

APPENDIX A

SCOPING CORRESPONDENCE

David Stoddart

From: Drury, Holly <holly.drury@hants.gov.uk>
Sent: 19 June 2019 16:19
To: David Stoddart
Cc: Hirst, Chris; Morton, Stuart
Subject: St Mary's Road Pre-Application Advice

Dear David

Thank you for the pre-app consultation of the proposed application for St Mary's Road (Rook Farm) in Hayling Island. I understand the application will be for 390 dwellings as per the emerging Local Plan.

Emerging Local Plan Policy

The emerging local plan policy clearly states the following regarding the development and transport matters:

- *Secures access to the site from the A3023 (Manor Road) with only an emergency access (including pedestrian and cycle permeability) from St Mary's Road*

This emerging policy is key when considering your access arrangements to the site and further evidence is required to support any alternative access arrangement and why the local plan policy requirement cannot be met.

HBC Paramics Model

The base model and forecast model used by Havant for the purpose of the Local Plan has been agreed. The outputs from the model however and the conclusions within the pre-submission TA have raised concerns with the Highway Authority and HBC are currently undergoing further work to address these.

Therefore whilst there may be benefit in utilising the model to obtain current and forecast flow data and to understand the cumulative impact of proposed local plan development it is unclear how the model is proposed to be further utilised for the purpose of this TA. Clarity is sought on this.

What is currently absent from the Local Plan work is individual junction modelling of specific mitigation measures and the principle of these measures being agreed and run through the Paramics model to identify journey time benefits along the route as a result of mitigation back to the agreed 2017 base. It is this work that HBC are currently undertaking. You would need to discuss with them any timescale for the results of this additional TA work being available.

The base year of 2017 is considered to represent a without development scenario of 2036 as without the local plan allocation background traffic growth on the island is assumed to be marginal.

One key matter to be aware of is that the access arrangement assumed within the Paramics model for this site is as set out within the Local Plan to be via Manor Road with the emergency access only onto St Mary's Road.

Site Access Speed Surveys

These surveys are dated having been carried out in November 2016 and will need to be updated to support any new application.

Additional Survey Requirements

The Paramics model has a 2017 base and it would be considered appropriate to utilise the same base year assessment as the local plan work to allow comparisons to be made to an agreed base situation.

Committed Developments

There would be an expectation for the assessment work especially if proposing to utilise the HBC Paramics modelling work for an assessment which include all emerging local plan allocations on Hayling. This is to ensure any mitigation identified is suitable to accommodate the cumulative harm of the proposed level of development.

There are current applications in place for Sinah Lane and the Manor Road allocations within the emerging local plan which should be considered committed given the unknown timescales of your application.

The general view is that all local plan traffic generation should be assessed as the proposed forecast year for assessment is 2036 to accord with the Local Plan period.

In addition it should be noted that the base 2017 data would not include the Lidl development which has been built out. If for any reason the future year assessment data is not obtained from Paramics then this scheme flows would need to be manually applied to a forecast year.

Committed Highway Improvement Schemes

I am not aware to date of any committed schemes within our capital programme. The applicant should make note of any emerging mitigation identified by other applications such as Sinah Lane.

Assessment Criteria

The weekday AM and PM peak is suitable for the majority of the network. At the Manor Road junction traffic distribution is different during the school peak collection time which may need to be considered at the localised modelling level. There is survey information and modelling of this within the Lidl application.

For individual junction assessment there may be a requirement be analysis undertaken for the forecast 2028 opening year. This would need to be discussed further as we understand better how you propose to assess the application site within the TA.

Trip Rates

Agreed and that 100% new trips

Accident Data Analysis

The study area is agreed as per application APP/17/00007

Capacity Assessment

As noted above individual junction modelling of any mitigation will be required to support any paramics runs of a mitigation strategy for the site.

Site access modelling will also be required.

Site Mitigation

There are no committed schemes or works package for mitigating the impact of the emerging local plan. It will be for the applicant to identify appropriate mitigation and for agreement to be reached with the highway authority regarding suitable delivery mechanisms. It is difficult to comment on this further in the absence of the evidence base. The local plan evidence however clearly demonstrates with no mitigation a cumulative impact of the proposed local plan development on

the A3023 corridor which would meet the required tests to require mitigation measures funded/delivered from the proposed developments.

Site Access

It is noted that access is proposed primarily from St Mary's Road. As outlined this is not in accordance with the emerging local plan. The Highway Authority also had a number of design issues with the proposed access arrangement as part of application APP/17/0007. Before I ask our engineering team to comment on the layout it would be beneficial for you to confirm if amendments as per our prior discussions have been made.

I am concerned regarding the increase in housing numbers and therefore the suitability of the proposed access given the nature of St Mary's Road and the proximity to the school. It would be beneficial to see modelling results and confirmation of accordance with DMRB criteria to ensure the junction form is appropriate for the level of movements anticipated before more detailed design comments are provided. The information for me to assess this is absent from the pre-app information sent through.

Reference is made to the land being unavailable for access onto Manor Road but it is noted that there is an allocation HA28 which adjoins this land which would appear to demonstrate availability of land to provide an alternative arrangement for the site. This matter should be discussed further through the Pre-app process with both HCC and the planning authority.

Car Parking

Car parking numbers are a matter for HBC as parking authority and they have their own documentation on this matter. HCC will require confirmation of conformity with the required parking standards however at the Outline stage to ensure that there are no implications to highway operation or safety as a result of over spill parking.

Planning Policy Requirements

Agreed

Any other special circumstances

HCC currently have a raised concerns to the proposed housing allocation on Hayling Island, with one of the primary concerns being the inability of the A3023 to accommodate additional vehicular traffic without mitigation along the route. To date as set out above a suitable mitigation package has not been agreed. Given that this site makes up a substantial proportion of the emerging allocation this will need to be a key consideration for any application which comes forward ahead of the local plan evidence base being agreed.

I hope the above information is useful.

Kind Regards

Holly

Holly Drury BSc (Hons) MSc MCIHT MSoRSA

Principal Transport Planner – Highways Development Planning

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David Stoddart

From: David Stoddart
Sent: 10 June 2019 16:26
To: Drury, Holly
Cc: Hirst, Chris; Morton, Stuart
Subject: RE: Pre-app Request - Hayling Island
Attachments: 7478-L-02 DEVELOPMENT FRAMEWORK PLAN RevK.pdf; P18034-007.pdf; P18034-001B.pdf; P18034-002.pdf; P18034-003.pdf; P18034-004.pdf; P18034-005.pdf; P18034-006.pdf; St Mary's Road, Hayling Island, Hampshire_Scoping Checklist.docx

Hi Holly,

Further to the below, please find attached our 'Scoping Checklist' for your review along with the associated access drawing, pedestrian improvement drawings, swept paths and indicative development framework plan.

As you may be aware, Havant Borough Council have a desire for a greater number of dwellings to be accommodated on this site than what Gladman were seeking permission for as part of the previous planning application. The density has therefore been increased and the care home element removed.

We anticipate utilising Havant's Paramics model as the basis for the impact assessment.

I have been told by the applicant that the cheque and pre-app request form will be posted tonight. For your information, the applicant is due to have a pre-app meeting with HBC on 24th or 25th June, I'm sure that HBC would be appreciative if your comments were available in time for the meeting if at all possible.

If you require any further information at this stage, please don't hesitate to contact me.

