a point where it can conveniently meet Downhill Lane. This takes users off their desire line, and there are several informal paths where users regularly climb the earthworks to reach Downhill Lane Junction more conveniently. In particular, at the point where the old mineral railway meets the A19, some cyclists habitually climb across the barrier to cycle up the slip road to reach the junction. It is not known whether this unsafe practice has
contributed to the higher accident statistics for cyclists at Downhill Lane Junction compared to Testos Junction.


Plate 3-2:Aerial view of Bridleway B46 near Downhill Lane junction. Inset: looking south from near the A184

## Footpath B27

3.1.5 Footpath B27 links West Pastures Lane, located to the west of the A19, and Bridleway B46 to the east of the A19. It is severed by the A19 dual carriageway, and in consequence usage is very limited. The crossing of the A19 is at-grade through a gap in the central reserve barrier, making it dangerous due to the high volumes and speeds of traffic on the A19. There are stiles at the highway boundaries on both sides of the A19.
3.1.6 East of the A19, Footpath B27 runs along the southern boundary of the National Grid/Northern Power Grid electricity sub-station, until it meets Bridleway B46, where there is a kissing-gate. On inspection, this section of the path does have a worn track, suggesting some usage occurs.
3.1.7 To the west of the A19, Footpath B27 runs south-westwards through fields and along field boundaries until it meets West Pastures Lane. On inspection on several occasions the footpath appeared overgrown indicating that it is not well used by NMUs. Plate 3-3 shows two site visit photographs of Footpath B27.


Plate 3-3 Left) Looking west along Footpath B27 towards the A19 from near Bridleway B46

Right) Looking east at Footpath B27 from West Pastures Lane

## Footpath B29

3.1.8 Footpath B29 runs north-south between the A184 Newcastle Road and West Pastures Lane, approximately 800 m west of Testos. The footpath is approximately 400 m in length. The footpath was observed during the site visit and was overgrown with vegetation as a result of low usage.
Footpath B22
3.1.9 Footpath B22 provides a link between Follingsby Lane and West Pastures Lane. At its closet point, the footpath is located approximately 900 m to the south-west of Testos junction and 1 km to the north-west of Downhill Lane junction. The footpath, along with the Footpath B27, provides a potential cross-country east-west route across the A19 between Follingsby Lane and Bridleway B46.

### 3.2 Existing footbridges

## Nissan Footbridge

3.2.1 This footbridge provides a link between Town End Farm estate (to the east of the A19) and facilities, such as Nissan Manufacturing Plant, to the west of the A19 (see Plate 3-4 overleaf). It should be noted that the gates (shown in Plate 3-4) have recently been removed and the track resurfaced. The bridge follows the original line of Washington Road before it was realigned due to the construction of the A19 and Downhill Lane Junction.


Plate 3-4
Left) Nissan Footbridge from the A19 south-bound Right) Entrance to Nissan Footbridge from Washington Road

### 3.3 Roads, including existing footways and cycleways

The A19
3.3.1 The A19 is legally open to NMUs, but is generally considered to be unsuitable and dangerous for them to use. It is not considered as an NMU route in this report.

## The A184

3.3.2 The A184 is a dual carriageway trunk road to the west of Testos Junction as far as Whitemarepool Junction (approximately 3 km ), after which it continues as a dual carriageway in the care of the local authority (Gateshead Council). East of Testos Junction, it is a single carriageway in the care of the local authority (South Tyneside Council, then Sunderland Council).
3.3.3 There is a footway along the whole length of the A184, on its north side (i.e. adjacent to the eastbound carriageway). On many of the local authority managed sections, there are cycleways or cycle lanes, and in consultation the local authorities, Cycling UK and the Local Access Forum have expressed a joint aspiration to join up the facilities to make a continuous cycleway all the way from Sunderland, through South Tyneside to Gateshead.
3.3.4 Observations and survey results indicate that while there is significant usage of the A184 for east-west cycling trips on both sides of Testos Junction, nearly all of these trips are made on the footway on the north side of the carriageway, with very few being made on the carriageway itself. Anecdotally, the majority of these trips are for commuting purposes.
Abingdon Way
3.3.5 Abingdon Way (the B1293) is a local road within the built-up area to the north-east of Testos Junction. It follows a sinuous, approximately north-south route, roughly parallel to the A19, and separated from it by Boldon Business Park. A segregated cycleway runs along the east side of Abingdon Way on to the north side of the A184 to the east of Testos roundabout, adjacent to the Abingdon Way/Newcastle Road roundabout, where there are dropped kerbs and a traffic island to facilitate crossing the A184 towards Bridleway B46. There are additional cycleway facilities along the A184 further to the east.

## A1290

3.3.6 The A1290 runs south-westwards from Downhill Lane Junction, initially following another part of the line of the same mineral railway as Bridleway B46, until it meets the old line of Washington Road and turns more westward. It provides access from parts of Washington new town and its industrial estates, including the Nissan plant, to the A19. A segregated, shared footway and cycleway runs parallel to west-bound traffic along the A1290 between Downhill Lane junction and the Nissan Manufacturing Plant. At this point it diverts southwards away from the A1290, joins the old line of Washington Road and rejoins the A1290 further west. The A1290 has junctions with Downhill Lane and with Follingsby Lane, both of which are well-used by NMUs, particularly cyclists..

## Washington Road

3.3.7 Washington Road runs north-south east of and parallel to the A19, linking the Town End Farm/Hylton Castle and Downhill residential areas to Downhill Lane Junction. It was diverted onto this route when the A19 was built; formerly it ran directly east-west. A segregated, shared footpath and cycleway runs parallel to the north-bound direction of traffic along Washington Road between Town End Farm estate and Downhill Lane junction. The Washington Road cycleway provides commuter access to the Nissan Manufacturing plant from Town End Farm estate to the east and from Washington to the west. The facility observed during the site visit and was considered to be in good condition.
3.3.8 The A1290 and Washington Road cycleways are not directly linked as there is no cycleway across the bridge at Downhill Lane Junction, where the footway is narrow and there are advisory 'cyclists dismount' signs.

## Downhill Lane and Follingsby Lane (Great North Forest Trail)

3.3.9 Downhill Lane is a minor road linking West Boldon south-westwards to the countryside west of the A19, crossing the A19 via Downhill Lane Junction. It terminates on the line of another minor country lane, Follingsby Lane, which runs from the A1290 north-westwards through countryside towards an industrial area at Follingsby, with links across the A194(M) to residential areas in Gateshead.
3.3.10 The whole of Downhill Lane and more than half of Follingsby Lane form part of the 'Great North Forest Trail'. This is a 105 km circular route, which forms part of an initiative to improve the countryside in this former mining area and passes Pelton, Bournmoor, Hetton-le-Hole, the Penshaw Monument and Witherwack. While the Great North Forest Partnership has been dissolved and there is no longer any funding or organisation behind the route, it remains a designated long-distance route and policies relating to it within the relevant local plans are still current.
3.3.11 Surveys carried out in 2016 suggest that the section of the Trail using Follingsby Lane/Downhill Lane and crossing the A19 at Downhill Lane Junction is still popular as a recreational route, while both lanes are also heavily used by cycle commuters to the Nissan plant. It is understood that horses are kept at some of the farms along Follingsby Lane, although there is little data on this. Horses were observed in several fields along both Downhill and Follingsby Lanes, including one field directly adjacent to Downhill Lane Junction, and surveys have recorded horses being exercised along these lanes, mainly in winter.

## West Pastures

3.3.12 West Pastures is a single-track lane following an irregular course roughly north-south, linking Follingsby Lane and the A184. It has links with three footpaths (B27, B22 and B29) in addition to the Great North Forest Trail and the A184, and potentially forms an important part of a variety of circular routes. On the site visit, horses were observed being kept in fields adjacent to West Pastures at both ends.

## 4 EXISTING TRIP GENERATORS

4.1.1 A trip generator is simply defined as an institution or location where people have a reason to go. Identifying trip generators helps to assess current NMU facilities and the requirements and desires for future NMU facilities. For this study, trip generators broadly fall under the following categories:

- Residential areas;
- Employment, industrial and commercial areas;
- Education and community facilities;
- Riding stables, livery and horse ownership; and
- Transport routes and stops.
4.1.2 The two junctions and wider study area are located within formal green belt between the major urban agglomerations of Gateshead, South Tyneside and Sunderland. Residential areas, large industrial employers including the Nissan Manufacturing Plant, employers, businesses, farmland, green spaces, various stables and liveries with bus links between are within the vicinity of the junctions.


### 4.2 Residential Areas

4.2.1 As shown on Figure 5, the key communities in close proximity to the A19 / A184 Testos junction and Downhill Lane junction are:

- Boldon Colliery: situated approximately 800 m north-east of Testos junction;
- Fellgate: located approximately 1.2 km north-west of Testos junction;
- Hedworth: situated approximately 800 m north-west of Testos junction;
- West Boldon: situated approximately 1.2 km to the east of Testos junction; and
- Town End Farm estate: at its closest point is located approximately 300 m southeast of Downhill Lane junction.
4.2.2 In addition to the above, there are a number of farms and other scattered rural properties in the countryside west of the A19.


### 4.3 Employment, Industrial and Commercial Areas

4.3.1 Figure 6 displays the employment, industrial and commercial areas in the vicinity of Testos junction and Downhill Lane junction.
4.3.2 Boldon Business Park is located immediately north-east of Testos junction. Boldon Business Park covers an area of approximately 23 hectares and contains office units and light industrial units. Quality Hotel is situated within Boldon Business Park, off Witney Way. The Quadrus Centre is a landmark building within Boldon Business Park, located just north of Boldon Lake. It is described as a high-tech / quaternary business centre occupied by small-to-medium sized businesses, including a number of consultancy and recruitment firms.
4.3.3 A large ASDA superstore, Cineworld and other shops and restaurants are situated between Abingdon Way and Henley Way. There are a number of residential properties within walking/ cycling distance of the store and cinema.
4.3.4 Enterprise Rent-A-Car is located to the west of Testos junction, along the A184.
4.3.5 Nissan Manufacturing Plant is located approximately 2 km to the south-west of Testos junction and approximately 1 km south-west of Downhill Lane junction. The plant is a
significant employer in the north-east region, with an estimated workforce of more than 6,500 people. It is understood that employees were on a three-shift system at the time of the NMU surveys undertaken in June 2014, but have since reduced to a two-shift system. It was noted that whilst 24 -hour production is not currently in operation it could be reintroduced when demand is high and so future patterns have been considered within this NMU context report.
4.3.6 Gateshead city centre is approximately km to the north-west of Testos junction and Sunderland city centre is approximately 6 km to the south-east of Downhill Lane junction. More distantly, Newcastle city centre is approximately 12 km to the west and across the Tyne. All of these cities have employment opportunities that may attract NMU trips, particularly from cyclists.

### 4.4 Education and Community Facilities

4.4.1 There are a number of education and community facilities (see Figure 5) within the vicinity of both junctions that may attract NMU journeys.
4.4.2 West Boldon Environmental Education Centre is a purpose built environmental education centre set within 13 hectares. The Centre was constructed by National Grid in August 2010 and is managed by Groundwork South Tyneside and Newcastle. In addition to local schools, the centre is used by: local community groups; youth projects; environmental professionals; and teachers. The centre provides volunteering opportunities, training and event facilities for people in the local communities of West Boldon, Boldon Colliery, and East Boldon. The Lodge is located adjacent to Testos junction, east of the A19 and south of the A184.
4.4.3 At its closest point, Colliery Wood is situated approximately 1.5 km to the north-east of Testos junction, north of New Road. The wood is a mixture of ancient river valley landscapes, industrial history and a reclaimed colliery, that "as part of the continuing development of the Great North Forest, will develop into the biggest woodland in South Tyneside" ${ }^{\prime 3}$. It is noted that the Great North Forest Partnership has been dissolved and there is no continuing funding for the development of the forest.
4.4.4 Disco Park is located approximately 900 m and Coronation Park approximately 1.1 km to the north-east of the A19 Testos junction.
4.4.5 A number of schools are located within the vicinity of Testos junction as follows:

- Hedworth Lane Primary School - approximately 1 km north of Testos junction;
- Hedworthfield Primary School - approximately 1 km north-west of Testos junction;
- Saint Joseph's Roman Catholic Primary School - approximately 1.5 km north-west of Testos junction;
- Fellgate Primary School - approximately 1.6 km north-west of Testos junction;
- Boldon Comprehensive School - approximately 1.7 km north-east of Testos junction;
- West Boldon Primary School - approximately 1.6 km north-east of Testos junction;
4.4.6 It is noted that most of these facilities are located 1 km or more away from Testos Junction, and within built-up areas. There are very few residential properties separated from any of these facilities by the A19 and Testos Junction. The number of NMU journeys specifically through Testos Junction generated by these facilities is therefore likely to be very small.

[^2]4.4.7 The following educational facilities are located in the vicinity of Downhill Lane junction:

- Gateshead College Skills Academy - located approximately 1 km south-west of Downhill Lane junction;
- Town End Academy - approximately 600 m south-east of Downhill Lane junction;
- Bexhill Primary School - approximately 800 m south-east of Downhill Lane junction; and
- St John Bosco Primary School - approximately 1 km south-east of Downhill Lane junction.
4.4.8 The Sunderland North Community Business Centre is located approximately 600 m southeast of Downhill Lane junction. The centre works in partnership with Sunderland City Council to provide support to local residents that are not employed and want to get a job. It is likely that a proportion of people using this facility will not have access to private motorised means of transport and therefore will walk, cycle or use public transport to reach the centre.
4.4.9 The North East Aircraft Museum is located within 500 m of the Nissan Manufacturing Plant; approximately 1 km south-west of Downhill Lane Junction and approximately 2 km south of Testos Junction.
4.4.10 Gateshead College Skillls Academy and the North-East Aircraft Museum are both separated from the main residential areas by the A19, and therefore may attract NMU journeys across the A19, although a proportion of these are likely to travel via the Nissan footbridge rather than Downhill Lane Junction.
4.4.11 Further afield, other amenities include:
- Hylton Dene Park;
- Wardley Manor Country Park;
- Carr Ellison Park;
- Bede Well;
- Bedewell Park;
- Springwell Park;
- Boldon Hill and,
- Monkton Dene Park.


### 4.5 Riding Stables, Livery and Horse Ownership

4.5.1 Riding stables and livery yards are important features in this area and contribute to the local economy. They are located to both the west and east of the A19 and their presence means equestrian activity is anticipated to be high.
4.5.2 Table 4-1 details equestrian stables, liveries or location of horses have been identified from desk based research and from the site visit undertaken in November 2016. It is possible that more may exist but that have not been identified by the internet search and / or site visit. The proximity and number of these stables / liveries and the desire to undertake equestrian activity in this green belt environment, means that equestrian facilities and their desires need to be considered carefully.