Kind regards

Dave

David Stoddart
Associate Director
Prime Transport Planning

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From: Drury, Holly <holly.drury@hants.gov.uk>
Sent: 03 June 2019 09:07
To: David Stoddart <D.Stoddart@primetp.co.uk>
Cc: Hirst, Chris <Chris.Hirst@hants.gov.uk>; Morton, Stuart <Stuart.Morton@hants.gov.uk>
Subject: RE: Pre-app Request - Hayling Island

Hi David

Yes for the short term this would still be me. The fees would be as set out in our pre-app documentation of £2000 plus VAT. This would be a major 2 scale application.

Payment can be made via cheque made payable to Hampshire County Council and sent marked for my attention and 'Private and Confidential' to the following address:

Hampshire County Council
EII Court West 2nd Floor
The Castle
Winchester
Hampshire
SO23 8UJ

Alternatively we can arrange an invoice and for a BACs payment against this invoice if you are able to confirm who the invoice needs to be raised to.

Do you have a time scale for us receiving a scoping note to review?

Kind Regards

Holly

Holly Drury BSc (Hons) MSc MCIHT MSoRSA
Principal Transport Planner – Highways Development Planning
Strategic Transport
01962 826996 (HPSN 826996)



Hampshire County Council operates a pre-application highway advice service for developers.

Hampshire County Council welcomes and encourages discussions before a developer submits a planning application. Please follow this link for further information

[Pre-Application guidance for developers](#)

From: David Stoddart <D.Stoddart@primetp.co.uk>

Sent: 28 May 2019 14:31

To: Drury, Holly <holly.drury@hants.gov.uk>

Subject: Pre-app Request - Hayling Island

Hi Holly,

I trust you are well. As you may have heard, Havant BC are looking to allocate the Gladman site off St Mary's Road, Hayling Island for circa 390 dwellings and we'd like to 'get the ball rolling' in terms of scoping discussions with HCC.

Would you still be the best point of contact? If so, please can you confirm the fees and payment methods.

Kind regards

Dave

David Stoddart
Associate Director

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SCOPING CHECKLIST FOR: Up to 390 dwellings on land to the west of St. Mary's Road, Hayling Island, Hampshire (Rook Farm)

HIGHWAY AUTHORITY: Hampshire County Council (HCC) DATE PREPARED: 10/06/19

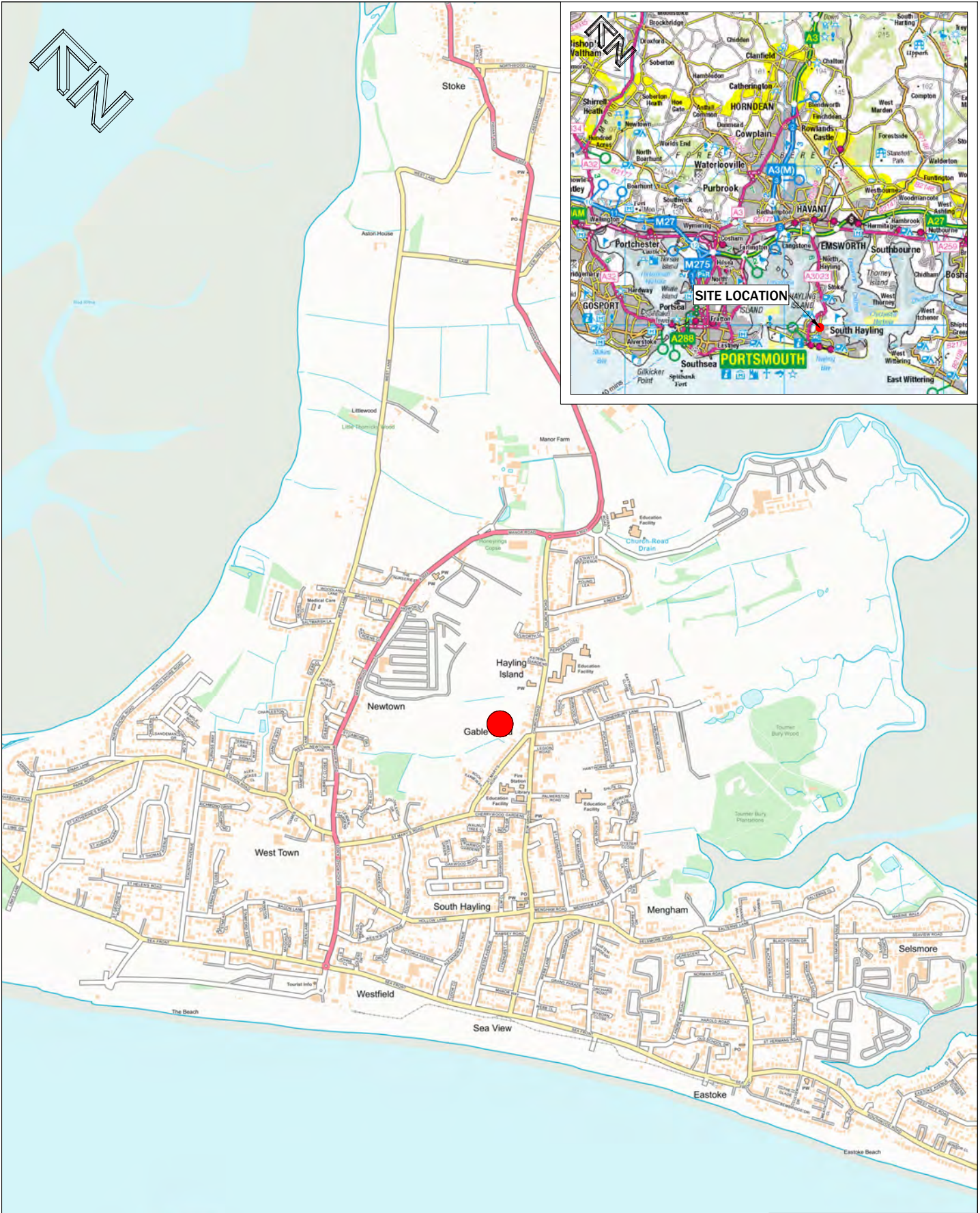
Ref	Item	Intention	LHA Comments
1	Level of planning approval sought? e.g. outline, full.	Outline with all matters reserved except for access	
2	Size and description of development proposals	Up to 390 dwellings as per emerging local plan allocation H27 Rook Farm. Site same site as APP/17/00007 for 210 dwellings and 0.6Ha apartments with care. Density increased to meet local plan allocation and apartments with care removed from this application.	
3	Description of existing land uses, existing trip distribution	Agricultural land – no existing trips	
4	Does the development involve the relocation of an existing use?	No	
5	What transport based supporting documents will be produced?	Environmental Statement (Transport Chapter), Transport Assessment, Framework Travel Plan and Stage 1 Road Safety Audit with Designers' response to Safety Audit.	
6	Are traffic surveys of the existing conditions available or required?	Local plan Paramics model commissioned by Havant Borough Council (HBC) to be used. Details in Hayling Island Local Plan Transport Assessment. Speed surveys at proposed site access location dated 8 th & 14 th November 2016 used in access design.	
7	Are further traffic surveys required?	HCC to advise.	
8	Details of any other developments to be taken into account.	Other local plan allocations. HCC to advise if there are any other committed developments that need to be taken account of.	
9	Details of any adjacent highway improvement proposals by others	Please advise if there are any highway improvement schemes that need to be taken account of. We are aware of the local plan mitigation proposals	

10	When are the critical periods for assessments?	Weekday AM and PM Paramics model peaks.	
11	When would the site be fully operational?	Likely to be circa 7-year build-out. Allowing for Reserved Matters, discharge of conditions etc, year of first occupation likely to be around 2028.	
12	What are the assessment years?	2036 as per Paramics model and local plan year end	
13	Traffic growth factors?	Paramics model to be used	
14	How will vehicular trip generation be derived for the proposal?	Paramics model trip rates (TRICS based) as shown in Table 15 of Hayling Island TA	
15	How will non-car mode trip generation be derived for the proposal?	Same TRICS sample used in Paramics model to be reconstructed and used	
16	Would traffic from adjacent sites be attracted to the site? Pass-by traffic?	100% newly generated trips as per Hayling Island TA	
17	What is the assumed trip distribution?	As per Paramics model	
18	What is the extent of the accident study area to be considered?	Same as APP/17/00007 – A3023 from A27 to Sea Front, Sea Front, Sea Grove Avenue, Elm Grove, Church Road and all roads in between including St Mary's Road.	
19	Capacity tests required for the proposed and following existing junctions	Formal assessment proposed for site access Paramics model used to consider junction and journey time impact	
20	Are adjacent junctions or links likely to become overloaded?	Expected that application will contribute to HBC/HCC led schemes requires to deliver the local plan.	
21	Is a new or modified highway access likely?	Single priority controlled access to be proposed on St Mary's Road (See attached Drawing P18034-001B. Dimensions based on swept paths. Potential emergency connection to H28 and internal emergency connection between two parcels of site.	

		New footway provision on St Mary's Road and pedestrian improvements at St Mary's Road/Church Road/Tournerbury Lane junction as shown in Drawing P18034-002 attached. Swept paths shown in Drawings P18034-003 to 007 attached. Note that HBC suggested vehicular access to be provided onto Manor Road however this involves a considerable amount of land outside of the allocation boundary and the applicant's control. This is therefore not feasible. See attached Development Framework Plan for indicative arrangement. Comments welcome on suggested access arrangements	
22	What are the visibility requirements?	Visibility splays shown on Drawing P18034-001B are MfS compliant based on observed 85 th percentile speeds of 20mph and 29mph.	
23	What level of car parking is required?	To be agreed at Reserved Matters stage however please advise on most current local guidance such that reference can be made in the Transport Assessment	
24	Are special provisions required for cyclists, pedestrians, those with a disability or public transport?	To be reviewed as part of Transport Assessment. Local plan improvement measures contain enhancements to local pedestrian and cycle infrastructure.	
25	What planning policy should the development comply with?	• NPPF; • MfS/MfS2 & HCC Companion Document; • HCC LTP 2011 - 2031; • Havant BC Core Strategy 2011; and • Emerging policies in Havant BC Draft Local Plan 2016 – 2036 HCC to advise on any others	
26	Are there any other special circumstances relevant to this proposal?	Please advise	

APPENDIX B

FIGURES



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Key	
	SITE LOCATION
Drawn by VB	Issue date 11 NOV 2025
Scale(s)	NTS
Drawing No	FIGURE 1



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Project	ST MARY'S ROAD, HAYLING ISLAND, HAMPSHIRE
Title	SITE LOCATION PLAN

Walking Isochrone



Development Site

Local Services/Education/Employment



Amusement Park



CherryHarbour Nursery



Church Road/Elm Grove Bus Stops



Co-Operative Foodstore



Community Allotments



Furniss Way Businesses



Hayling Christian Centre



Hayling Island Community Centre



Hayling Island Health Centre



Hayling Island Holiday Park



Hayling Island Library



Hayling Pharmacy



Hot Food takeaways



Lidl



Mengham Infant School



Mengham Junior School



Mill Rythe Coastal Village



Mill Rythe Schools (Infant and Junior)



Recreation Ground and Play Area



Seacourt Tennis Club and Gym



South Hayling District Centre



St Mary Church



The Hayling College



The Infinity Bar Hayling Island



Veterinary Practice

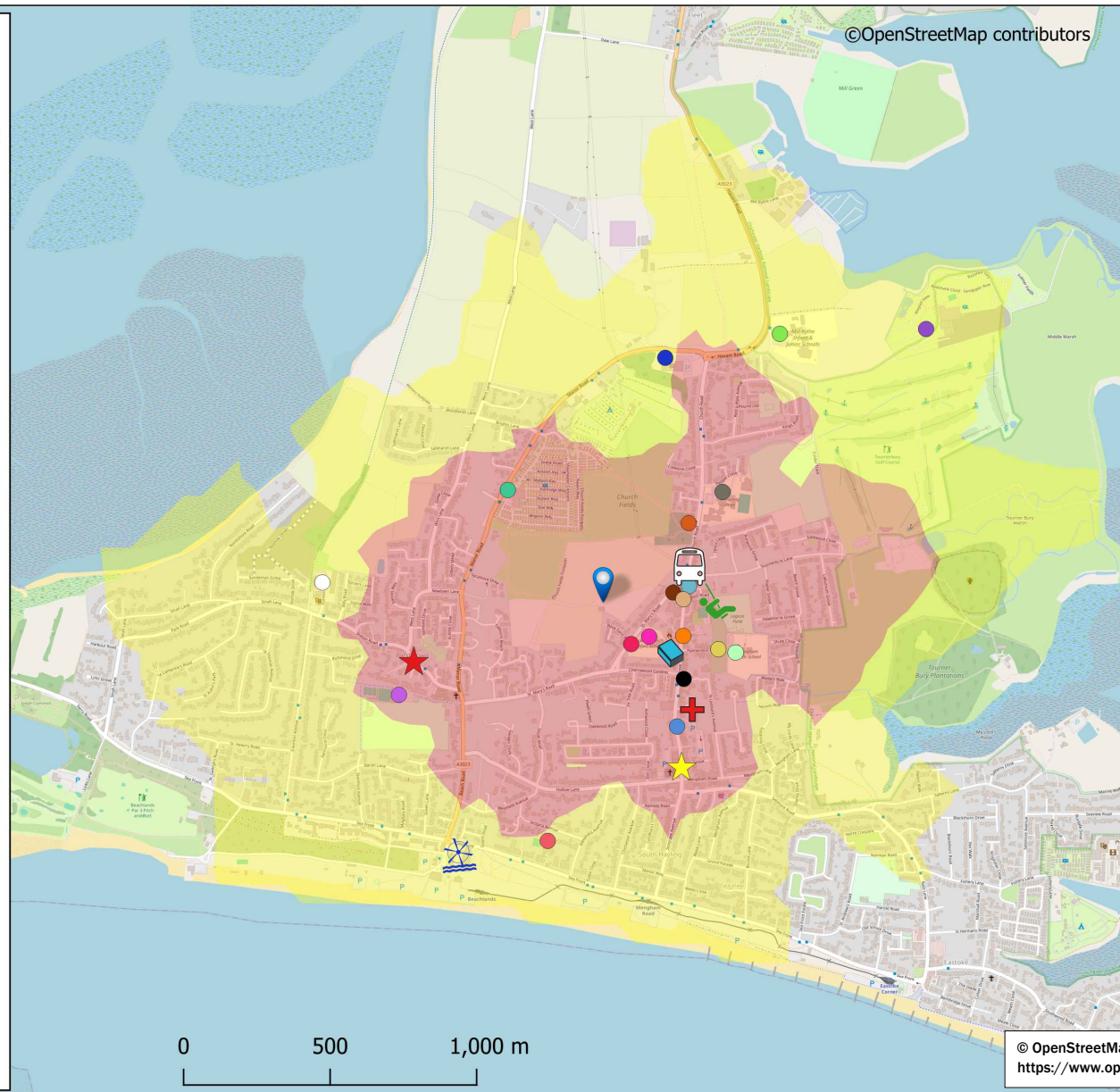


West Town District Centre

Walking Range (m)