Table 4-1: Equestrian stables, liveries/ horse locations in proximity to both junctions

| Name | Location | Description from desk based research |
| :--- | :--- | :--- |
| Quarry Park <br> Stables | 4 km north-west of <br> Testos | Horse riding school/equestrian centre offering <br> lessons and//or other equine facilities, stables, <br> dressage, saddlery or livery. |
| T \& WE Alderslade <br> \& Sons | 2.2 km north-west of <br> Testos | T \& WE Alderslade \& Sons is a livery yard. |
| Field House Riding <br> Centre | 3.2 km east of both <br> junctions | The centre provides pony care days, riding <br> lessons and shows. |
| Make-me-Rich <br> Farm | Adjacent to Downhill <br> Lane junction | Horses were seen in the fields of Make-me-Rich <br> Farm whilst undertaking the site visit. |
| South end of West <br> Pastures Lane | 600 m west of the A19 | Horses were seen in the western fields along <br> West Pastures Lane at the junction with <br> Follingsby Lane whilst undertaking a site visit. |
| Downhill Lane/ <br> Follingsby Lane | 600 m west of the A19 | Horses or evidence of horse transportation / <br> facilities were seen in numerous fields adjacent <br> to these roads whilst undertaking the site visit. |
| Hylton Livery Yard | 750 m west of Downhill <br> Lane junction | Livery yard. <br> Washington Riding <br> Centre <br> 3 km west of Downhill <br> Lane junctionThe centre focuses on providing horse riding <br> opportunities to disabled people, providing <br> approximately 130 lessons weekly to all ages. |
| Bowes Manor | 6.8 km south-west of <br> Downhill Lane junction | Bowes Manor is an equestrian riding school. |
| Riverside Riding <br> Centre | 3 km south of Downhill <br> Lane junction | Riding Centre. |

### 4.6 Transport Routes and Stops

4.6.1 Figure 5 shows the main bus stops and routes within the study area. The main bus routes are also described below:

- Bus route 35A that runs between Heworth and Low Moorsley via Central Sunderland through Testos;
- Bus route 50 runs between South Shields and Washington / Durham via Testos junction as well as the A19, A1290 and Downhill Lane ;
- Bus route 56 that travels between Newcastle and Sunderland, via the A1290, Downhill Lane and Downhill Lane junction;
- Bus route X24 runs between Newcastle and Sunderland via Testos Junction.
- Bus route X34 travels between Newcastle and Horsely Hill, via Testos junction;
- Bus route X36 is an express service between Newcastle and Sunderland through Testos; and
- Bus routes X9 and X10 are express services between Newcastle and Middlesbrough via Gateshead along the A184 and A19 through Testos.
4.6.2 Two bus-stops have been highlighted due to safety concerns for passengers (one on each side of the A184 west of Testos Junction). These stops are used by the X9, X10, 35A and X36 services.
4.6.3 Access to the bus-stop on the westbound carriageway is by crossing both carriageways from the footway on the north side of the eastbound carriageway; there is a footpath across the widened central reserve. However, this means that service users must cross the busy traffic flow on the A184 with no traffic light facilities. As no formal crossing exists, passengers must take a risk whilst crossing an extremely busy dual carriageway with frequent motorised lane changes given the close proximity to the west-bound exit of Testos junction. There is anecdotal evidence of children and other pedestrians from a permanent traveller's site at West Pastures using these stops and therefore needing to cross the dual carriageway further to the west in order to reach the only footpath which runs parallel to the east-bound carriageway. Furthermore, there is also anecdotal evidence that some elderly passengers refuse to disembark at this west-bound stop given their safety concerns and instead carry on their journey and get a second bus to return to the same location from the east traffic flow direction (reported by some of the affected individuals at the 2009 public consultation).
4.6.4 Another bus stop identified of concern is the north-east bound stop along the A1290 outside of the Nissan Manufacturing Plant due to inadequate crossing facilities. This road is likely to be dualled as part of the future IAMP development and therefore access could be become more difficult in the future.
4.6.5 The nearest Tyne and Wear Metro Station to the A19 Testos junction is Fellgate, approximately 2 km north of Testos junction. The distance between the Metro Station and facilities in the vicinity of Testos junction, Nissan Manufacturing Plant and proposed IAMP site may encourage commuters to use private motorised transport or public buses rather than walking or cycling. Additionally, Tyne \& Wear Metro currently only permits the transportation of fold-up bicycles with the exception of certain stations at non-peak commuting times, which could exacerbate this trend.
4.6.6 The nearest Tyne and Wear Metro Station to Downhill Lane junction is South Hylton, which is located approximately 3.4 km south of Downhill Lane junction. Again, the distance between the Metro Station and facilities in the vicinity of Downhill Lane junction, including Nissan Manufacturing Plant, could deter NMU journeys.


## 5 EXISTING DESIRE LINES

5.1.1 A desire line is described by the DMRB as a line along which there is either theoretical or known demand for use by NMUs, whether or not there is evidence of actual usage. In other words, a desire line is a line between two points along which there may or may not be either formal or informal facilities for NMUs, but for which there is either evidence of use (permissible or not), or reason to suspect NMUs would travel that line if a route were provided.
5.1.2 At Testos junction, there are a number of desire lines potentially relevant to the scheme. These are described in detail further below, and in brief are:

- between the residents of Hedworth / Fellgate and the jobs, facilities and bus routes at Boldon Colliery and Boldon Business Park, crossing the A19;
- between residents of Hedworth / Fellgate and the A184 bus stops west of Testos junction;
- between Witney Way (Boldon Business Park) west past West House Farm; using Bridleway B28;
- between residents of Boldon Colliery, New Town and West Boldon and the A184 bus stops west of Testos junction;
- between residents along West Pastures Lane and the jobs, facilities and bus routes at Boldon Colliery and Boldon Business Park, crossing the A19;
- along the A184, for longer-distance commuting to and from Gateshead;
- parallel to the A184 to West Pastures Lane, as part of circular recreational routes; and
- along the A184 west and east of across Testos junction for longer-distance journeys
5.1.3 Between Testos and Downhill Lane junction, there are further desire lines of relevance:
- east-west crossing of the A19 along severed Footpath B27; and
- Bridleway B46 between Abingdon Way and Downhill Lane Junction, including a popular cyclist 'shortcut' onto the south-bound slip road of the A19 at Downhill Lane junction.
5.1.4 At Downhill Lane junction the following desire lines are of relevance:
- leisure travel along Downhill Lane and Follingsby Lane over Downhill Lane junction, potentially as part of Great North Forest Trail; and
- commuting travel from the Boldons via Bridleway B46 and/or Downhill Lane, across the bridge at the junction to the Nissan plant.
5.1.5 South of Downhill Lane Junction, the desire lines of relevance are considered to be:
- between Town End Farm estate / Hylton Castle and surrounding areas to the Nissan Manufacturing Plant and other businesses via the Nissan footbridge, primarily as a commuting route but also for leisure and accessing green areas and the North East Land, Sea and Air Museum.
5.1.6 In addition, to the west of the A19 there is a strong desire line for commuting travel to the Nissan plant along Follingsby Lane from residential areas in Gateshead. This route is also used for recreational trips along the Great North Forest Trail, crossing the A19 at Downhill Lane Junction.
5.1.7 The following sections provide further detail on the identified desire lines.

Between the residents of Hedworth / Fellgate and the jobs, facilities and bus routes at Boldon Colliery and Boldon Business Park, crossing the A19
5.1.8 This is a strong NMU desire line due to the job opportunities and facilities at Boldon Colliery and Boldon Business Park. There is currently no safe or formal A19 crossing point in this area. Pedestrians are assumed to use a road bridge, with pedestrian crossing facilities, north of Testos Junction at Hedworth Lane. Survey results and anecdotal accounts also indicate that pedestrians may illegally cross fields in order to use the Bridleway B28 overbridge.

## Between residents of Hedworth / Fellgate and the A184 bus stops west of Testos Junction

5.1.9 These bus stops along the A184 for bus routes X9 and X10 are part of the shortest and most direct known public transport route between Middlesbrough and residents north of Testos junction. The bus stops also provide routes to Sunderland and Newcastle, though there are alternative bus routes for these destinations along Abingdon Way. Pedestrians in south Hedworth and Fellgate currently have an approximately 20 -to-30-minute walk north and east across the Hedworth Lane overbridge, south down Abingdon Way, and west across Testos junction to access these bus stops. A direct walk across fields would be 5 to 10 minutes for many residents, but there is currently no formal NMU route available. The level of demand for these bus stops, and origin of any users, is currently unknown.

## Between Witney Way (Boldon Business Park) and past West House Farm; using the B28 overbridge

5.1.10 The agricultural accommodation bridge over the A19, approximately 250 m north of Testos junction carries Bridleway B28 and shows evidence of use by equestrians, linking popular equestrian routes east of the A19 with countryside to the west; including NMU links across the A184, and southwards into the countryside. It is also the safest location to cross the A19 in the study area north of Downhill Lane junction, as it is completely segregated from road traffic. Previous survey results identify a level of NMU usage for purposes of work and personal leisure. There is an east-west desire line for equestrians across the A19 in the vicinity of Testos junction, with horse owners and attractive riding routes located both sides of the A19. Bridleway B28 is "a well-used route by horse-riders", as stated by the British Horse Society. During the site walkover, the condition of the western ramp was very poor and overall the condition of the bridleway was average. Wheelchair access would be very limited due to the gradient of the ramps, steps and surfacing of the bridleway.

## Between residents of Boldon Colliery, New Town and West Boldon and the A184 bus stops west of Testos Junction

5.1.11 These bus stops provide access to bus routes X9, X10, 35A and X36, and are accessible via Bridleway B28 and Testos junction (with its signalised pedestrian crossings at the north segment).

## Along the A184, for longer-distance commuting to and from Gateshead

5.1.12 Frequent incidental observations during site visits and survey results indicate that the A184 is relatively well-used as an east-west cycle route. The bulk of the usage is for commuting between residential areas in South Tyneside, presumably mainly the Boldons, and employment or educational opportunities in Gateshead. The great majority of this usage in both directions is located on the footway along the north side of the A184 (i.e. the westbound cyclists are going against the flow of vehicular traffic). There are cycleway facilities on most stretches of the A184 west of Whitemarepool Junction and east of Abingdon Way roundabout, and there has been a long-standing strategic aspiration by the three local authorities along this corridor (Sunderland, South Tyneside and Gateshead) to
create continuous cycleway facilities along the A184. However, this is not within their power as a 3 km stretch of the A184 between Testos Junction and Whitemarepool Junction is a trunk road in the care of Highways England.

## Parallel to the A184 to West Pastures Lane, as part of circular recreational routes

5.1.13 In consultation with the British Horse Society and others between 2007 and 2014, there has been repeated reference to the need to access the countryside west of the A19 via a crossing over the A19. At present the A19 crossing is provided by Bridleway B28 and its agricultural accommodation bridge north of Testos Junction, and the circular route proceeds in part via West Pastures, although there is no safe means of crossing the A184 between the two.
Between residents of West Pastures Lane and the jobs, facilities and bus routes at Boldon Colliery and Boldon Business Park, crossing the A19
5.1.14 There is a permanent traveller's site at West Pastures Lane to the west of the A19, and south of the A184. Residents of this site are known to cross the A184 at a non-signalised crossing point near the two bus stops, either side of the highway, and can cross the A19 either at Testos junction or using Bridleway B28 (with little difference in walking distance).

## Along the A184 west and east across Testos Junction for longer-distance journeys

5.1.15 Travelling east-west is a key desire line for cyclists going between Sunderland and Gateshead. Survey data from 2006 and 2014 identify cyclists moving east-west, with the majority utilising Testos junction as opposed to travelling over Bridleway B28. There is a pedestrian footway along the east-bound carriageway of the A184 between Gateshead and Sunderland, which is used by some pedestrians and also illegally by cyclists who do not wish to use the often busy carriageway, which has no formal cyclist provision. Historical issues have been reported regarding cyclists using the footway heading west-bound against the flow of traffic, causing issue for traffic, particularly on days with poor visibility due to bad weather.

## East-west crossing of the A19 along severed Footpath B27

5.1.16 Footpath B27 is a countryside footpath linking West Pastures Lane (and part of a wider east-west footpath link) with Bridleway B46. It was severed by the A19 in the 1960s, but was not formally stopped up. Use of Footpath B27 now requires use of a gap in the central reserve barrier, making it dangerous due to the high volumes and speeds of traffic on the A19. However, it does have a low level of use, with some pedestrians reported crossing the A19 carriageway.
Bridleway B46 between Abingdon Way and Downhill Lane junction, including a popular cyclist 'shortcut' using nearly 250 m of the south-bound slip road between Downhill Lane and a point where they cross the highway barrier
5.1.17 Bridleway B46 is situated to the east of the A19 and provides a well-used north-south link between residents and key community facilities and industrial areas such as the Boldon Business Park, Asda superstore, Cineworld and the Nissan Manufacturing Plant. It is well used by cyclists and pedestrians. Cyclists include, in particular, workers commuting from the surrounding area to and from the Nissan Manufacturing Plant in Washington, south of Downhill Lane junction. Surveys showed strong usage of this route by cyclists. They also revealed that some cyclists climb up the A19 south-bound off-slip embankment slope, climb over the safety barrier fence and use the end of the slip road to access the A1290 towards the Nissan Manufacturing Plant as this is a quicker route. Cyclists have also been seen
completing the reverse of this desire line which is even more dangerous: i.e. travelling down the off-slip against traffic to return to the bridleway.

## Leisure travel along Downhill Lane and Follingsby Lane over Downhill Lane

 junction, as part the 'Great North Forest Trail'5.1.18 This route carries the long-distance 'Great North Forest Trail', and is a popular crossing for cyclists, equestrians and pedestrians. There is an east-west desire line for equestrians across the A19, with horse owners and attractive riding routes located both sides of the A19, including Bridleway B46. Cyclists using the segregated cycleway across Downhill Lane junction need to disembark whilst crossing for safety reasons. This may encourage cyclists to use the road instead of NMU facilities.
Commuting travel from the Boldons via Bridleway B46 and/or Downhill Lane, across the bridge at Downhill Lane Junction to the Nissan plant
5.1.19 Survey results indicate that large numbers of cyclists from east of the A19 and north of Testos Junction cross the A19 at Testos Junction as part of their commute to work at the Nissan plant. This pattern continues throughout the year, as indicated by surveys in both January/February and in the summer period in 2016.
Between Town End Farm/ Hylton Castle and the Nissan Manufacturing Plant via the footbridge, primarily as a commuting route but also for leisure and accessing green areas
5.1.20 A footbridge lies south of Downhill Lane junction and provides east-west access for commuters traveling between Town End Farm estate and Nissan Manufacturing Plant, Gateshead College Skills Academy, and other places of work. This route is also popular with people accessing green areas. No surveys have been undertaken to assess numbers but observations from the site visit confirm that a variety of NMUs use this footbridge. The parapet height enables cyclists to cross without disembarking. The ramps to the bridge are steep, and therefore the footbridge may not be accessible by vulnerable users.

### 5.2 Future Desire Lines

5.2.1 The proposed IAMP site in close proximity to Downhill Lane junction may increase demand for north-south movements both sides of the A19 (including where no provision currently exists from Hedworth / Fellgate) and east-west movements along existing routes. The proposals would increase both motorised and non-motorised traffic at Downhill Lane junction and the wider highway network, including Testos junction. During the consultation event in December 2016, IAMP confirmed that the A1290 would need to be dualled as part of the development.

## 6 EXISTING NMU TRAFFIC FLOWS

### 6.1 NMU Survey and Interview Method

6.1.1 NMU surveys were carried out in 2006 and 2014 at Testos junction and winter and summer 2016 at Downhill Lane junction. The 2014 survey data is shown on Figure 7 and the 2016 data is shown on Figures 8 and 9. The 2006 survey data is detailed in Appendix A. A summary of the 2014 and 2016 surveys is provided below.
6.1.2 In addition to the above surveys, two-week, 24 hr video surveys of the Bridleway B28 overbridge, north of Testos Roundabout, were completed in 2015. The video surveys covered a week of a school holiday as well as a normal working week. No equestrians were observed using the overbridge over the two-week period.

### 6.2 Testos Junction NMU Survey Data (2014)

6.2.1 Surveys were undertaken across four days in 2014 for Testos junction only. The surveys were undertaken on:

- Saturday 7 June;
- Sunday 8 June;
- Tuesday 10 June; and
- Wednesday 11 June.
6.2.2 These days were selected to represent both weekday and weekend day activity during school term time (i.e. when activity would not be suppressed by holidays), and in the summer term when usage would be least likely to be suppressed by bad weather.
6.2.3 The surveys were carried out at 10 locations (see Figure 7), identified in consultation with South Tyneside's PRoW officer and local representatives of NMU groups. The survey locations are shown on Figure 7. Site 8 had to be resurveyed on the weekend of the 14 and 15 June as the surveillance camera was stolen during the earlier surveys.
6.2.4 Surveys were undertaken over a 13 hour period between 6 am and 7 pm (to capture NMU trips associated with the shifts changes at Nissan Manufacturing Plant) and involved a combination of counting NMUs using camera monitoring along the local PRoW network and conducting face-to-face interviews with a sample of these users. These results are shown on Figure 7 and summarised below:
- Bridleway B28 - the results suggest that Bridleway B28 has relatively low usage. All of the interviewees were male and most of the journeys made were for commuting purposes, with leisure/ recreation the second most common purpose. No equestrians were recorded using Bridleway B28 on any of the four days. Horse manure was identified on Bridleway B28 in 2014, suggesting that it was used by equestrians, though the use is assumed to be relatively low. It is likely that the poor crossing facilities where Bridleway B28 meets the A184 to the west of Testos junction deters equestrians from utilising this route.
- Footpath B27 - Results indicate that Footpath B27, east and west of the A19, has very low usage. The majority of its total usage to the east of the A19 (10/12 movements) was by pedestrians accessing Bridleway B46 in both directions. Only one pedestrian was recorded using the footpath to the west of the A19. No equestrians or cyclists were recorded along this route. Footpath B27 was recorded as the origin for more movements than as the destination to the east of the A19 (7/12). This could suggest that users are accessing the route from across fields.
- Bridleway B46 - Bridleway B46 is a popular route for NMUs with a significant number of trips recorded. It is notable that the majority of users are cyclists (425/596 movements recorded at site three across the four days) with more than half interviewed saying it was work related (70/133). Survey results show a low level of equestrian movement on Bridleway B46 (3/596 movements recorded at site three across the four days). The survey results suggest that equestrians located to the east of the A19 travel further east to the rural areas whilst equestrians to the west of the A19 travel further west on existing rural routes. The surveys also confirmed evidence of both cyclists and pedestrians using a potentially dangerous short-cut off Bridleway B46 onto the A19 south-bound off-slip road.
- A184 (east / west and crossings) - A large proportion of cyclists were recorded turning onto Abingdon Way when they reach the A184 / Abingdon Way roundabout (60/140 movements approaching from the east and 47/79 movements approaching from the west across the four survey days). Much of the NMU traffic along the A184 originates from Abingdon Way. The results also found that Abingdon Way was the most common destination for NMU journeys along the A184 from east and west. However, large numbers of cyclists were also recorded to the west of Testos junction (91/99 movements going east and 90/97 movements going west across the four days). There was very low equestrian usage of the A184 east and west of Testos junction. Over the four days, only three equestrian movements were recorded, all to the east of Testos junction; two travelling east along the A184 from Abingdon Way and one travelling east along the A184 from the northern end of Bridleway B46. During the site visit in June 2014, horse manure was identified west of Testos junction on the pavement along the northern end of the A184, near to the bus stop west of Bridleway B28, suggesting some usage by equestrians, although there is no legal right of use for horse-riders on the footway.


### 6.3 Downhill Lane Junction NMU Survey (2016)

6.3.1 Nine days of surveys were undertaken across 2016 on the following dates:

- Sunday 31/01/2016;
- Tuesday 02/02/2016
- Wednesday 03/02/2016;
- Saturday 06/02/2016;
- Wednesday 08/06/2016;
- Saturday 11/06/2016;
- Wednesday 27/07/2016;
- Saturday 30/07/2016; and
- Saturday 27/08/2016.
6.3.2 These survey dates have been grouped into winter surveys and summer surveys for analysis below. Dates were selected to represent both weekday and weekend days during school term time and during school holiday time, plus the August bank holiday weekend, to identify a pattern of both utility journeys and leisure usage across different periods. Both winter and summer periods were covered to determine how seasonal differences affected commuting patterns in particular, and because other evidence had suggested that it was likely that usage remained high throughout the year.
6.3.3 There were a total of five survey locations, which are shown on Figures 8 and 9. NMUs were surveyed between 06:00 and 24:00.

Downhill Lane junction winter surveys (31 January, 2 February, 3 February and 6 February 2016; see Figure 8)

- Site 1 - shows strong cyclist movement along the A1290 between Downhill Lane junction and in the direction of Nissan Manufacturing Plant. The surveys also show some cyclists movements to the residential areas to the west including Usworth and Washington. The survey results show a trend of cyclists traveling to Nissan Manufacturing Plant on weekdays and travelling west-bound along the A1290 on weekends. The survey data indicates that equestrian activity in this area is low. This is assumed to relate to the lack of facilities, but also more attractive, more suitable routes to the north, particularly along Follingsby Lane and Downhill Lane.
- Site 2 - shows high cyclist numbers crossing Downhill Lane junction. The majority of the cyclists (189/304) travelled from Downhill Lane junction along the A1290 towards Nissan Manufacturing Plant. However, a large proportion of cyclists (115/304) travelled west along Downhill Lane. A total of nine equestrians were recorded along Downhill Lane. Approximately 30 pedestrians were recorded traveling across Downhill Lane junction and south along the A1290, and the reverse journey.
- Site 3 - shows a strong link between cyclists crossing Downhill Lane junction and using Bridleway B46 in both directions. This indicates a strong desire line between the residential areas to the north-east such as West Boldon, Boldon Colliery and the Nissan Manufacturing Plant to the south-west of Downhill Lane junction. However, a large number of the cyclists (131/642 cyclist movements recorded at site three across the four survey days) also travelled across Downhill Lane junction, and east along Downhill Lane. A number of pedestrian movements were also recorded travelling across Downhill Lane junction and along Downhill Lane and Bridleway B46. A total of six equestrians were recorded on Downhill Lane, east of Downhill Lane junction.
- Site 4 - shows that Bridleway B46 is popular with cyclists and pedestrians. Sixteen cyclists were shown using a shortcut onto the south-bound off-slip road of the A19 at Downhill Lane junction. This is a dangerous route at present to the cyclists and road users who may not expect cyclists to appear over the left guard rail parallel to the slip road.
- Site 5 - shows a high number of cyclists travel along Bridleway B46 and across Downhill Lane junction. This shows that this route is a popular commuter route between the Nissan Manufacturing Plant and residential areas to the east of the A19. Four cyclists were recorded travelling down the south-bound slip road towards Bridleway B46. A high number of cyclists were also recorded travelling along Downhill Lane and Washington Road towards Town End Farm estate.

Downhill Lane junction Summer Surveys (8 June, 11 June, 27 July, 30 July and 27 August 2016; see Figure 9)

- Site 1 - shows a similar pattern as Site 1 during the winter surveys. The surveys confirm strong cycling movement along A1290 and towards Nissan Manufacturing Plant (both Arms 1C and 1B), and the reverse journey. A small number of equestrians were also recorded at Site 1.
- Site 2 - also confirms strong cyclist movements across Downhill Lane junction, and A1290 and Downhill Lane. The largest number of cyclists was recorded on Wednesday 8 June, which was a school term-time weekday. This suggests that this route is predominately used for commuting, rather than for leisure activities.
- Site 3 - confirms strong cyclist movements across Downhill Lane junction, along Bridleway B46 and Downhill Lane. Again, the highest number of cyclists was recorded on Wednesday 8 June, a school term-time weekday. A total of 43 pedestrians were recorded travelling across Downhill Lane junction and along Bridleway B46.
- Site 4 - shows strong cyclist and pedestrian movements along Bridleway B46. A total of seventeen cyclists were recorded taking the shortcut on the south-bound slip road of the A19 at Downhill Lane junction.
- Site 5 - shows a similar pattern to Site 5 during winter. However, more cyclists were recorded travelling along Washington Road than the winter survey results. Fewer cyclists were recorded travelling north along Bridleway B46 than the winter surveys. This could be due to employees taking annual leave within the summer holidays.


## 7 DEVELOPMENT PROPOSALS

### 7.1 Industrial and Commercial

7.1.1 A major new, nationally significant, development called the International Advanced Manufacturing Park (IAMP) is proposed to the west of the A19, to the north of Nissan Manufacturing Plant (see Plate $7-1)^{4}$. The proposal is a joint venture between Sunderland and South Tyneside Councils and is expected to across the council boundaries. The IAMP is expected to cover a large area (over 100 hectares) of land and to be developed in a number of phases. The proposal is subject to Development Consent Order (DCO) application, which is due to be submitted spring 2017. The construction period of the IAMP would likely coincide with Testos and Downhill Lane junction improvement schemes.


Plate 7-1: IAMP Boundary
7.1.2 The draft Environmental Master Plan ${ }^{5}$ for the proposed IAMP indicates that there would be pedestrian and cycle routes as well as segregated cycle lanes along the road as part of the scheme (see Diagram 7-2). The DCO application for IAMP will consider both developments at Testos and Downhill Lane junction.

[^3]
$\stackrel{\text { KEr }}{\square}$ $\qquad$


Supporingu vest Inctuding tre rammele.s.
Smil Sale Ationdixi nordadoned

[Paking

$\underset{\substack{\text { Sod Ne } \\ \text { Rocid } \\ \text { Sor }}}{ }$




- New Brade eerethenis
moscose
- ${ }^{\text {Ruringere }}$ Ponds





Diagram 7-2: IAMP Environmental Master Plan
7.1.3 Table 6-1 provides details of the other potential local developments in the wider area.

Table 6-1: List of developments/ future developments in proximity to both junctions

| Developer | Development |
| :---: | :---: |
| Sunderland City Council | Nissan Extension |
| Sunderland City Council | Enterprise Zone Site 1 (Turbine Park) |
| Sunderland City Council | Enterprise Zone Site 2 |
| Sunderland City Council | Enterprise Zone Site 3 (West of Nissan) |

### 7.2 Residential

7.2.1 Table 7-1 below lists large-scale residential development sites (>100 dwellings) located in relative proximity to the site that have been allocated in the South Tyneside Site Specific Allocations Development Plan Document ${ }^{6}$.

Table 7-3: LDF Sites and Proposals - Housing

| Policy/Site <br> Reference | Location | Current <br> Use(s) | No. of <br> Dwellings | Comments |
| :--- | :--- | :--- | :--- | :--- |
| SA9-A-xxx | Bedewell Industrial <br> Estate, Adair Way, <br> Hebburn | Industrial <br> Estate | 130 | $2004-2016$ existing <br> commitment and priority <br> housing scheme (phase <br> $1)$ |
| SA9-A-xxxv | Residential Village <br> (former VA Tech <br> Reyrolle), Hebburn | Recently <br> developed <br> for housing | 277 | $2004-2016$ existing <br> commitment and priority <br> housing scheme (phase <br> $1)$ |
| SA9-A-xxxvi | Hedgeley Court, <br> Hedgeley Road, <br> Hebburn | Recently <br> developed <br> for housing | 205 | $2004-2016$ existing <br> commitment and priority <br> housing scheme |
| SA9-A-xxxvii | Land at Monkton <br> Fell (north) Hebburn | Agricultural <br> Land | 145 | $2004-2016$ existing <br> commitment and priority <br> housing scheme |
| SA9-B-viii | Bedewell Industrial <br> Estate, Adair Way, <br> Hebburn | Industrial <br> Estate | 139 | $2016-2021$ existing <br> commitment and priority <br> housing scheme (phase <br> 2) |
| SA9-B-xi | Residential Village <br> (former VA Tech | Vacant | 154 | $2016-2021$ existing <br> commitment and priority <br> housing scheme (phase |

[^4]|  | Reyrolle), Hebburn |  |  | 2) |
| :--- | :--- | :--- | :--- | :--- |
| SA9-B-xii | Land at Monkton <br> Fell (central) | Agricultural | 323 | 2016-2021 existing <br> commitment and priority <br> housing scheme |

7.2.1 The following sites are situated to the south of the site and are allocated for housing in the Sunderland City Council Unitary Development Plan Alternation No. 2 Proposals Map ${ }^{7}$ :

- NA7.3 Hylton Lane, Town End Farm (south-east) - allocated for 140 dwellings;
- NA7.4 Kidderminster Road, Downhill (south-east) - allocated for 120 dwellings; and
- NA7.6 Fullwell Quarries (east) - allocated for 160 dwellings.
7.2.2 The residential developments at Town End Farm and Downhill in particular are close to Downhill Lane Junction, and given their location east of the junction, combined with the proposed expansion of employment west of the junction via the IAMP development, there is a high likelihood that demand for NMU journeys across the junction will increase from its already high level.