0-1200

1200-2000



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*	*	*	*
Rev	Date	By	Revision notes
Status			
FINAL			

Project	ST MARY'S ROAD, HAYLING ISLAND, HAMPSHIRE	Drawn by VB	Issue date 11 NOV 2025
Title	PEDESTRIAN ISOCHRONE	Scale(s)	NTS
		Drawing No	FIGURE 2

Cycling Isochrone



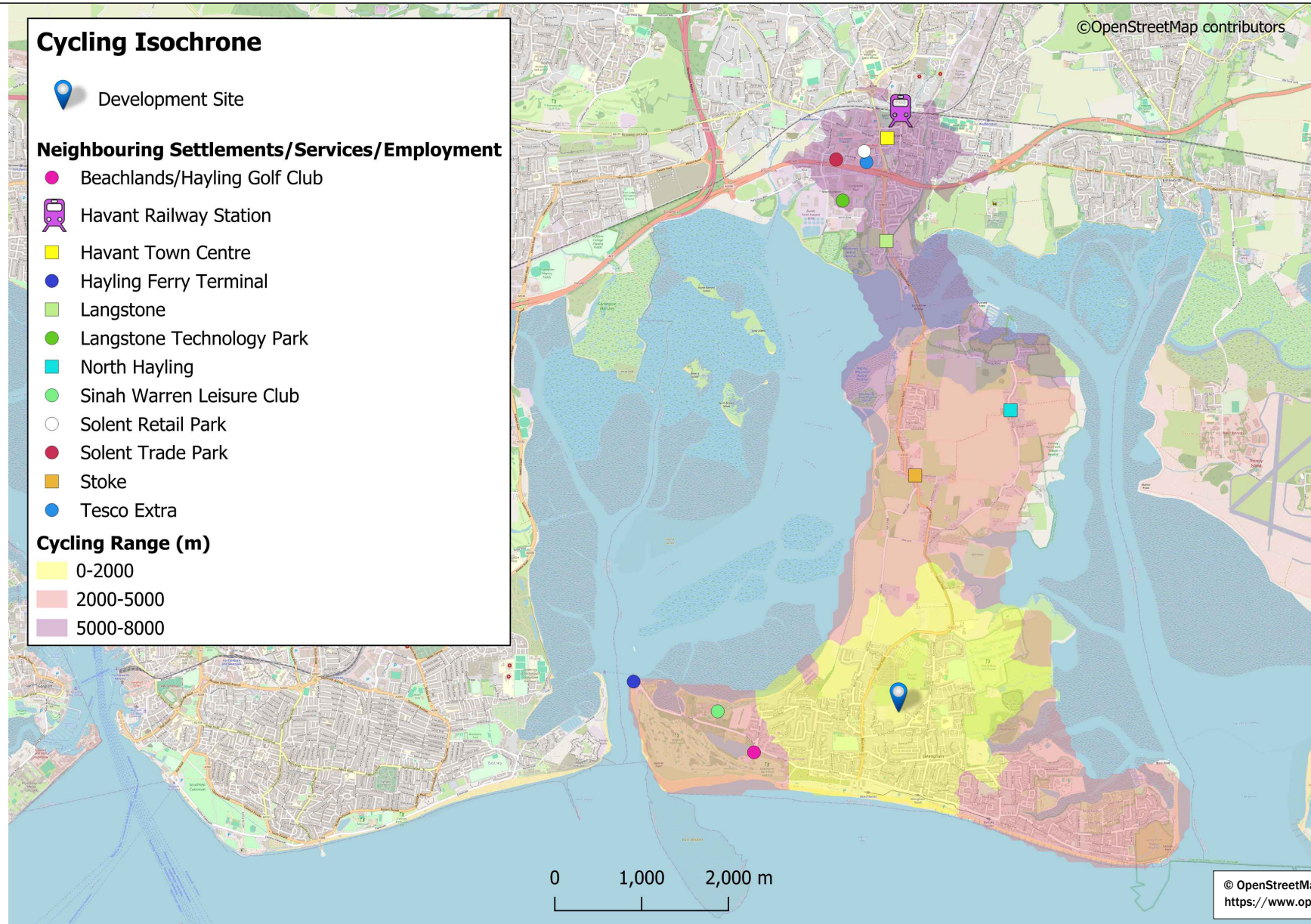
Development Site

Neighbouring Settlements/Services/Employment

- Beachlands/Hayling Golf Club
- Havant Railway Station
- Havant Town Centre
- Hayling Ferry Terminal
- Langstone
- Langstone Technology Park
- North Hayling
- Sinah Warren Leisure Club
- Solent Retail Park
- Solent Trade Park
- Stoke
- Tesco Extra

Cycling Range (m)

- 0-2000
- 2000-5000
- 5000-8000



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*	*	*	*
Rev	Date	By	Revision notes
Status			
FINAL			

Project	ST MARY'S ROAD, HAYLING ISLAND, HAMPSHIRE
Title	CYCLING ISOCHRONE

Drawn by VB	Issue date 11 NOV 2025
Scale(s) NTS	
Drawing No FIGURE 3	

Development Site

Bus Isochrone

0-15

15-30

30-45

45-60

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*	*	*	*
Rev	Date	By	Revision notes
Status			
FINAL			

Project	ST MARY'S ROAD, HAYLING ISLAND, HAMPSHIRE
Title	BUS CATCHMENT PLAN

Drawn by VB	Issue date 11 NOV 2025
Scale(s)	NTS
Drawing No	FIGURE 4

APPENDIX C

RAW TRAFFIC SURVEY DATA

Hayling Island ATC, St Mary's Road

Channel 1 - Northbound

Average Speed

Week 1

Hr Ending	03/10/2019 Thursday	04/10/2019 Friday	05/10/2019 Saturday	06/10/2019 Sunday	07/10/2019 Monday	08/10/2019 Tuesday	09/10/2019 Wednesday
1	-	28.0	21.0	26.3	23.0	28.0	-
2	-	-	15.5	26.8	28.0	23.8	-
3	-	15.5	23.0	-	23.0	23.0	-
4	-	-	15.5	23.0	-	-	-
5	-	-	-	5.0	23.0	23.0	-
6	-	21.9	20.3	25.5	24.8	23.2	-
7	-	23.9	23.6	28.0	24.1	24.8	-
8	-	23.3	18.2	22.9	22.0	22.8	-
9	-	21.1	17.2	23.9	19.7	20.9	-
10	-	21.0	19.5	22.1	19.8	21.8	-
11	-	21.9	22.8	22.5	21.6	21.8	-
12	-	22.4	22.5	22.0	21.6	22.2	-
13	-	18.0	21.2	22.7	22.8	20.4	-
14	-	17.1	22.0	22.7	22.5	22.4	-
15	22.6	21.8	22.5	22.1	21.3	22.9	-
16	22.2	22.0	19.9	24.7	21.8	23.0	-
17	22.1	22.8	22.1	25.5	19.4	-	-
18	21.4	24.9	23.1	22.9	22.6	-	-
19	23.5	24.3	21.8	23.7	22.2	-	-
20	21.9	23.5	22.5	23.7	22.7	-	-
21	23.8	23.2	23.8	21.8	21.9	-	-
22	26.6	24.3	18.6	22.2	24.8	-	-
23	22.0	23.4	23.7	20.4	21.1	-	-
24	28.0	24.6	19.0	19.6	24.7	-	-