### 7.3 Transport / Improving Accessibility

7.3.1 The South Tyneside Local Development Framework ${ }^{8}$ identifies that the A19 between South East Northumberland and Doxford Park, Sunderland is a key corridor for economic growth. The Development Plan notes that the proposed improvements at the A19 / A184 Testos junction reflect the corridor's importance.
7.3.2 The South Tyneside Site Specific Allocations Development Plan Document ${ }^{6}$ sets out various proposals for improvements to existing highways and public transport routes. Table 7-2 details future transport schemes and the spaces allocated within close proximity to the junctions.
Table 7-4: LDF Sites and Proposals - Transport

| Policy/Site <br> Reference | Location | Current <br> Use(s) | Comments |
| :--- | :--- | :--- | :--- |
| SA2-A | Various across South <br> Tyneside | Various | A184-Creating and improving <br> pedestrian / cycle / bridleway routes to <br> facilitate the continued expansion of the <br> South Tyneside cycle network and <br> Public Rights of Way network |
| SA2-I-xii | B1298 New Road / <br> Boldon Lane junction <br> Boldon and South <br> Shields | Junction | Enhancements and highway <br> infrastructure improvements for traffic <br> movement and the reduction of <br> congestion on the Strategic Road <br> Network by 2016 |

[^5]| SA2-I-xV | B1298 Abingdon Way <br> / B1298 Henley Way <br> junction <br> Boldon Colliery | Junction | Enhancements and highway <br> infrastructure improvements for traffic <br> movement and the reduction of <br> congestion on the Strategic Road <br> Network by 2016 |
| :--- | :--- | :--- | :--- |
| SA2-I-xvi | B1298 Abingdon Way <br> between A184 <br> Newcastle Road and <br> the B1298 Henley <br> Way <br> Boldon Colliery | Link | Enhancements and highway <br> infrastructure improvements for traffic <br> movement and the reduction of <br> congestion on the Strategic Road <br> Network by 2016 |

7.3.3 The Sunderland City Council Unitary Development Plan Alternation No. 2 Proposals Map ${ }^{7}$ identifies the A19 and Downhill Lane and Washington Road as a strategic road network. However, no developments in the vicinity were identified.
7.3.4 In February 2009, the North East region outlined their regional priorities for housing, transport and economic development schemes. Existing transport commitments in Tyne and Wear included: A19 Seaton Burn; A19 Testos; A19 Coast Road; A19 Moor Farm (in Northumberland but closely linked to the network in Tyne and Wear); Sunderland Central Route; Sunderland Strategic Transport Corridor; and local bus service improvements in Tyne and Wear (Phases 1 and 2).

## 8 RELEVANT POLICIES \& OBJECTIVES OF OTHER ORGANISATIONS

### 8.1 Tyne \& Wear Joint Local Transport Plan (LTP3)

8.1.1 The Keep Tyne and Wear Moving: LTP3: The Third Local Transport Plan for Tyne and Wear Strategy 2011-2021 ${ }^{9}$ was published in March 2011. The Third Local Transport Plan comprises two documents:

- The Third Local Transport Strategy 2011 to 2021; and
- The Third Local Transport Delivery Plan 2011 to 2014.
8.1.2 It was prepared jointly by five local authorities, Gateshead, Newcastle, North Tyneside, South Tyneside and Sunderland. It is the third Local Transport Plan (LTP3) for Tyne and Wear. It comprises a ten-year strategy (2011-2021) covering all forms of transport in Tyne and Wear, underpinned by the first in a series of three-year delivery plans (2011-2014) setting out how the strategy will be put into effect at a local level.
8.1.3 As stated in LTP3; the vision for Tyne and Wear is as follows:
'Our strategic networks will support the efficient movement of people and goods within and beyond Tyne and Wear, and a comprehensive network of pedestrian, cyclist, and passenger transport links will ensure that everyone has access to employment, training, community services and facilities.'
8.1.4 To achieve this vision the document states five goals that have been identified:
- To support the economic development, regeneration and competitiveness of Tyne and Wear, improving the efficiency, reliability and integration of transport networks across all modes.
- To reduce carbon emissions produced by local transport movements, and to strengthen our networks against the effects of climate change and extreme weather events.
- To contribute to healthier and safer communities in Tyne and Wear, with higher levels of physical activity and personal security.
- To create a fairer Tyne and Wear, providing everyone with the opportunity to achieve their full potential and access a wide range of employment, training, facilities and services.
- To protect, preserve and enhance our natural and built environments, improving quality of life and creating high quality public places.
8.1.5 In terms of specific NMU objectives, the Tyne and Wear Local Transport Delivery Plan (2011-2014) states an important aim is to: 'engage with the population in order to promote change in travel towards more sustainable modes such as public transport, cycling, walking and car sharing.' Policy 21 in the LTP3 is relevant to this and states that "we will give priority to, and invest in walking and cycling".
8.1.6 As stated in the LTP: "It is fundamental to LTP3 to encourage safe, attractive and enjoyable streets where people want to walk. Not only does this help to reduce car use and congestion but it also promotes good health and community cohesion, helping to deliver a better quality of life for everyone".

[^6]8.1.7 Policy 21 in the LTP3 is relevant and states that "we will give priority to and invest in walking and cycling".
8.1.8 Section 14.2.2 of the LTP3 sets out the 'The Cycling Vision - what cycling in Tyne and Wear will look like in 2021'. Table 8-1 details these points.

Table 8-1: LTP 'The Cycling Vision - what cycling in Tyne and Wear will look like in 2021'

| Point | Vision |
| :---: | :---: |
| 1 | A completed network of direct strategic on and off-road cycle routes across the area, connecting key hubs and trip generators within the five local authorities and into neighbouring areas. |
| 2 | Local cycling routes have been created to connect neighbourhoods with local services and facilities, using a varied range of infrastructure (including advisory signs, cycle lanes and off-road provision). |
| 3 | The National Cycle Network routes are very high quality and legible routes that provide an important tourism product to Tyne and Wear, supported by facilities that attract tours and day-trippers to the area. The cycle network overall has promoted many more sustainable trips to local tourist and recreational destinations. |
| 4 | A majority of schoolchildren in Tyne and Wear walk and/or cycle to school. |
| 5 | Travel to work schemes have been highly successful, and attract a significant percentage of overall trips by cycle. |
| 6 | All cycle routes are maintained to agreed high standards across the area routes are clean, and complaints are low. |
| 7 | The increased levels of cycling have had a marked positive contribution to the health of people in Tyne and Wear. |
| 8 | Better management and integration of existing networks. |
| 9 | Cycling collisions (by overall trips) have reduced relative to numbers of cycle trips, as a result of improved facilities, training, awareness and wholesale 'normalisation' of an expanded cycling culture. |
| 10 | Agreed standards in off-road cycle route design (including lighting of urban routes, drainage control, and removal of physical barriers) have been a factor in encouraging growth in cycling. |
| 11 | The quality of Tyne and Wear's cycling vision for the future has helped to attract external and partnership funding to the area network. The quality of the network has been recognised as providing a valuable contribution towards city greening and encouraging inward investment to Tyne and Wear. |
| 12 | A wide variety of information is available to users of the network, from cycle maps to events brochures and journey planners. |
| 13 | Partnership work with the health, education and private sector has facilitated enduring growth of a sustainable travel culture that includes cycling for day to day travel needs. |

8.1.9 Much of what has been developed as 'the cycle network' in Tyne and Wear equally provides a high standard local access facility for pedestrians including blind, partially sighted and those with restricted mobility.

### 8.2 Rights of Way Improvement Plan

8.2.1 In 2007 the Tyne and Wear authorities produced a Rights of Way Improvement Plan (ROWIP1) in accordance with sections 60 and 61 of the Countryside and Rights of Way Act 2000.
8.2.2 The ROWIP was updated to cover $2011-2021^{10}$ and published as part of LTP3 in Appendix D. ROWIP2 is designed to outline public rights of way management priorities for Tyne and Wear in an accessible format, capturing Tyne and Wear wide and authority specific priorities from 2011-2021.
8.2.3 ROWIP2 should be seen in tandem with the ROWIP1 documents. ROWIP1 is still valid to run until 2017, and still provides a valuable reference, outlining in detail the origins, changing context, role and priorities for the PROW network, as identified through very extensive market research and consultation.
8.2.4 The Tyne and Wear ROWIP 2011-2021 is a blueprint for improving the network of public rights of way across Tyne and Wear. The main aims of the Plan are to:

- Consider the present and future needs of the general public and users
- Look at the need for exercise, recreation and enjoyment of the countryside, and access to the countryside
- To consider the accessibility needs of visually and mobility-impaired people, both now and in the future.
8.2.5 An Equestrian Strategy was developed as part of the ROWIP to provide guidance and examples of good practice to the Tyne and Wear Authorities in fulfilling their statutory duties. The strategy stated that the Authorities' aim is to: "Enable equestrian activity to take place, as safely as possible, across Tyne and Wear on the road and bridleway network through the promotion and creation of regional, borough and local bridle route networks within the framework of the development of the ROWIP".
8.2.6 The strategy stated that the Authorities' aim is to:
"Enable equestrian activity to take place, as safely as possible, across Tyne and Wear on the road and bridleway network through the promotion and creation of regional, borough and local bridle route networks within the framework of the development of the ROWIP".
8.2.7 To achieve this aim the strategy sets out the followings objectives:
"1. Promote, within the framework of the Public Rights of Way Improvement Plan, a viable equestrian network of both local and regional importance.

2. Give due consideration to the needs of equestrians when developing new highway maintenance policies and strategies, and reviewing existing ones, where possible within the limitations of operational and financial constraints.
3. Give due consideration to the needs of equestrians when designing new highways/rights of ways for horse riders/carriage drivers and improving existing highways/rights of ways for horse riders/ carriage drivers.
4. Introduce signing along/near equestrian routes in accordance with current signing legislation to increase road safety/inform users.
5. Provide additional equestrian facilities (e.g. bridges and signalised Pegasus crossings).

[^7]6. Assist planning authorities to develop policies which, in conjunction with requirements for developer provision of new sustainable travel infrastructure for pedestrian and cycle access in the locality, require that they provide suitable improvements to the equestrian and carriage driving network.
7. Work with partners (e.g. bridleway groups) to raise awareness of equestrian issues and endeavour to support national campaigns / devise programmes for road safety training related to horse riding and carriage driving, and also promote respect between all types of road users.
8. Develop effective consultation mechanisms with local rider and carriage driving groups and the Local Access Forum, to implement and monitor the strategy.
9. Seek to identify funding opportunities to support the effective implementation of the Strategy".

### 8.3 Aspirations/objectives and views of user groups about A184 / A19 Testos Junction Improvement

8.3.1 Consultation with the local authorities, the Tyne and Wear Local Access Forum and user groups has been key to the development of both the Testos and the Downhill Lane Junction proposals. Early consultation was initiated in 2006 and a number of events have taken place since. In particular:

- An initial consultation meeting with user groups and the local access forum, including a site walkover, was held in 2006, to identify concerns and aspirations;
- A presentation on scheme proposals was made to user groups and a further site walkover held in 2007;
- A consultation workshop was held on the 8 July 2014 at the Dryden Centre in Gateshead in order to discuss a number of options for the layout of NMU facilities related to the A19 Testos junction Improvement Scheme, ahead of a planned public consultation on the scheme due in November 2014;
- A further workshop was held 5 March 2015 regarding the proposed NMU facilities included in the A184 / A19 Testos Junction Improvement design. The aim of the meeting was to inform stakeholders of the proposed NMU provisions, closing the consultation loop that had begun with the NMU consultation workshop of June 2014 and the public consultation of November 2014; and
- A consultation meeting with the local access forum and user groups was held on 14 December 2016 to discuss Downhill Lane junction, in parallel with the public consultation which was in progress at that time.
8.3.2 The outcome of the NMU-specific consultation events in 2014-6 are summarised below.

Consultation workshop, 8 July 2014
8.3.3 The PRoW officers for South Tyneside, Gateshead and Sunderland City Councils were invited to attend, along with members of the Tyne and Wear Local Access Forum and local representatives of NMU groups.
8.3.4 The NMU workshop option plans are provided in Appendix B.
8.3.5 The outcome of the discussions resulted in the following summary points:

- All attendees agreed that if funds were unlimited, the most favourable option would be a combination of NMU Workshop Options 1 and 4.
- Option 4 came out as the preferred single option at the workshop.
- At-grade NMU facilities should be provided on each arm of Testos Junction and at the A184 / Abingdon Way roundabout.
- Attendees questioned the value of the replacement over-bridge at the location shown on Option 1.
- A Local Access Forum representative was concerned about potential security / personal safety issue of any fencing, which would reduce the visibility around and forward along NMU routes.
- Attendees agreed that the benefit of NMU Workshop Option 1 is that it would connect the communities to the north of Testos Junction with one another (Hedworth and Boldon Colliery).
- General consensus that the loss of the current over-bridge is less of an issue if the replacement facilities for NMUs are high-quality.
- Attendees would like to know details of the traffic modelling outputs for Testos and predicted traffic volume at the A184 / Abingdon Way roundabout (with the scheme) when available.
- General consensus that it would be important for the scheme to cater for equestrian users from the west of A19.
- Attendees supported the proposal for an improvement to cycle facilities at the southern end of B46 (common to all four options).
- Sunderland City Council PRoW officer confirmed that improvements to the cycleway network at Downhill Lane Junction are currently being carried out. This comprises provision of a cycleway along Washington Road from Town End Farm to the junction, and from the junction along the A190 to and beyond the Nissan plant.
- Two additional NMU facilities were identified by the NMU groups at the workshop as detailed below.
- Cycleway access requirement on the northern side of the A184 adjacent to the east-bound carriageway. Attendees indicated a 3 m minimum width requirement - this may be an issue due to the highway's restrictions around the Enterprise business on Testos Junction approach.
- Equestrian access requirement on the eastern edge of the A19 from the B28 north to the location of the bridge in Option 1. Attendees again indicated a 3 m minimum width requirement, which may be an issue due to available land in this location.
8.3.6 These additional requirements are currently being assessed to determine if they can be provided within the scheme boundary and land take limits.


## Consultation workshop, 5 March 2015

8.3.7 The aim of the meeting was to inform stakeholders of the proposed NMU provisions, closing the consultation loop that had begun with the NMU consultation workshop of June 2014 and the public consultation of November 2014.
8.3.8 The key points raised are as follows:

- The proposed NMU provisions would sever equestrian movements between the south and north, including movements from Witney Way / Abingdon Way.
- It was confirmed that access to the IAMP site had been accommodated.
- It was confirmed that access to the bus stop to the west of Testos junction would be included in the design.
- The standard of the NMU provision near Enterprise was queried. It was confirmed that the width would be 3 m .
- All groups agreed that it would be desirable to extend the proposed shared cycleway / pedestrian on the A184 west of Testos, westwards to Whitemare Pool junction.
- Safety was a key concern, in particular access to the bus stops to the west of Testos junction.
- It was confirmed that cyclist provision would be considered in tandem with Downhill Lane Junction Improvement scheme.
- A concern was raised that the proposed NMU facilities would have no legal status.


### 8.4 Aspirations/objectives and Views of User Groups about Downhill Lane Junction

8.4.1 A consultation meeting with the local access forum and user groups was held on 14 December 2016 to discuss Downhill Lane junction. In addition to representatives of Highways England's A19 Downhill Lane scheme, the meeting was attended by the project coordinator for the IAMP scheme to give an update on the NMU impacts of that project. Highways England representatives had previously attended several meetings between IAMP and the local access forum. The outcome of the workshop are summarised below:

- At Downhill Lane junction, there are advisory 'cyclists dismount' signs, due to the width of the path. However, there is regular anecdotal evidence of cyclists not following this recommendation. Any new provision within the junction should consider ensure for cyclists and equestrians to cross safely without disembarking. This requires both adequate path width and equestrian parapets.
- The current layout of road markings and signals at Downhill Lane Junction is both inconvenient and unclear for NMUs, who are obliged to follow a convoluted route with multiple signals and crossings. This is particularly difficult if they are making any traffic movement that does not cross the bridge. In consequence, many users ignore the official routes and cross unsafely at convenient locations, in conflict with vehicular traffic.
- The layout of road markings, crossing provision and signals on any new arrangement of Downhill Lane junction should be clearer for NMUs, particularly cyclists. The impact on equestrians should also be considered as many equestrians have been having difficulty since the alterations to the junction in 2014. Most local horses were trained to stop at roundabouts, but when the Downhill Lane junction became signalised it caused some issues.
- Any new bridge designs should consider equestrian parapets early in the scheme, as it would be much more expensive to retrospectively install parapets.
- Follingsby Lane is a popular motorised vehicle shortcut at present. If vehicle access was restricted, as planned by the IAMP development, this could affect livery yards and businesses along this road. There were questions on how to manage the road as some vehicle access required would be required for residents. It is also potentially a useful bus route from the council's perspective.
- The importance of equestrian activity to the local community was expressed. There are legacy issues of connectivity from the initial installation of the A19. The proposed developments present an opportunity to improve NMUs facilities in the area.
- Connectivity between Washington Road cycleway and Bridleway B46 should be improved in any new design; cyclists in particular currently must cross a busy
junction or travel back on themselves to wait at traffic lights to the east of Downhill Lane junction.
- It was noted that the published IAMP masterplan would extinguish the western section of Downhill Lane, between the A1290 and its junction with Follingsby Lane. All users are keen to retain access to this route, which provides connectivity between Follingsby Lane and West Pastures Lane to NMU routes such as Bridleway B46, and forms a link in the Great North Forest Trail. Survey data shows it to be well-used, especially by cyclists.
- To the west of Testos junction, there is potential for development of cycle facilities along the A184, but this would require an external Designated Funding Application to HE. Currently, cyclists travelling in both east-bound and west-bound directions illegally use a roadside footway parallel to the east-bound carriageway.


## 9 CONFLICT POINTS

9.1.1 A conflict point is defined as a location where NMUs need to do any of the following:

- Cross a motorised route at-grade;
- Share space with motorised traffic with inadequate segregation;
- Share space with motorised traffic with no segregation; and
- Where cyclists or horse riders may have to use segregated facilities to travel against the flow of motorised traffic.
9.1.2 Conflicts and the potential dangers associated with them can be reduced or resolved by:
- Providing protection or controls at crossings/junctions - ideally through grade separation; alternatively through signal controls and additional protections as appropriate;
- Providing or increasing segregation; and
- Providing additional with-flow facilities, or increased segregation, or physical barriers to protect from dazzle and noise.


### 9.2 Key NMU Conflict Points

9.2.1 The following paragraphs identify the existing conflict points of NMUs that would be affected by the Testos and Downhill Lane Junction Improvement schemes.

## Bridleway B28 / A184 northern verge

9.2.2 The bridleway joins the northern verge of the A184 to the west of Enterprise Rent-a-Car, west of Testos junction. The footway is narrow and uninviting to NMUs, especially to horseriders who have limited space in which to manoeuvre whilst either waiting to cross the eastbound carriageway of the A184. Horse riders cannot legally use the footway to travel in either direction. They cannot safely use the eastbound carriageway to travel eastwards, as they would be in serious conflict with vehicular traffic and even more so when they meet Testos Junction; in any case this is not their desire line. Nor can they safely cross the two carriageways of the A184 at this point, and if they did they would find themselves on the verge of the westbound carriageway, which is obstructed by road furniture between that point and West Pastures. Nevertheless, this route is described by horse-riding consultees as a desire line.

## Footpath B27 / A19 crossing point

9.2.3 The South Tyneside Council PRoW officer confirmed that HE put in a gap / chicane in the central reservation barriers for the users of the Footpath B27. However, as this is a very busy stretch of the A19, vehicles are travelling at speed and there is no warning to motorists of the crossing, pedestrians are reluctant to use this facility.

## Crossing east-west over Testos Junction

9.2.4 NMUs that want to travel across Testos roundabout, without using the road network, have to cross on the northern side of the roundabout over two signalised crossings on the northbound and southbound carriageways. At present, there is no non-motorised user access to the south side of the junction.

## Crossing the A184 carriageways

9.2.5 West of Testos Junction, there are bus-stops on both sides of the A184. The only access to the bus-stop on the south side (westbound carriageway) is by crossing both carriageways of the A184, but there are no signalised facilities for doing so. Some users
have reported at public consultation that they are so intimidated by the risk of making this crossing that, rather than disembarking from their bus on the westbound carriageway, they will stay on the bus all the way to Gateshead and then catch another bus back, just to arrive on the 'safe' side of the road.

## Bridleway B46

9.2.6 It has been noted during the site visit and recorded through surveys that cyclists and pedestrians scramble up the embankment slope of the A19 south-bound carriageway at the southern end of Bridleway B46 and jump over the safety barrier to use the slip road to travel onwards down the A1290 towards Washington and other destinations. Some cyclists and pedestrians were also recorded travelling on the slip-road in the wrong direction to access Bridleway B46.

## Crossing Downhill Lane junction / A1290

9.2.7 Pedestrian, cyclists and equestrians have all be recorded crossing Downhill Lane junction for both leisure and commuting purposes. In particular, a high number of cyclists have been recorded travelling across Downhill Lane junction and the A1290 towards Nissan Manufacturing Plant.

## 10 PROPOSED SCHEME OBJECTIVES FOR NON MOTORISED USERS

10.1.1 The main objective of these junction improvement schemes is to reduce congestion by separating the A19 through-traffic from A184 and local traffic at Testos; and to provide additional capacity for traffic at Downhill Lane junction through the addition of a second overbridge creating a circulatory system. The new junction layouts should improve journey time reliability and safety by reducing traffic conflicts to the benefit of all users, including NMUs.
10.1.2 As stated in Chapter 1, the NMU objectives will be used to further develop the NMU design for Testos junction and design options for Downhill Lane junction. The following NMU objectives are recommended for the scheme:

## Testos junction

- Replace the loss of the agricultural accommodation overbridge carrying Bridleway B28 with improved east-west provision catering for equestrians, pedestrians and cyclists in the vicinity of Testos junction.
- Ensure continuity and improve the safety of east-west pedestrian provision at Testos junction.
- Introduce measures to improve cyclist convenience and safety at Testos junction.
- Improve safety of access to the bus-stop on the A184 west of Testos Junction, with particular reference to the need to cross the A184 to access the bus-stop on the westbound carriageway or to return from it after disembarking.
- Improve pedestrian and equestrian connectivity along the southern side of the A184 west of the A19, connecting West Pastures Lane and its residents with the A184 bus stops and footpath network to Boldon Colliery and beyond.
- Improve the overall connectivity of the public rights of way/non-motorised user routes network and ease of access into the countryside from residential areas, mitigating the severance created by the initial construction of the A19.
- Ensure the IAMP development is considered carefully within A184 / A19 Testos Junction Improvement scheme.
- Ensure accessibility and safety of all new and replaced provision for vulnerable users.


## Downhill Lane junction

- Ensure the new junction at least replicates all existing connectivity for pedestrians, cyclists and equestrians across the A19 and between Bridleway B46, Downhill Lane, Washington Road, the A1290 and Follingsby Lane either side of the A19.
- Seek where practicable to achieve grade-separation at crossings and improved segregation between vulnerable users and vehicular traffic.
- Ensure that facilities are provided to a standard that enable cyclists and equestrians to cross the A19 safely without dismounting or the need for advisory 'cyclists dismount' signs.
- Introduce measures to improve cyclist convenience and safety at Downhill Lane junction.
- Improve the safety of the southern tie-in of bridleway B46 into Downhill Lane junction, eliminating the current 'shortcutting' along the slip roads and across the A19.
- Address the markings and layout of signals and crossings at Downhill Lane junction and ensure the new design is more compatible/convenient to all NMU user needs.
- Ensure the IAMP development is considered carefully within Downhill Lane Junction Improvement scheme and that NMU provision in the Downhill Lane Junction Improvement scheme integrates with that provided in the IAMP development.
- Ensure accessibility and safety of all new and replaced provision for vulnerable users.










Notes: 1. Traffic flows are 24hour AADT, measured in 2004 and factored up accordingly to 2005 and 2026.
2. $\mathrm{s} / \mathrm{b}=$ southbound $\mathrm{n} / \mathrm{b}=$ northbound $\mathrm{e} / \mathrm{b}=$ eastbound $\mathrm{w} / \mathrm{b}=$ westbound
3. A negative difference (-) indicates an increase in traffic flow.
4. R/about flow - North = flow around roundabout in the North position, etc

### 3.2 NMU Survey Data

3.2.1 NMUs were surveyed in September 2006, on a Wednesday and a Sunday, at the locations shown on drawing no. B0140300/B/103/06. Where the users complied, origin and destination type surveys were conducted to gain data on where the user had started from, where they were going to, why they were travelling, etc.
3.2.2 Full survey data is contained in Appendix $B$ - a brief summary of that data is detailed below - refer to Appendix B for survey locations and sample route sketches.

### 3.2.3 One Way Movements

Please note that the movement direction may be reversed but the movement on the route is recorded as one movement on that particular route.

- Location 1 - on bridleway B28
- 13 movements recorded in total over two days
- 7 cyclists, 6 pedestrians, no equestrians
- 5 on Sunday, 8 on Wednesday
- Locations 2 to 6 - crossing the A19(T) - at the junction of footpath B27 and restricted byway B26
- 5 movements recorded in total over two days
- no cyclists, 4 pedestrians, 1 equestrian
- 3 on Sunday, 2 on Wednesday
- Location 4 to 5 - on bridleway B46, from the A184 roundabout to by the A19(T) Downhill Lane junction
- 29 movements recorded in total over two days
- 14 cyclists, 14 pedestrians, 1 equestrian
- 10 on Sunday, 19 on Wednesday
- Location 4 to 7 - from Boldon Business Park area, across the A184 roundabout and along the A184(T)
- 1 movement recorded in total over two days
- 1 cyclists, no pedestrians, no equestrians
- none on Sunday, 1 on Wednesday


### 3.2.4 Looped Journeys

4 distinct looped routes were undertaken by NMUs and noted during the two days of survey:

## 4 to 1 to 7 to 4

- short loop from A184 roundabout (4), over A19(T) bridge (1), down to A184 e/bound (7) and back to A184 roundabout (4).
- undertaken by 1 pedestrian on the Wednesday
- a distance of 1.8 km


## 4 to 5 to $\mathbf{3}$ to 6 to 2 to 4

- a longer loop from A184 roundabout (4), down to Downhill Lane via B46 bridleway (5), around back lanes to West Pastures lane (3), across to west of A19 (T) boundary on footpath B27 (6), across A19(T) to junction of footpath B27 and byway B26 (2) and back to A184 roundabout (4).
- undertaken by 6 pedestrians on the Wednesday
- a distance of 4.2 km


## 6 to 7 to 1 to 4 to 2

- medium loop from west of A19 (T) boundary on footpath B27 (6), up to A184 (T) e/bound (7), around bridleway B28 and over A19(T) bridge (1), back to A184 roundabout (4) and back to junction of footpath B27 and byway B26 (2).
- undertaken by 1 pedestrian on the Sunday
- undertaken by 1 cyclist on the Sunday
- a distance of 2.4 km


## 4 to 5 to 2 to 4

- medium loop from A184 roundabout (4), to Downhill Lane via B46 bridleway (5), around to junction of footpath B27 and byway B26 (2), and back to A184 roundabout (4) on byway B26.
- undertaken by 1 pedestrian on the Wednesday
- a distance of 2.1 km
3.2.5 It would appear from the results that looped journeys are favoured by pedestrians far more than by cyclists. No equestrians were surveyed undertaking a looped route.


## Appendix B

## NMU Survey Data

Sunday 10 September 2006 07:00-19:00

| Time | User <br> Type | Route | Route <br> Type | Reason | How <br> Often | Journey <br> Duration <br> (mins) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 07:49 | Pedestrian | BBP-4-5 | One Way | Recreational | Infrequently | 50 |
| 09:45 | Equestrian | BBP-4-2-6-3 | One Way | Recreational | Week End | 30 |
| 09:54 | Pedestrian | BBP-4-5 | One Way | Recreational | Infrequently | 45 |
| 10:04 | Cyclist | Hedworth - 4-5-3 | Loop | Recreational | Week End | 60 |
| 10:13 | Cyclist | 7-1-4-2-6-7 | Loop | Recreation | Regular | 45 |
| 10:37 | $\begin{gathered} 2 \\ \text { Pedestrian } \\ \hline \end{gathered}$ | 4-2-6-7-1 | Loop | Recreation | Regular | 120 |
| 11:02 | Pedestrian | 4-5-4 | Return | Recreational | Daily | 20 |
| 11:36 | Cyclist | 4-1-7 | One Way | Recreation | Regular | 60 |
| 11:43 | Pedestrian | 4-2-6-7-1-4 | Loop | Recreation | Regular | 90 |
| 12:58 | Pedestrian | 1-4-5 | Return | Recreational | Infrequently | 30 |
| 13:05 | $\begin{gathered} 3 \\ \text { Pedestrians } \end{gathered}$ | 5-4-BBP | Loop | Recreational | Infrequently | 45 |
| 13:30 | 2 Cyclist | 4-5 | One Way | Recreational | Infrequently | 60 |
| 13:33 | Cyclist | 7-1-4 | One Way | Recreation | Regular | 60 |
| 14:13 | $2$ <br> Pedestrian | 4-5-3-6-2-4 | Loop | Recreational | Infrequently | 90 |
| 14:31 | Pedestrian | 5-4-BBP-4-5 | Return | Recreational | Infrequently | 60 |
| 14:45 | $\begin{gathered} 2 \\ \text { Pedestrian } \end{gathered}$ | 4-2-6-3-5-4 | Loop | Recreational | Regular | 120 |
| 15:13 | Cyclist | 5-4 | One Way | Recreational | Regular | 20 |
| 15:17 | Cyclist | 5-4 | One Way | Recreational | Regular | 15 |
| 15:36 | 2 Cyclist | 7-1-4-5 | Loop | Recreational | Infrequently | 60 |
| 16:04 | $4$ <br> Pedestrian | 5-4-1 | One Way | Recreational | Regular | 35 |
| 17:20 | Cyclist | 4-5 | One Way | Commuting | Regular | 25 |
| 18:25 | 3 Pedestrians | 5-4-BBP | One <br> Way | Recreational | Infrequently | 35 |