10-12	-	22.1	22.6	22.2	21.6	22.0	-
14-16	22.3	21.9	21.0	23.3	21.5	23.0	-
0-24	22.5	21.9	21.3	22.9	21.5	22.1	-

Average	22.0
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Channel 1 - Northbound

85th Percentile

Hr Ending	03/10/2019 Thursday	04/10/2019 Friday	05/10/2019 Saturday	06/10/2019 Sunday	07/10/2019 Monday	08/10/2019 Tuesday	09/10/2019 Wednesday
1	-	-	28.7	28.7	23.7	-	-
2	-	-	-	28.3	-	33.8	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	28.4	28.1	28.2	33.4	33.0	-
7	-	29.0	29.0	28.6	28.4	28.2	-
8	-	28.9	23.7	28.1	28.3	28.1	-
9	-	28.1	23.0	28.5	23.1	28.1	-
10	-	28.9	28.6	28.9	23.2	28.3	-
11	-	28.4	28.1	28.3	29.0	28.1	-
12	-	28.5	28.1	28.8	28.1	28.0	-
13	-	23.8	28.8	28.4	28.4	23.5	-
14	-	23.1	28.3	28.3	28.4	28.7	-
15	28.7	28.6	28.0	28.9	28.5	28.5	-
16	28.5	28.5	28.3	28.6	28.2	28.8	-
17	28.6	28.3	28.4	28.6	28.5	-	-
18	28.3	28.6	28.3	28.4	28.3	-	-
19	28.3	28.6	28.9	28.1	28.6	-	-
20	28.8	28.3	29.0	28.6	28.5	-	-
21	28.0	28.3	28.4	28.7	28.2	-	-
22	33.8	33.8	23.3	28.9	28.9	-	-
23	28.8	28.8	28.2	28.8	28.7	-	-
24	33.7	28.6	23.2	28.0	28.5	-	-

10-12	-	29.0	28.6	28.5	28.4	28.1	-
14-16	28.0	28.9	28.4	28.9	28.1	28.2	-
0-24	28.4	28.2	28.4	28.4	28.8	28.7	-

85th %ile	28.5
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Hayling Island ATC, St Mary's Road

Channel 2 - Southbound

Average Speed

Week 1

Hr Ending	03/10/2019 Thursday	04/10/2019 Friday	05/10/2019 Saturday	06/10/2019 Sunday	07/10/2019 Monday	08/10/2019 Tuesday	09/10/2019 Wednesday
1	-	28.0	23.6	20.4	15.5	17.0	-
2	-	-	28.0	23.0	-	28.0	-
3	-	-	23.0	5.0	-	-	-
4	-	-	19.2	15.5	-	-	-
5	-	-	-	-	23.0	-	-
6	-	23.0	17.2	15.5	21.8	25.5	-
7	-	20.2	21.5	25.5	24.8	23.2	-
8	-	21.9	20.1	19.2	20.2	19.9	-
9	-	20.1	18.9	22.8	19.6	19.6	-
10	-	20.9	18.4	20.1	20.1	19.1	-
11	-	20.6	19.8	19.9	19.8	20.1	-
12	-	19.0	19.4	19.6	18.9	20.1	-
13	-	17.2	19.2	20.5	19.9	19.7	-
14	-	18.0	18.6	21.3	19.7	19.0	-
15	17.2	18.1	19.2	18.4	17.8	18.7	-
16	18.7	19.4	19.3	21.1	18.4	20.0	-
17	20.5	19.9	19.4	22.2	20.8	-	-
18	18.8	20.8	21.9	20.9	21.1	-	-
19	21.9	21.8	20.1	22.0	21.6	-	-
20	24.2	20.9	18.2	20.6	22.3	-	-
21	21.7	22.6	22.7	23.6	21.6	-	-
22	24.7	19.4	17.0	16.1	23.2	-	-
23	17.9	24.1	21.6	20.4	19.2	-	-
24	23.0	22.2	16.7	20.5	23.0	-	-
10-12	-	19.7	19.6	19.7	19.4	20.1	-
14-16	18.0	18.8	19.3	19.8	18.1	19.3	-
0-24	20.3	19.8	19.6	20.6	19.9	19.6	-

Average 20.0

Channel 2 - Southbound

85th Percentile

Hr Ending	03/10/2019 Thursday	04/10/2019 Friday	05/10/2019 Saturday	06/10/2019 Sunday	07/10/2019 Monday	08/10/2019 Tuesday	09/10/2019 Wednesday
1	-	-	28.5	28.4	-	23.7	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	23.6	16.2	-	-	-
5	-	-	-	-	-	-	-
6	-	-	33.8	-	28.6	28.6	-
7	-	23.6	23.9	29.0	28.4	28.2	-
8	-	23.2	23.3	23.3	23.9	23.5	-
9	-	23.9	23.5	28.5	23.5	23.7	-
10	-	23.1	23.1	23.4	23.2	23.8	-
11	-	23.4	23.6	23.7	23.7	23.4	-
12	-	23.3	23.4	23.2	23.7	23.9	-
13	-	23.9	24.0	23.4	23.6	23.7	-
14	-	23.8	23.1	28.5	23.8	23.1	-
15	23.5	23.3	23.9	23.8	23.2	23.6	-
16	23.4	23.7	23.6	28.5	23.8	23.7	-
17	23.1	23.3	23.3	28.4	28.2	-	-
18	23.7	23.1	28.1	28.5	24.0	-	-
19	28.9	28.0	23.5	28.2	28.1	-	-
20	28.5	28.3	23.2	23.6	28.1	-	-
21	28.1	28.8	29.0	28.5	28.8	-	-
22	28.8	28.3	23.1	23.7	28.4	-	-
23	28.4	28.2	28.0	28.9	28.5	-	-
24	28.5	28.5	23.3	23.4	23.1	-	-
10-12	-	23.3	23.5	23.3	23.1	23.0	-
14-16	23.5	23.3	23.9	23.3	23.2	23.4	-
0-24	28.2	23.0	23.5	28.2	23.0	23.4	-

85th %ile 24.9

Hayling Island ATC

Direction: Northeastbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
Tue 17 Aug	464	26.1	21.7	4.2	0	3	27	104	243	82	5	0	0	0	0	0
Wed 18 Aug	832	25.9	21.4	4.3	0	10	44	211	432	122	13	0	0	0	0	0
Thu 19 Aug	835	25.7	21.1	4.5	0	8	64	230	386	142	4	1	0	0	0	0
Fri 20 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sat 21 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sun 22 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Mon 23 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
5 Day Ave.	710	25.9	21.4	4.3	0	7	45	182	354	115	7	0	0	0	0	0
7 Day Ave.	710	25.9	21.4	4.3	0	7	45	182	354	115	7	0	0	0	0	0