BBP = Bolden Business Park
Refer to sketches for Route Numbers
and Loop Routes

Wednesday 13 September 2006 07:00 to 19:00

| Time | User <br> Type | Route | Route <br> Type | Reason | How <br> Often | Journey <br> Duration (mins) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 07:45 | Cyclist | BBP-4-5-Nissan | One Way | Commuting | Week Day | 20 |
| 07:51 | Cyclist | 4-7 | One Way | Commuting | Week Day | 10 |
| 08:08 | Cyclist | Bolden Colliery-1-7 | One Way | Commuting | Week Day | 8 |
| 08:35 | Pedestrian | BBP - 4-5-Downhill Lane | Loop | Recreational | Regular | 45 |
| 08:37 | Pedestrian | 4-5-2-4 | Loop | Recreational | Regular | 50 |
| 08:46 | Pedestrian | 4-1-7-4 | Loop | Recreational | Regular | 20 |
| 09:20 | Pedestrian | BBP-4-5-Downhill Lane | Loop | Recreational | Infrequently | 50 |
| 10:26 | $\begin{gathered} 2 \\ \text { Pedestrians } \\ \hline \end{gathered}$ | 7-1-4 | One Way | Recreational | Regular | 30 |
| 11:47 | 2 Cyclists | 5-4 | One Way | Recreational | Infrequently | 15 |
| 12:00 | Pedestrian | 4-5-Downhill Lane | Loop | Recreational | Regular | 120 |
| 12:53 | $2$ <br> Pedestrians | BBP-4-5-3-6-2-4 | Loop | Recreational | Infrequently | 90 |
| 13:55 | Cyclist | BBP-4-5-Nissan | One Way | Commuting | Week Day | 30 |
| 14:00 | Cyclist | Alang Cycle - 1 - Boldon Coliery | Loop | Recreational | Week Day | 30 |
| 14:36 | Pedestrian | 4-5 | Loop | Recreational | Infrequently | 60 |
| 15:02 | Pedestrian | 5-4 | One Way | Commuting | Week Day | 15 |
| 15:10 | $\begin{gathered} 2 \\ \text { Pedestrians } \\ \hline \end{gathered}$ | 5-4-Bolden Coliery | One Way | Commuting | Week Day | 20 |
| 15:12 | Cyclist | 5-4 | One Way | Commuting | Week Day | 15 |
| 15:14 | Cyclist | 5-4 | One Way | Commuting | Week Day | 20 |
| 15:24 | Pedestrian | 3-6-2-4 | Loop | Recreational | Regular | 60 |
| 16:31 | Cyclist | 7-1-4 | Return | Commuting | Week Day | 12 |
| 16:32 | Cyclist | 4-5-Nissan | One Way | Commuting | Week Day | 30 |
| 16:38 | Cyclist | 4-5-Nissan | One Way | Commuting | Week Day | 20 |
| 16:45 | $2$ <br> Pedestrian | 4-5-4 | Return | Recreational | Week Day | 40 |
| 17:07 | Cyclist | Boldon Coliery-1-7-6-5 | Return | Commuting | Week Day | 20 |
| 17:10 | Cyclist | 4-5-Nissan | One Way | Recreational | Infrequently | 35 |
| 17:29 | Cyclist | Sunderland - Newcastle - 1 4-5 | Return | Commuting | Infrequently | 60 |
| 17:30 | Cyclist | 4-5-3 | Loop | Recreational | Infrequently | 45 |
| 17:32 | Cyclist | 5-4 | One Way | Recreational | Infrequently | 25 |
| 17:49 | Cyclist | Nissan-5-4 | One Way | Commuting | Week Day | 25 |
| 18:12 | Equestrian | BBP - 4-5 | Return | Recreational | Regular | 30 |

BBP = Bolden Business Park
Refer to sketches for Route Numbers and Loop Routes

NMU Loop Route - 4 to 5 to $\mathbf{3}$ to 6 to 2




NMU Loop Route - 4 to 1 to $\mathbf{7}$ to $\mathbf{4}$



# JE JACOBS 

NMU Loop Route - 4 to 5 to 2 to 4






APPENDIX 13.2 NMU SURVEY RESULTS

Blank Page


## TraCsis <br> client: Preiect: Sile: Site <br> 020022016



\section*{Tracsis <br>  <br> | Site: |
| :--- |
| Date: |
| ozo202016 |}



## Tracsis <br>  <br> ${ }_{0}^{1020212016}$



\section*{TraCsis <br>  <br> | Site: |
| :--- |
| Date: |
| $\quad 1$ |
| 020202016 |}



\section*{Tracsis <br>  <br> | Site: |
| :--- |
| Date: |
| ozo202016 |}



\section*{TraCsis <br>  <br> | Site: |
| :--- |
| Date: |
| ozoor2016 |}



\section*{Tracsis <br>  <br> | Site: |
| :--- |
| Date: |
| ozo202016 |}







## Tractic and Data Services $\quad \begin{aligned} & \text { Client: } \\ & \text { Preject: } \\ & \text { Site: } \\ & \text { Date: }\end{aligned} \quad \begin{aligned} & \text { Jacobs } \\ & \text { 3084-TAD } / \text { A19 Testos \& Downhill Ln Survey } \\ & \text { 02/02/2016 }\end{aligned}$



\section*{Tracsis <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | 3084-TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 2 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis <br> | client: | Jacobs <br> Project: <br> 3ite |
| :--- | :--- |
| 3084-TAD / A19 Testos \& Downhill Ln Surveys |  |
| Date: | $02 / 0022016$ |}



\section*{Tracsis <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | 3084-TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 2 |
| Date: | $02 / 02 / 2016$ |}



## Tracsis <br> $\begin{array}{ll}\text { Client: } & \text { Jacobs } \\ \text { Project: } & { }^{3084-T A D ~ / ~ A 19 ~ T e s t o s ~ \& ~ D o w n h i l l ~ L n ~ S u r v e y s ~} \\ \text { Site: } & 2\end{array}$ <br> $\begin{array}{ll}\text { Site: } & 2 \\ \text { Date: } & \text { 02/02/2016 }\end{array}$



## Tracsis <br> $\begin{array}{ll}\text { Client: } & \text { Jacobs } \\ \text { Project: } & \text { 3084-TAD / A19 Testos \& Downhill Ln Surveys } \\ \text { Site: } & 2 \\ \text { Date: } & 02 / 02 / 2016\end{array}$


(

(

(


\section*{Tracsis. <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | $3084-$ TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 2 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis. <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | $3084-$ TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 3 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | $3084-$ TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 3 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | $3084-$ TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 3 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | $3084-$ TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 3 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | $3084-$ TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 3 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | $3084-$ TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 3 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis <br> |  |  |
| :--- | :--- |
| Client: | Jacobs |
| Project: | $3084-$ TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 3 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | $3084-$ TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 3 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | $3084-$ TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 3 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | $3084-$ TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 3 |
| Date: | $02 / 02 / 2016$ |}



## 



\section*{Tracsis. <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | 3084-TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 4 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis. <br> | Client: | Jacobs <br> Project: <br> 3084-TAD / A19 Testos \& Downhill Ln Surveys <br> Site: |
| :--- | :--- |
| Date: | $02 / 0022016$ |
|  |  |}



\section*{Tracsis. <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | 3084-TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 4 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis. <br> | Client: | Jacobs <br> Project: <br> 3ite |
| :--- | :--- |
| Site:-TAD / A19 Testos \& Downhill Ln Surveys |  |
| Date: | $42 / 02 / 2016$ |}



\section*{Tracsis. <br> | Client: | Jacobs |
| :--- | :--- |
| Project: | 3084-TAD / A19 Testos \& Downhill Ln Surveys |
| Site: | 4 |
| Date: | $02 / 02 / 2016$ |}



\section*{Tracsis. <br> | Client: | Jacobs <br> Project: <br> 3084-TAD / A19 Testos \& Downhill Ln Surveys <br> Site: |
| :--- | :--- |
| Date: | $02 / 0022016$ |
|  |  |}



\section*{Tracsis. <br> | Client: | Jacobs <br> Project: <br> 3084-TAD / A19 Testos \& Downhill Ln Surveys <br> Site: |
| :--- | :--- |
| Date: | $02 / 0022016$ |
|  |  |}



\section*{Tracsis. <br> | Client: | Jacobs <br> Project: <br> 3084-TAD / A19 Testos \& Downhill Ln Surveys <br> Site: |
| :--- | :--- |
| Date: | $02 / 0022016$ |
|  |  |}



\section*{Tracsis. <br> | Client: | Jacobs <br> Project: <br> 3ite |
| :--- | :--- |
| Site:-TAD / A19 Testos \& Downhill Ln Surveys |  |
| Date: | $42 / 02 / 2016$ |}



















## Appendix 13.2B NMU Survey Data - Summer 2016

## TraCsiS



## Tracsis $=$ =




## Tracsis $=$ wn



## Tracsis $=$ =



## Tracsis $=$



## Tracsis $=$ =



## Tracsis $=$ wn



## Tracsis $=$ =



## Tracsis $=$ =



## Tracsis $=$

destination summary


## Tracsis



## Tracsis $=$



## Tracsic $_{\text {de }}$




## TraCSis <br> Traffic and Data Services <br> $\begin{array}{ll}\text { Site: } & 2 \\ \text { Date: } & \quad 11 / 06 / 2016\end{array}$



|  |  | Client: <br> Project: <br> Site: <br> Date: |
| :--- | :--- | :--- |



|  |  | Client: <br> Project: <br> Site: <br> Date: |
| :--- | :--- | :--- |







```
Tracsis.
Client: Jacobs
Project: 3084-TAD / A19 Testos & Downhill Ln Surveys
Site: }
Date: 11/06/2016
```


## Entry : Arm A - Downhill Ln (West)





| $06: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $06: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $07: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $07: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $08: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $08: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $09: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $09: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $10: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $10: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $11: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $11: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $12: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $12: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $13: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $13: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $14: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $14: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |

9 Hrs

| 16 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 22 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |


| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| 9 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 |
| 12 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 15 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
|  |  |  |  |  |  |  |  |  |



| 20 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 31 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |



Entry : Arm A - Downhill Ln (West)


| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 5 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 | 8 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 5 | 6 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 8 | 10 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 Hrs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 10 | 15 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 21 | 31 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 32 | 35 | 0 | 0 | 0 | 3 | 7 | 0 | 0 | 52 | 84 |



Entry : Arm B - Downhill Ln (East)




| $06: 00$ | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| :--- | ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| $06: 30$ | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1 Hr | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| $07: 00$ | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| $07: 30$ | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 1 Hr | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 |
| $08: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $08: 30$ | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1 Hr | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| $09: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $09: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| $10: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $10: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| $11: 00$ | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 9 |
| $11: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 10 |
| $12: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $12: 30$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 Hr | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $13: 00$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $13: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $14: 00$ | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 |
| $14: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |


| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |



| 9 Hrs | 41 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 47 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\qquad$


| 3 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 9 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |



Entry: Arm B - Downhill Ln (East)




| $15: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $15: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $16: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $16: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $17: 00$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $17: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $18: 00$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $18: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $19: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $19: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $20: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $20: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $21: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $21: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $22: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $22: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $23: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $23: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |





Entry: Arm C - BW B46 Footpath




| $06: 00$ | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| :--- | ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| $06: 30$ | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 1 Hr | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| $07: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $07: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| $08: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $08: 30$ | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| $09: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $09: 30$ | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| $10: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $10: 30$ | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1 Hr | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| $11: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $11: 30$ | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 1 Hr | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| $12: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $12: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $13: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $13: 30$ | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1 Hr | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| $14: 00$ | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 |
| $14: 30$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |


| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |


| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



| 9 Hrs | 29 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 37 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\qquad$


| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |



Entry: Arm C - BW B46 Footpath







Totals


ORIGIN SUMMARY




| $06: 00$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| :--- | ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| $06: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $07: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $07: 30$ | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| 1 Hr | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| $08: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $08: 30$ | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 1 Hr | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 |
| $09: 00$ | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 |
| $09: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 |
| $10: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $10: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| $11: 00$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $11: 30$ | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 1 Hr | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| $12: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $12: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| $13: 00$ | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 7 |
| $13: 30$ | 12 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 13 |
| 1 Hr | 17 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 20 |
| $14: 00$ | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| $14: 30$ | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 |
| 1 Hr | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 10 |


| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| ---: | ---: | ---: | ---: | :--- | :--- | :--- | :--- | ---: |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 |
| 6 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 8 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 10 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 9 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 11 |
| 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 4 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 5 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 2 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 6 |


| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 |
| 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 4 |
| 2 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 7 |



| 9 Hrs | 45 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 53 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | | 46 | 0 | 0 | 0 | 7 | 3 | 0 | 0 | 56 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: | $\qquad$ $0 \quad 0$

150


ORIGIN SUMMARY




| $15: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| $15: 30$ | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| 1 Hr | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 |
| $16: 00$ | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 |
| $16: 30$ | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1 Hr | 6 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 8 |
| $17: 00$ | 3 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 6 |
| $17: 30$ | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1 Hr | 7 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 10 |
| $18: 00$ | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| $18: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| $19: 00$ | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| $19: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| $20: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $20: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $21: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $21: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $22: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $22: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $23: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $23: 30$ | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 1 Hr | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |


| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 4 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


| 2 |
| ---: |
| 5 |
| 7 |
| 8 |
| 4 |
| 12 |
| 8 |
| 4 |
| 12 |
| 6 |
| 2 |
| 8 |
| 2 |
| 4 |
| 6 |
| 0 |
| 1 |
| 1 |
| 0 |
| 0 |
| 0 |
| 1 |
| 0 |
| 1 |
| 0 |
| 1 |
| 1 |





DESTINATION SUMMARY




| $06: 00$ | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| :--- | ---: | :--- | :--- | :--- | :--- | :--- | :--- | ---: | ---: |
| $06: 30$ | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 1 Hr | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| $07: 00$ | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| $07: 30$ | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| 1 Hr | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 10 |
| $08: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $08: 30$ | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 |
| 1 Hr | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 7 |
| $09: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $09: 30$ | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| 1 Hr | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 |
| $10: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $10: 30$ | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 1 Hr | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| $11: 00$ | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 11 |
| $11: 30$ | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 1 Hr | 11 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 13 |
| $12: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $12: 30$ | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1 Hr | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| $13: 00$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $13: 30$ | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 1 Hr | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| $14: 00$ | 1 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 6 |
| $14: 30$ | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1 Hr | 4 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 9 |


| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 4 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 4 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 6 |


| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 3 |
| 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| 9 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 |
| 12 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 15 |
| 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 6 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 5 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 8 |




DESTINATION SUMMARY




| $15: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| $15: 30$ | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| $16: 00$ | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| $16: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 |
| $17: 00$ | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $17: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| $18: 00$ | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| $18: 30$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| $19: 00$ | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| $19: 30$ | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1 Hr | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| $20: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $20: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $21: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $21: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $22: 00$ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $22: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $23: 00$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $23: 30$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 |
| 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 5 | 8 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 6 | 12 |
| 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 5 | 8 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 |
| 5 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 8 | 12 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |














## Tracsis $=$ <br> de

Entry: AmA-Mar-made FP (Southo or AW B46)







## Tracsis $=$ <br> $1 \mathrm{Tratil}_{\text {and }} \mathrm{D}$ Ita





\section*{ <br> | 3884 |
| :--- |}


前


## Tracsis $==$ <br> $1 \mathrm{Trafic}_{\text {a and Data Sevices }}$



##  <br> 





## Tracsis $=$ <br> - Trafic and Data Senices





\section*{Tracsis $==$ <br> | 3884 |
| :--- |}






## Tracsis $=$ <br> 





\section*{TraCSiS <br> | 3084TAD/A |
| :--- |
|  |
| 11062016 |}





TraCSiS $_{\text {ticm }}$
Traficic and Data Services




## Tracsis $==$ <br> 






Tracsis.