360 TSL Ltd

Direction: Southwestbound

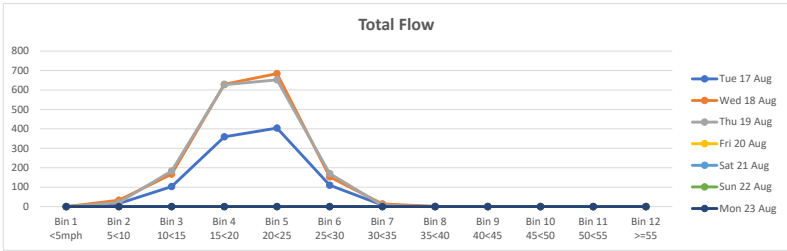
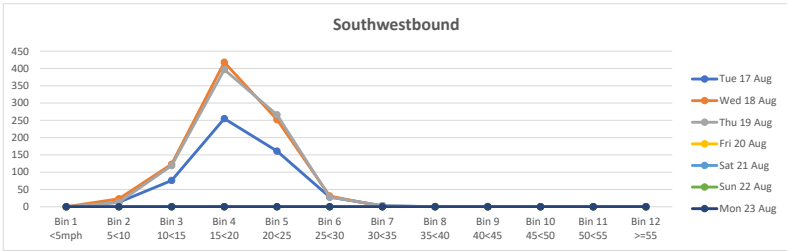
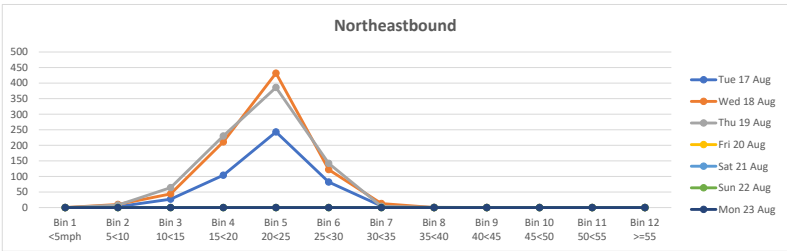
	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
Tue 17 Aug	536	23.1	18.7	4.3	0	13	76	255	161	28	3	0	0	0	0	0
Wed 18 Aug	849	22.7	18.4	4.2	0	23	123	418	252	31	1	1	0	0	0	0
Thu 19 Aug	827	22.9	18.7	4.1	0	13	119	397	266	28	3	0	1	0	0	0
Fri 20 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sat 21 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sun 22 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Mon 23 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
5 Day Ave.	737	22.9	18.6	4.2	0	16	106	357	226	29	2	0	0	0	0	0
7 Day Ave.	737	22.9	18.6	4.2	0	16	106	357	226	29	2	0	0	0	0	0

360 TSL Ltd

Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
Tue 17 Aug	1000	24.8	20.1	4.5	0	16	103	359	404	110	8	0	0	0	0	0
Wed 18 Aug	1681	24.5	19.9	4.5	0	33	167	629	684	153	14	1	0	0	0	0
Thu 19 Aug	1662	24.5	19.9	4.5	0	21	183	627	652	170	7	1	1	0	0	0
Fri 20 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sat 21 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sun 22 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Mon 23 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
5 Day Ave.	1448	24.6	20.0	4.5	0	23	151	538	580	144	10	1	0	0	0	0
7 Day Ave.	1448	24.6	20.0	4.5	0	23	151	538	580	144	10	1	0	0	0	0

360 TSL Ltd



Hayling Island ATC

Direction: Northeastbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
12:00	58	23.8	19.4	4.3	0	1	8	20	26	3	0	0	0	0	0	0
13:00	60	25.3	21.1	4.0	0	1	2	18	31	8	0	0	0	0	0	0
14:00	68	24.8	20.7	3.9	0	0	6	20	35	7	0	0	0	0	0	0
15:00	54	26.0	21.8	4.1	0	0	3	12	30	8	1	0	0	0	0	0
16:00	44	26.3	22.0	4.2	0	0	2	11	20	11	0	0	0	0	0	0
17:00	70	26.2	22.1	3.9	0	1	3	9	44	13	0	0	0	0	0	0
18:00	43	26.8	23.7	3.1	0	0	0	4	25	14	0	0	0	0	0	0
19:00	22	27.5	23.0	4.3	0	0	1	3	12	5	1	0	0	0	0	0
20:00	18	25.0	20.6	4.2	0	0	2	5	9	2	0	0	0	0	0	0
21:00	11	27.9	23.9	3.9	0	0	0	2	4	5	0	0	0	0	0	0
22:00	10	30.6	26.5	3.9	0	0	0	0	4	2	0	0	0	0	0	0
23:00	6	30.1	25.8	4.1	0	0	0	0	3	2	1	0	0	0	0	0
Total	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
2H(10-12)	122	25.3	21.1	4.0	0	0	9	32	65	15	1	0	0	0	0	0
12H(7-19)	397	25.7	21.4	4.1	0	3	24	94	211	64	1	0	0	0	0	0
24H(0-24)	464	26.1	21.7	4.2	0	3	27	104	243	82	5	0	0	0	0	0
AM Peak	00:00 0	#N/A 0.0	#N/A 0.0	#N/A 0.0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0
PM Peak	17:00 70	22:00 30.6	22:00 26.5	19:00 4.3	12:00 0	12:00 1	12:00 8	12:00 20	17:00 44	18:00 14	22:00 2	12:00 0	12:00 0	12:00 0	12:00 0	12:00 0

360 TSL Ltd

Direction: Southwestbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
12:00	52	21.7	17.4	4.1	0	1	14	23	13	1	0	0	0	0	0	0
13:00	57	20.9	16.9	3.9	0	3	11	34	8	1	0	0	0	0	0	0
14:00	43	21.3	17.5	3.6	0	1	8	24	10	0	0	0	0	0	0	0
15:00	68	22.0	17.5	4.3	0	4	11	36	15	2	0	0	0	0	0	0
16:00	73	22.4	18.7	3.6	0	1	6	44	19	3	0	0	0	0	0	0
17:00	99	24.0	19.2	4.6	0	2	16	37	35	9	0	0	0	0	0	0
18:00	60	23.4	19.4	3.8	0	0	5	32	18	5	0	0	0	0	0	0
19:00	25	24.2	20.5	3.5	0	0	0	12	12	1	0	0	0	0	0	0
20:00	24	26.2	21.0	5.0	0	0	3	6	11	3	1	0	0	0	0	0
21:00	24	24.9	21.5	3.3	0	0	1	5	16	2	0	0	0	0	0	0
22:00	6	29.9	20.8	8.8	0	1	0	2	1	1	1	0	0	0	0	0
23:00	5	27.2	21.5	5.5	0	0	1	0	3	1	0	0	0	0	0	0
Total	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
2H(10-12)	111	21.7	17.5	4.0	0	5	19	60	25	2	0	0	0	0	0	0
12H(7-19)	452	22.5	18.2	4.2	0	12	71	230	118	21	0	0	0	0	0	0
24H(0-24)	536	23.1	18.7	4.3	0	13	76	255	161	28	3	0	0	0	0	0
AM Peak	00:00 0	#N/A 0.0	#N/A 0.0	#N/A 0.0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0
PM Peak	17:00 99	22:00 29.9	22:00 21.5	22:00 8.8	12:00 0	12:00 4	12:00 16	12:00 44	17:00 35	18:00 9	19:00 1	12:00 0	12:00 0	12:00 0	12:00 0	12:00 0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
12:00	110	22.9	18.5	4.3	0	2	22	43	39	4	0	0	0	0	0	0
13:00	117	23.7	19.0	4.5	0	4	13	52	39	9	0	0	0	0	0	0
14:00	111	23.7	19.4	4.1	0	1	14	44	45	7	0	0	0	0	0	0
15:00	122	24.3	19.4	4.7	0	4	14	48	45	10	1	0	0	0	0	0
16:00	117	24.2	19.9	4.1	0	1	8	55	39	14	0	0	0	0	0	0
17:00	169	25.1	20.4	4.6	0	3	19	46	79	22	0	0	0	0	0	0
18:00	103	25.4	21.2	4.1	0	0	5	36	43	19	0	0	0	0	0	0
19:00	47	25.9	21.6	4.1	0	0	1	15	24	5	2	0	0	0	0	0
20:00	42	25.6	20.8	4.6	0	0	5	11	20	5	1	0	0	0	0	0
21:00	35	26.0	22.2	3.6	0	0	1	7	20	7	0	0	0	0	0	0
22:00	16	31.2	24.4	6.6	0	1	0	2	5	5	3	0	0	0	0	0
23:00	11	29.1	23.9	5.0	0	0	1	0	6	3	1	0	0	0	0	0
Total	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
2H(10-12)	233	24.0	19.4	4.4	0	5	28	92	90	17	1	0	0	0	0	0
12H(7-19)	849	24.3	19.7	4.4	0	15	95	324	329	85	1	0	0	0	0	0
24H(0-24)	1000	24.8	20.1	4.5	0	16	103	359	404	110	8	0	0	0	0	0
AM Peak	00:00 0	#N/A 0.0	#N/A 0.0	#N/A 0.0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0
PM Peak	17:00 169	22:00 31.2	22:00 24.4	22:00 6.6	12:00 0	12:00 4	12:00 22	16:00 55	17:00 79	17:00 22	22:00 3	12:00 0	12:00 0	12:00 0	12:00 0	12:00 0