##  <br> $1 \mathrm{CrS}_{\text {Tafic and Data Senices }}$





## Tracsis <br> Traftic and Data Services





## Tracsis $=$ =an

Estination summary




APPENDIX 13.3 JOURNEY TIME CALCULATIONS

| $\begin{aligned} & \text { Joumey } \\ & \text { Number } \end{aligned}$ | Joumey Descripition | Baseline JourneyDistance (m) |  | $\begin{array}{\|c\|} \hline \left.\begin{array}{c} 2021 \text { Do } \\ \text { Soumething } \\ \text { Joumey } \\ \text { (m) } \end{array} \right\rvert\, \end{array}$ | $\underset{\substack{\text { Minium } \\ \text { Joumey listance } \\ \text { (m) }}}{\substack{206 \mathrm{D} \\ \hline}}$ | 2036 Do SomethingJourney Distance(m) | 2012 Baseline |  | 2021 Do M Minum |  | 2021 Do Something |  | $\begin{gathered} \text { Journey Time (mmiss) } \\ \hline \text { Change in } 2021 \text { Journey } \\ \text { Times (\%) } \end{gathered}$ |  | 2036 Do M Minum |  | 2036 Do Something |  | Change in 2036 JourneyTimes (\%) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | $\overline{\mathrm{MPe}}$ | PM Peak | am Peak | pm Peak | AM Peak Pr | Pw Peak | AM Peak | PM Peak | am Peak ${ }^{\text {pa }}$ | pm Peak | m Peak | [PM | AM Peak | PM Peak |
| 1 |  | ${ }^{3431}$ | 3430 | 3430 | 3430 | 3430 | 03:47 | ${ }^{03.46}$ | ${ }^{035} 5$ | 03.53 | 3:51 | 03.51 | 0\% | -1\% | 4007 | 04:08 | 0401 | 04:04 | -2\% |  |
| 2 | On the A19 southbound starting from the noth of Testos Junction and ending where the A19 Downhill Lane Junction Sothbund On-Slip meets the A19 mainine carriageway | 3148 | 3087 | 3087 | 3087 | 3087 | 03:05 | 03:37 | 02:45 | 02:50 | 1:43 | 02:48 | -1\% | -1\% | 0:05 | 03:08 | 03:01 | 03:03 | 2\% |  |
| 3 | On the A19 northbound, starting at the A19/ A1231 Wessington Way Junction Northbound On-Sip and ending at the A1290/ Nissan Manufacturing Plant Traffic Signal Junction | 3521 | 3521 | ${ }^{3362}$ | 551 | 3362 | 03:13 | 03:30 | $03: 53$ | 48 | 9:14 | 03:27 | 7\% | 9\% | 04:25 | 04:11 | 04:02 | 03:46 | -9\% |  |
| 4 | On the A1290 eastbound, starting at the A1290/ Nissan Manufacturing Plant Traffic Signal J unction and ending where the A19 Downhill Lane Junction Southbound On-Slip meets the A19 mainline carriageway. | 1527 | ${ }^{1527}$ | 1514 | 1527 | 1514 | 01:28 | 01:28 | 02:08 | 02:26 | 03:03 | 03.08 | 43\% | 29\% | 02:26 | 02:77 | 03:33 | 03:01 | 46\% |  |
| 5 | On Washington Road westbound, stating at the Washington Rooal/ Ferryboat Lane unntion and ending at the Dow hhill Lane (West)/ Follingsbyy Lane unntion | 2004 | 2004 | 7872 |  |  | 02:08 | 02:32 | 02:47 | 03:01 | 11:00 | $11: 53$ | 25\% | 294\% |  |  |  |  |  |  |
| 6 | On A1290 eastbound, Statring from the A1290/ Wastington Road Link Road Junction and ending at Dowwhill Lane (East) | 530 | 530 | 404 | 530 | 404 | 00.35 | 00:38 | 00:38 | 00:36 | 01:17 | 01:07 | 103\% | 86\% | 00:42 | 00:49 | 0118 | 01:09 | 86\% |  |
| 7 | On the A19 southbound, starting from the north of Testos Junction and ending at the A1290/ Nissan M M anufacturing Plant | 4153 | 4097 | 417 | 4097 | 417 | 04:34 | 05:10 | 04:46 | 16 | 04:40 | 04:33 | - $2 \%$ | -4\% | 05:13 | 05:23 | 05:33 | 52 | 6\% |  |
| 8 | Stating from Dowhhil Lane (East) and ending at the Dowhhill Lane (West) Follingsyy Lane Junction | 1353 | 1333 | 7020 |  |  | 01.52 | 02:25 | 02:20 | 02:09 | 10:30 | 11:06 | 30\% | 416\% |  |  |  |  |  |  |
| 9 | On A1290 eastbound, starting at the A1290/ Nissan M anufacturing Plant Traffic Signal Junction and ending at Downhill Lane (East). | 1363 | 1363 | 1237 | 1363 | ${ }^{1237}$ | 01:17 | 001:17 | 02:05 | ${ }^{02: 46}$ | ${ }^{02: 37}$ | 02:49 | 26\% | 2\% | ${ }^{02: 27}$ | ${ }^{3308}$ | 03:07 | 12:42 | 27\% |  |
| 10 | On Wastington Road Westbund, statring at the Washington Road/ Ferryboat Lane Junction and ending at the Follingsby Lane Wardeley D.P. stite access to the east of Follingsby Park | 4071 | 4071 | 7921 | 848 | 7921 | 03:37 | 04:24 | $03: 11$ | 03.11 | 09:23 | 09.24 | 195\% | 195\% | 10:05 | 10:36 | 09:53 | $10: 30$ | - $-2 \%$ |  |
| 11 | Starting from Downhill Lane (East) and ending at theFollingsby Lane/ Wardeley D.P. site access to the east of Follingsby Park | 3420 | 3420 | 7069 | 197 | 7069 | 02:40 | 02:49 | 01:21 | 01:25 | 08.54 | 08:39 | 559\% | 511\% | 08:25 | ${ }^{\text {08:13 }}$ | 09:23 | 09:26 | 11\% |  |
| 12 | Starting from the Downhill Lane (West)/ Follingsby Lane Junction and ending at the A1290/ Nissan M anufacturing Plant Traffic Signal Junction | ${ }^{1457}$ | ${ }^{1457}$ | 2304 |  |  | ${ }^{01: 48}$ | 02:02 | $03: 21$ | 02:19 | 05:33 | 04.28 | 66\% | 93\% |  |  |  |  |  |  |



APPENDIX 13.4 DRIVER STRESS CALCULATIONS

| JoumeyNumber | Joumey Description | Baseline Journey Distance (m) | 2021 Do Minimum Journey Distance (m) | 2021 Do Something Journey Distance (m) | 2036 Do Minimum ourney Distance (m) | 2036 Do Something JourneyDistance (m) | 2012 Basceline |  | 2021 Do Minimum |  | 2021 Do Something |  | 2036 Do M Minimum |  | 2036 Do Something |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | M | M Peak | AM Peak | PM Peak | am Peak | PM Peak | AM Peak | PM Peak | AM Peak | PM Peak |
| 1 | On the A19 northbound, starting at the A19/ A1231 Wessington Way Junction Northbound On-Sip and ending at the A19 Testos Junction northbound approach | 3431 | 3430 | 3430 | 3430 | $3^{343}$ | Low | Low | derate | derate | derate | erate | derate | Moderate | erate | er |
| 2 | On the A19 southbound, starting from the north of Testos Junction and ending where the A19 Downhill Lane Junction Southbound On-Slip meets the A19 mainline carriageway | 3148 | 3087 | 3087 | 3087 | 3087 | derate | High | Moderate | Moderate | Modera | Moderate | Moderate | High | Moderate | oderate |
| 3 | On the A19 northbound, starting at the A19/ A1231 Wessington Way Junction Northbound On-Slip and ending at the A1290/ Nissan M anufacturing Plant Traffic Signal Junction | 3521 | 3521 | 3362 | 3521 | 3362 | te | erate | te | ate | Moderate | erate | Moderate | erate | oderate | oderate |
| 4 | On the A1290 eastbound, starting at the A1290/ Nissan M anufacturing Plant Traffic Signal Junction and ending where the A19 Downhill Lane Junction Southbound On-Slip meets the A19 mainline carriageway. | 1527 | 1527 | 1514 | 1527 | 1514 | erate | Moderate | erate | ate | High | High | High | High | High | High |
| 5 | On Washington Road westbound, starting at the Washington Road/ Ferryboat Lane Junction and ending at the Downhill Lane (West)/ Follingsby Lane Junction | 2004 | 2004 | 7872 |  |  | Low | Moderate | Moderate | Moderate | Moderate | Moderate |  |  |  |  |
| 6 | On A1290 eastbound, Starting from the A1290/ Washington Road Link Road Junction and ending at Dowwhiil Lane (East) | 530 | 530 | 404 | 530 | 404 | Moderate | derate | Moderate | erate | High | High | High | High | High | High |
| 7 | On the A19 southbound, starting from the north of Testos Junction and ending at the A1290/ Nissan M anufacturing Plant Traffic Signal Junction | 4153 | 4097 | 417 | 4097 | 4117 | Moderate | High | Moderate | Moderate | Moderate | Moderate | High | High | High | Moderate |
| 8 | Stating from Downhill lane (East) and ending at the Downhill Lane (West)/ Follingsby Lane Junction | 1353 | 1353 | 7020 |  |  | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate |  |  |  |  |
| 9 | On A1290 eastbound, starting at the A1290/ Nissan M anufacturing Plant Traffic Signal Junction and ending at Downhill Lane (East). | 1363 | 1363 | 1237 | ${ }^{1363}$ | 1237 | Moderate | erate | High | High | High | High | High | High | High | High |
| 10 | On Washington Road westbound, starting at the Washington Road/ Ferryboat Lane Junction and ending at the Follingsby Lane/ Wardeley D.P. site access to the east of Follingsby Park | 4071 | 4071 | 7921 | 7848 | $\begin{array}{r}7921 \\ \hline 1809\end{array}$ | Low | Low | Low | Low | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate |
| 11 | Starting from Downhill Lane (East) and ending at the Follingsby Lane/ Wardeley D.P. site access to the east of Follingsby Park | 3420 | 3420 | 7069 | 7197 | 7069 | Low | Low | Low | Low | Moderate | erate | Moderate | Moderate | Moderate | Moderat |
| 12 | Starting from the Downhill Lane (West)/ Follingsby Lane Junction and ending at the A1290/ Nissan M anufacturing Plant Traffic Signal Junction | ${ }^{1457}$ | ${ }^{1457}$ | 2304 |  |  | High | Moderate | Moderate | Moderate | Moderat | Moderate |  |  |  |  |