360 TSL Ltd

Hayling Island ATC

Direction: Northeastbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
01:00	1	-	27.5	-	0	0	0	0	0	1	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	1	-	27.5	-	0	0	0	0	0	1	0	0	0	0	0	0
04:00	1	-	17.5	-	0	0	0	1	0	0	0	0	0	0	0	0
05:00	9	26.2	23.1	3.0	0	0	0	1	6	2	0	0	0	0	0	0
06:00	19	26.6	22.2	4.2	0	0	1	4	9	5	0	0	0	0	0	0
07:00	50	27.3	22.8	4.3	0	1	2	4	30	12	1	0	0	0	0	0
08:00	68	25.9	21.7	4.0	0	1	2	16	37	12	0	0	0	0	0	0
09:00	64	24.6	21.6	2.9	0	0	1	14	44	5	0	0	0	0	0	0
10:00	69	23.2	18.7	4.4	0	1	12	30	23	2	1	0	0	0	0	0
11:00	80	25.2	20.8	4.3	0	3	2	24	42	9	0	0	0	0	0	0
12:00	66	25.1	21.0	4.0	0	1	4	16	38	7	0	0	0	0	0	0
13:00	57	26.5	22.1	4.2	0	0	3	11	32	9	2	0	0	0	0	0
14:00	54	25.7	21.3	4.2	0	1	2	15	27	9	0	0	0	0	0	0
15:00	60	25.0	20.8	4.0	0	0	6	13	37	3	1	0	0	0	0	0
16:00	52	26.9	22.8	4.0	0	0	0	13	25	12	2	0	0	0	0	0
17:00	60	26.4	22.1	4.1	0	0	1	19	25	14	1	0	0	0	0	0
18:00	39	25.3	21.0	4.2	0	0	3	11	21	3	1	0	0	0	0	0
19:00	42	25.9	20.7	5.0	0	1	3	14	18	4	2	0	0	0	0	0
20:00	12	28.2	24.2	3.9	0	0	0	2	4	6	0	0	0	0	0	0
21:00	17	28.6	23.4	5.1	0	0	2	0	9	5	1	0	0	0	0	0
22:00	7	26.2	19.6	6.4	0	1	0	2	3	1	0	0	0	0	0	0
23:00	4	30.3	23.8	6.3	0	0	0	1	2	0	1	0	0	0	0	0
Total																
2H(10-12)	149	24.4	19.8	4.4	0	4	14	54	65	11	1	0	0	0	0	0
2H(14-16)	114	25.3	21.1	4.1	0	1	8	28	64	12	1	0	0	0	0	0
12H(7-19)	719	25.6	21.3	4.2	0	8	38	186	381	97	9	0	0	0	0	0
24H(0-24)	832	25.9	21.4	4.3	0	10	44	211	432	122	13	0	0	0	0	0
AM Peak	11:00	07:00	01:00	10:00	00:00	11:00	10:00	10:00	09:00	07:00	07:00	00:00	00:00	00:00	00:00	00:00
	80	27.3	27.5	4.4	0	3	12	30	44	12	1	0	0	0	0	0
PM Peak	12:00	23:00	20:00	22:00	12:00	12:00	15:00	17:00	12:00	17:00	13:00	12:00	12:00	12:00	12:00	12:00
	66	30.3	24.2	6.4	0	1	6	19	38	14	2	0	0	0	0	0