|  |  |  |  | Number of Lanes －Baseline | $\begin{gathered} \text { Number of Lanes } \\ -2021 \text { Do } \\ \text { Minimum } \end{gathered}$ | $\begin{gathered} \text { Number of Lanes } \\ \text { - } 2021 \text { Do } \\ \text { Something } \end{gathered}$ | $\begin{gathered} \text { Number of Lanes } \\ \text { - } 2036 \text { Do } \\ \text { Minimum } \end{gathered}$ |  |  | Scheme Traffic <br> Baselin <br> Basell |  | Scheme Traffic kph） <br> （kph） |  | $\begin{aligned} & \text { scheme Traffic } \\ & \text { kph) } \\ & \text { Something } \end{aligned}$ | $\begin{aligned} & \text { Speed of ofsh } \\ & \text { Sos. } \\ & \text { boi } \end{aligned}$ | cheme Traffic <br> Minimum |  | Scheme Traffic （kph） <br> kph） <br> Somethin |  |  | ${ }^{202100}$ | Mninum | 2021 | Smeting |  | Minimum | ${ }^{20360}$ | Something |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Wumber | Saction oxsidition | Diraction | gural |  |  |  |  |  | an Paek |  |  |  |  |  |  |  |  |  | An pax | 号 | an Peak |  | Meak | am Paxa |  |  | AM Peak |  |
|  |  | Ceme | $\substack{\text { Rural } \\ \text { Rual } \\ \text { Rual }}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Hion | $\xrightarrow{\text { High }}$ Low | Herioh |  | Moderate |  | High |  | Hoteratel |  |
| 2 | A184 New castle Road from A19 Testos Junction to speed limit change on A184 Boldon Bridge |  | ${ }_{\text {Rural }}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ${ }_{\text {Hion }}^{\text {Hiof }}$ |  | ${ }_{\text {High }}^{\text {Hion }}$ |  | ${ }_{\text {Higo }}^{\text {Higo }}$ | $\xrightarrow{\text { High }}$ High | $\xrightarrow{\text { High }}$ | Hiol | $\underbrace{\text { Hiof }}_{\text {Hion }}$ |  |
| 3 | （e） |  | Untion |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\frac{\text { Modereat }}{\text { Moderate }}$ |  | $\frac{\text { Modeate }}{\text { Moderete }}$ | $\underset{\text { Hoteret }}{\substack{\text { High } \\ \text { Mosed }}}$ | $\frac{\text { Modetel }}{\text { Moderete }}$ | ¢ | $\frac{\text { Moterete }}{\substack{\text { Moderate }}}$ | $\substack{\text { Higab } \\ \text { High }}$ | $\xrightarrow{\text { Moderate }}$ Moderie |  |
|  |  | Northound | Uriman |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate |  | Moderate | Moderate |
| 5 |  | （in | Uuban |  |  |  |  |  |  |  |  |  |  |  | ${ }^{26}$ |  | ${ }_{24}{ }_{24}$ | ${ }^{24}$ | Moderate | Moderate | Modeate | Moderate | Moderate | Moderate | Modeate | Moderate | Moderate | Moderaw |
| 6 | Hyltor Lane／K Knsway boad unction toyytor lane／Wastington Road unction | Northbound | Uram |  |  |  |  |  |  | － |  |  | － | ， |  |  |  |  | mode | Mode |  | Moderate |  |  | Moterate |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Moderate |  |  |  | Moderate | Moderate |
| 7 | Road untion | Soutbound | Union |  |  |  |  |  | 4 | 40 |  | 40 | 40 | ， | 40 | 40 | ${ }_{40}$ | ${ }^{40}$ | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | $\frac{\text { Moderate }}{\text { Moserate }}$ |
| ${ }^{8}$ |  | Notertound | $\underset{\substack{\text { Ruar } \\ \text { Ruall }}}{\text { and }}$ |  |  |  |  |  | ${ }_{3}^{5}$ | ${ }^{63}$ |  |  |  | 星 |  | ${ }_{6} 9$ |  |  | Moderate | Moderate | $\underset{\substack{\text { Modeasate } \\ \text { High }}}{ }$ | Moderate | Modeate | Moderate | Modeate | Modearate | Moderate | Modeatie |
| 9 | （12331／1919 Wessi | Eestbound | $\substack{\text { Ruar } \\ \text { Rual }}$ |  |  |  |  |  | 5 | 13 <br> 19 <br> 19 |  |  | 13 4 48 4 | 星 |  | ${ }_{4}^{44}$ |  | 40， 4 4 4 | High | Hot | High | $\xrightarrow{\text { High }} \mathrm{H}$ |  | Htgh | $\xrightarrow[\substack{\text { Higo } \\ \text { Hiob }}]{ }$ | $\xrightarrow{\text { High }}$ Higo | High |  |
| 10 |  | Esestound |  |  |  |  |  |  | 5 | －63 |  |  | ${ }^{6}$ |  | ${ }^{0}$ |  |  | ${ }^{10}{ }^{6}$ | Hilob |  | Hop | $\xrightarrow{\text { Hogon }}$ | $\xrightarrow[\substack{\text { Higot } \\ \text { High }}]{ }$ | Hign | $\xrightarrow{\text { High }}$ Hob |  | Hill |  |
| 11 |  | Notrobond | Rural |  |  |  |  |  |  | ${ }_{6}^{6} \quad{ }^{76}$ |  |  | ${ }_{6}^{6}$ | 6 |  | ${ }^{76}$ | ${ }_{76}$ | ${ }^{6}$ | ${ }_{\text {Low }}^{\text {Low }}$ | Low | ${ }_{\text {Low }}^{\text {Low }}$ | Low | ${ }_{\text {Low }}^{\text {Low }}$ | ${ }_{\text {Lown }}^{\text {Low }}$ | Lew | Low | Lom |  |
| 12 |  | Soursound | $\underset{\substack{\text { Ruar } \\ \text { Rual }}}{\text { and }}$ |  |  |  |  |  |  | ${ }_{51}^{56}$ |  |  |  |  |  |  | ${ }^{50}$ | 50 ${ }^{3}$ | Moterate | $\frac{\text { Moderae }}{\text { Moderate }}$ | Moderate |  | Moderate | Moderate | Moderate |  | Moderate | Modereate |
|  |  | Soutbound |  |  |  |  |  |  |  | ${ }_{37}^{46}$ |  |  |  |  |  |  |  |  | Higa | Moderate | Hoten |  |  |  | Modeate | Modeate | Moderate |  |
| 13 |  | Ceme | Utiban |  |  |  |  |  |  | ${ }_{47}$ |  | ${ }_{42}$ | ， |  | 1 |  |  |  | Moderate |  | Moderate |  | Moderate |  |  |  |  |  |
| 14 | Wastingot Road IAMP Development Link Road unction to wastingon Roadl | ${ }_{\text {Northbound }}^{\substack{\text { Noutheund }}}$ | ${ }_{\text {Ruar }}^{\text {Rua }}$ |  |  |  |  |  |  |  |  |  |  |  | ${ }_{6}^{6}$ |  |  |  |  |  | Moderate |  | Modem |  | Moderete |  |  | Moderate |
| 15 |  | Noterbound | $\underset{\substack{\text { Rural } \\ \text { Ruad }}}{\text { and }}$ |  |  |  |  |  |  |  |  |  |  |  |  |  | ${ }_{57}^{47}$ | 42 ${ }_{6}^{46}$ |  | Moderate | Modeate | Moderate | $\frac{\text { Moderate }}{\text { Moderate }}$ | Moderate | Moderate | Moderate | Moderate |  |
| 16 | Wastington Rooad Dowhhill lane（east）junction to speed limit change South of | Nortbound | $\underset{\substack{\text { Urana } \\ \text { Rual }}}{\text { and }}$ |  |  |  |  |  |  | ${ }^{\frac{4}{29}}$ |  |  |  |  |  |  |  | ${ }^{5}$ |  | High | ${ }_{\text {High }}^{\text {High }}$ | $\underset{\substack{\text { High } \\ \text { Hag }}}{\text { a }}$ | ${ }_{\text {Hog }}^{\text {Hon }}$ | $\xrightarrow{\text { High }}$ High | $\xrightarrow[\substack{\text { Higo } \\ \text { Hiloh }}]{\text { a }}$ | $\substack{\text { High } \\ \text { Higot }}$ | High |  |
| 17 | Speed limit change South of Downhill Lane／Lawn Drive Junction to Downhill Lane／A184 Boldon Bridge Junction |  | $\underset{\substack{\text { Rural } \\ \text { Rura }}}{\text { Rem }}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ${ }_{\text {Hion }}^{\text {Hof }}$ | High | ${ }_{\text {Hog }}^{\text {Hot }}$ | Higo | Hor | High | Hiob | High | Himb | 为 |
| 18 | A19／A1233 Wessingon Way Uuntion to A19 Downhill lane Juncion |  | $\xrightarrow[\substack{\text { Rual } \\ \text { Rural }}]{\text { R }}$ |  |  |  |  |  |  | 88 <br> 58 <br> 5 |  |  | － 17 | ， | ${ }_{68}^{68}$ | ${ }^{63}$ | ${ }^{5}$ | $1{ }^{6}$ | $\xrightarrow{\text { Litow }}$ | $\xrightarrow{\text { Lum }}$ | Modereate | Moderite | Moderete | Moderate | Moderate |  | Modereate |  |
| 19 | A19 Oownhill lan e unction to 019 Testos Sunction | Southound | ${ }_{\text {Ruaral }}^{\text {Ruar }}$ |  |  |  |  |  |  | ${ }^{5}$ |  |  |  | － 4 | ${ }_{52}$ |  |  | ${ }^{38}$ | Noterem | Hiligh | ${ }_{\text {High }}$ | ${ }_{\text {Higho }}^{\text {High }}$ |  |  | High | High |  |  |
| 20 |  | Sutheond |  |  |  |  |  |  |  | 星 |  |  |  |  |  |  | ${ }_{58}^{58}$ | \％ | Moderate | High |  |  |  |  |  |  |  |  |
|  | A19 estos sunctorito aig ceam tane uncion | South |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Hign |  |  |  | High |  |  |  |
| 21 | A19 Oownhill lane unction | Westound |  |  |  |  |  |  |  |  |  |  |  |  |  | 8 |  | －30 | Moderate | Moderate | High | High | Hop | Hob | Hion | Hib | Hab |  |
| 22 |  | Noterteond | ${ }_{\text {Ruar }}^{\text {Rual }}$ |  |  |  |  |  |  | ${ }_{5}^{52}$ |  |  |  |  | ${ }^{41}$ |  |  |  | Moderese |  | Modeate | Moderiele | $\xrightarrow{\text { Higho }}$ | High | $\xrightarrow{\text { High }}$ High | High | High |  |
| 23 | A1290 Downhill Lane／Nissan Sunderland Plant Access to A1290／IAMP |  | $\substack{\text { Rural } \\ \text { Ruad }}$ |  |  |  |  |  |  | －59 <br> 33 |  |  |  |  |  |  |  |  | Moderate | Moderate | Moderate | Moderied | Moderate | Modereat | High | High | ${ }_{\text {H0 }}^{\text {Hio }}$ |  |
| 24 |  | Noterembers | $\underset{\substack{\text { Ruaral } \\ \text { Ruad }}}{\text { and }}$ |  |  |  |  |  |  | 60 <br> 58 <br> 5 |  |  |  | 迷 |  |  |  |  | Moderete | Moderate | ${ }_{\text {High }}$ | ${ }_{\text {High }}^{\text {Han }}$ | ${ }_{\text {Hom }}^{\text {Hon }}$ | $\xrightarrow{\text { Higha }}$ Hibl | $\xrightarrow{\text { Hion }}$ | High | Hag | Hon |
| 25 |  |  | $\xrightarrow[\substack{\text { Unam } \\ \text { Rural }}]{\text { and }}$ |  |  |  |  |  |  | 54 <br> 48 |  | ${ }_{4}^{4}$ | \％ | ${ }_{4}^{49}$ | －${ }_{50}$ | ${ }_{4}^{48}$ | ${ }_{4}^{41}$ | －${ }^{11}$ | （8）Moderate | Moderete |  | Modeate | Modetel | Modere | Hion |  |  |  |
| 26 | AMMP Development（Wastingon Exidge Link Road） | Cessbound | Uran |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Moderate |  |
| 27 |  | Eastound | Ruaral |  |  |  |  |  |  | ${ }^{8}$ |  |  | 11.6 |  |  |  |  |  | Moderate | Low | Moderate | Low |  | Low |  |  | Wodeate | Moderate |
|  | Aram oowhhil lane unction | Westound | Ruar |  |  |  |  |  |  | ${ }_{\text {¢88888 }}^{88}$ |  |  |  |  |  |  |  |  |  | Low |  |  |  |  |  |  |  |  |
|  | Wardele 0 P．Stste acess road | Westbound | Rural |  |  |  |  |  |  | ${ }^{88}$ |  |  |  |  |  |  |  |  | Low | Low | Lew | Low | ${ }_{\text {Lew }}$ | Low |  |  |  |  |
| 29 |  |  | $\underset{\substack{\text { Ruaral } \\ \text { Rural }}}{\text { a }}$ |  |  |  |  |  | 4 | 48 48 48 48 |  |  | ${ }^{48}$ | ， |  |  | ${ }_{48}^{48}$ |  | ${ }_{\text {High }}^{\text {Hig }}$ | ${ }_{\text {Higho }}^{\text {Hig }}$ | ${ }_{\text {High }}$ | ${ }_{\text {Highon }}^{\text {Higho }}$ | ${ }_{\text {Highon }}^{\text {Hig }}$ | Hign | High | High | ${ }_{\text {Hig }}$ |  |
| ${ }^{30}$ | From follingsty Parkto A1994（M）unction 2 |  | $\underset{\substack{\text { Ruaral } \\ \text { Ruad }}}{\text { and }}$ |  |  |  |  |  | ${ }_{5}^{8}$ | （ ${ }^{88}$ |  | （188 |  | －${ }^{8}$ | ${ }_{53}$ | ${ }_{\text {－}}^{51}$ | $\begin{array}{r}68 \\ 53 \\ \hline\end{array}$ | 建 | Lict Low | ${ }_{\text {Low }}^{\text {Low }}$ | High | $\xrightarrow{\text { Liow }}$ | ${ }_{\text {Liow }}^{\text {Ligh }}$ | ${ }_{\text {L }}^{\text {Low }}$ | ${ }_{\text {Lew }}^{\text {High }}$ | ${ }_{\text {Lew }}^{\text {Ligh }}$ | ${ }_{\text {L }}^{\text {Lom }}$ |  |
| ${ }^{31}$ | Fiom A194（M）Juntion 2 2to A1944（M／／A184／Leam Lanej inction | Notertbound | $\underset{\substack{\text { Rual } \\ \text { Rual }}}{\text { and }}$ |  |  |  |  |  | ${ }_{9}^{5}$ | 年 ${ }^{83}$ |  | 99， | ${ }^{80}$ | ${ }^{80}$ | ${ }_{\text {¢ }}^{54}$ | ， | ${ }_{84}$ | 44 | ${ }^{\text {c／}}$（4）Modent | $\frac{\text { Moderate }}{\text { Moderate }}$ | Modiand | $\frac{\text { Moderate }}{\text { Moderate }}$ | $\xrightarrow{\text { Hoderale }}$ | Moderate | Moderat | $\xrightarrow{\text { High }}$ High | Moderate | $\xrightarrow{\text { Higo }}$ Higo |


[^0]:    ${ }^{1}$ Highways England (unknown) WebTRIS [online]. Available from: http://webtris.highwaysengland.co.uk/ (Accessed on 23 February 2017)

[^1]:    ${ }^{2}$ Gateshead Council (unknown) Interactive Casualty Map [online]. Available from: http://www.gateshead.gov.uk/ne-roadsafety/Map.aspx (Accessed on 23 February 2017)

[^2]:    ${ }^{3}$ South Tyneside Council (unknown) Station Burn and Colliery Wood [online]. Available from: https://www.southtyneside.gov.uk/article/36209/Walks-and-wildlife-sites [Accessed on $2^{\text {nd }}$ March 2017]

[^3]:    ${ }^{4}$ International Advanced Manufacturing Park (unknown) The Location [online]. Available from: http://www.iampnortheast.com/project-information/area-action-plan-consultation/ [Accessed on 01/03/2017]
    ${ }^{5}$ International Advanced Manufacturing Park (unknown) Environmental Master Plan [online]. Available from: http://www.iampnortheast.com/assets/Uploads/998-URB-Z0-DR-U-Masterplan-Illustrative-002-revI.jpg [Accessed on 01/03/2017]

[^4]:    ${ }^{6}$ South Tyneside Council (2012) South Tyneside Site Specific Allocations Development Plan Document [online]. Available from: https://www.southtyneside.gov.uk/article/36015/Local-Development-Framework [Accessed on $2^{\text {nd }}$ March 2017].

[^5]:    ${ }^{7}$ Sunderland City Council (2007) Unitary Development Plan Alternation No. 2 Proposals [online]. Available from: http://www.sunderland.gov.uk/index.aspx?articleid=1785 [Accessed on $2^{\text {nd }}$ March 2017]
    ${ }^{8}$ South Tyneside Council (2007) Local Development Framework: Core Strategy [online]. Available at: https://www.southtyneside.gov.uk/article/36015/Local-Development-Framework [Accessed 3 $3^{\text {rd }}$ January 2017]

[^6]:    ${ }^{9}$ Tyne and Wear Integrated Transport Authority (2011) Keep Tyne and Wear Moving: LTP3: The Third Local Transport Plan for Tyne and Wear Strategy 2011-2021 [online]. Available from: http://www.tyneandwearltp.gov.uk/wp-content/uploads/2011/03/LTP-rev7-FINAL3.pdf [Accessed on $2^{\text {nd }}$ March 2017].

[^7]:    ${ }^{10}$ Tyne and Wear Integrated Transport Authority (2011) LTP3 Documents [online]. Available from: http://www.tyneandwearltp.gov.uk/documents/tp3/ [Accessed 2 ${ }^{\text {nd }}$ March 2017]