360 TSL Ltd

Direction: Southwestbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	3	23.8	20.8	2.9	0	0	0	1	2	0	0	0	0	0	0	0
01:00	2	22.5	22.5	0.0	0	0	0	0	2	0	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	2	29.8	22.5	7.1	0	0	0	1	0	1	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	3	22.5	22.5	0.0	0	0	0	0	3	0	0	0	0	0	0	0
06:00	10	24.5	19.5	4.8	0	0	3	0	7	0	0	0	0	0	0	0
07:00	45	23.2	19.1	4.0	0	1	3	25	13	3	0	0	0	0	0	0
08:00	54	23.1	19.6	3.3	0	0	3	27	22	2	0	0	0	0	0	0
09:00	44	21.6	18.6	2.8	0	0	3	28	13	0	0	0	0	0	0	0
10:00	66	20.0	15.5	4.4	0	6	25	26	8	1	0	0	0	0	0	0
11:00	79	21.8	18.2	3.5	0	1	8	52	15	3	0	0	0	0	0	0
12:00	59	22.0	16.8	5.0	0	7	11	25	15	1	0	0	0	0	0	0
13:00	68	22.1	18.3	3.6	0	2	4	46	13	3	0	0	0	0	0	0
14:00	58	22.4	17.9	4.3	0	2	12	24	19	1	0	0	0	0	0	0
15:00	65	22.6	18.9	3.6	0	0	9	30	25	1	0	0	0	0	0	0
16:00	59	22.1	18.5	3.4	0	1	4	38	14	2	0	0	0	0	0	0
17:00	82	22.4	18.2	4.0	0	1	16	37	26	2	0	0	0	0	0	0
18:00	49	23.1	18.0	4.9	0	2	12	17	15	3	0	0	0	0	0	0
19:00	50	24.2	20.1	3.9	0	0	5	18	23	4	1	0	0	0	0	0
20:00	19	26.5	21.4	4.9	0	0	1	7	7	3	1	0	0	0	0	0
21:00	21	25.0	19.6	5.1	0	0	2	11	7	0	0	1	0	0	0	0
22:00	9	23.6	18.6	4.9	0	0	2	4	2	1	0	0	0	0	0	0
23:00	2	23.7	20.0	3.5	0	0	0	1	1	0	0	0	0	0	0	0
Total																
2H(10-12)	145	21.2	16.9	4.1	0	7	33	78	23	4	0	0	0	0	0	0
2H(14-16)	123	22.5	18.4	4.0	0	2	21	54	44	2	0	0	0	0	0	0
12H(7-19)	728	22.3	18.1	4.1	0	23	110	375	198	22	0	0	0	0	0	0
24H(0-24)	849	22.7	18.4	4.2	0	23	123	418	252	31	1	1	0	0	0	0
AM Peak	11:00	03:00	01:00	03:00	00:00	10:00	10:00	11:00	08:00	07:00	00:00	00:00	00:00	00:00	00:00	00:00
	79	29.8	22.5	7.1	0	6	25	52	22	3	0	0	0	0	0	0
PM Peak	17:00	20:00	20:00	21:00	12:00	12:00	17:00	13:00	17:00	19:00	20:00	21:00	12:00	12:00	12:00	12:00
	82	26.5	21.4	5.1	0	7	16	46	26	4	1	1	0	0	0	0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	3	23.8	20.8	2.9	0	0	0	1	2	0	0	0	0	0	0	0
01:00	3	27.2	24.2	2.9	0	0	0	0	2	1	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	3	30.2	24.2	5.8	0	0	0	1	0	2	0	0	0	0	0	0
04:00	1	-	17.5	-	0	0	0	1	0	0	0	0	0	0	0	0
05:00	12	25.6	22.9	2.6	0	0	0	1	9	2	0	0	0	0	0	0
06:00	29	26.0	21.3	4.6	0	0	4	4	16	5	0	0	0	0	0	0
07:00	95	25.7	21.0	4.5	0	2	5	29	43	15	1	0	0	0	0	0
08:00	122	24.8	20.8	3.8	0	1	5	43	59	14	0	0	0	0	0	0
09:00	108	23.7	20.4	3.2	0	0	4	42	57	5	0	0	0	0	0	0
10:00	135	21.9	17.1	4.7	0	7	37	56	31	3	1	0	0	0	0	0
11:00	159	23.7	19.5	4.1	0	4	10	76	57	12	0	0	0	0	0	0
12:00	125	24.1	19.0	4.9	0	8	15	41	53	8	0	0	0	0	0	0
13:00	125	24.6	20.1	4.3	0	2	7	57	45	12	2	0	0	0	0	0
14:00	112	24.3	19.6	4.6	0	3	14	39	46	10	0	0	0	0	0	0
15:00	125	23.9	19.8	3.9	0	0	15	43	62	4	1	0	0	0	0	0
16:00	111	25.0	20.5	4.3	0	1	4	51	39	14	2	0	0	0	0	0
17:00	142	24.5	19.9	4.5	0	1	17	56	51	16	1	0	0	0	0	0
18:00	88	24.3	19.3	4.8	0	2	15	28	36	6	1	0	0	0	0	0
19:00	92	25.0	20.4	4.5	0	1	8	32	41	8	2	0	0	0	0	0
20:00	31	27.3	22.5	4.7	0	0	1	9	11	9	1	0	0	0	0	0
21:00	38	26.9	21.3	5.4	0	0	4	11	16	5	1	1	0	0	0	0
22:00	16	24.6	19.1	5.4	0	1	2	6	5	2	0	0	0	0	0	0
23:00	6	28.2	22.5	5.5	0	0	0	2	3	0	1	0	0	0	0	0
Total																
2H(10-12)	294	23.1	18.4	4.5	0	11	47	132	88	15	1	0	0	0	0	0
2H(14-16)	237	24.1	19.7	4.2	0	3	29	82	108	14	1	0	0	0	0	0
12H(7-19)	1447	24.3	19.7	4.4	0	31	148	561	579	119	9	0	0	0	0	0
24H(0-24)	1681	24.5	19.9	4.5	0	33	167	629	684	153	14	1	0	0	0	0
AM Peak					00:00	10:00	10:00	11:00	08:00	07:00	07:00	00:00	00:00	00:00	00:00	00:00
11:00	294	30.2	24.2	5.8	0	7	37	76	59	15	1	0	0	0	0	0
PM Peak					12:00	12:00	17:00	13:00	15:00	17:00	13:00	21:00	12:00	12:00	12:00	12:00
14:00	28.2	23.0	20.0	23.00	0	8	17	57	62	16	2	1	0	0	0	0

Hayling Island ATC

Direction: Northeastbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	2	31.0	20.0	10.6	0	0	1	0	0	1	0	0	0	0	0	0
01:00	1	-	37.5	-	0	0	0	0	0	0	0	1	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	1	-	22.5	-	0	0	0	0	1	0	0	0	0	0	0	0
04:00	1	-	12.5	-	0	0	1	0	0	0	0	0	0	0	0	0
05:00	5	26.2	22.5	3.5	0	0	0	1	3	1	0	0	0	0	0	0
06:00	19	27.8	22.2	5.4	0	0	2	5	4	8	0	0	0	0	0	0
07:00	34	25.7	21.2	4.3	0	0	2	12	13	7	0	0	0	0	0	0
08:00	61	26.0	21.8	4.0	0	0	3	15	30	13	0	0	0	0	0	0
09:00	63	25.3	21.1	4.1	0	1	4	14	37	7	0	0	0	0	0	0
10:00	56	25.6	21.0	4.5	0	1	3	18	24	10	0	0	0	0	0	0
11:00	66	26.2	20.7	5.3	0	3	6	16	29	11	1	0	0	0	0	0
12:00	62	24.9	21.3	3.5	0	0	2	18	35	7	0	0	0	0	0	0
13:00	122	24.1	19.9	4.1	0	1	10	52	49	9	1	0	0	0	0	0
14:00	66	24.7	19.5	5.0	0	0	15	19	24	7	1	0	0	0	0	0
15:00	73	24.9	20.4	4.3	0	0	8	24	31	10	0	0	0	0	0	0
16:00	43	26.8	22.3	4.4	0	1	1	8	22	11	0	0	0	0	0	0
17:00	59	26.8	22.2	4.4	0	1	2	13	27	16	0	0	0	0	0	0
18:00	39	25.9	22.6	3.1	0	0	1	4	27	7	0	0	0	0	0	0
19:00	45	26.8	22.6	4.1	0	0	2	8	22	13	0	0	0	0	0	0
20:00	17	27.8	22.8	4.8	0	0	1	3	8	4	1	0	0	0	0	0
21:00	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
23:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Total																
2H(10-12)	122	25.9	20.8	4.9	0	4	9	34	53	21	1	0	0	0	0	0
2H(14-16)	139	24.8	20.0	4.7	0	0	23	43	55	17	1	0	0	0	0	0
12H(7-19)	744	25.5	21.0	4.4	0	8	57	213	348	115	3	0	0	0	0	0
24H(0-24)	835	25.7	21.1	4.5	0	8	64	230	386	142	4	1	0	0	0	0
AM Peak	11:00	00:00	01:00	00:00	00:00	11:00	11:00	10:00	09:00	08:00	11:00	01:00	00:00	00:00	00:00	00:00
	66	31.0	37.5	10.6	0	3	6	18	37	13	1	1	0	0	0	0
PM Peak	13:00	20:00	20:00	14:00	12:00	13:00	14:00	13:00	13:00	17:00	13:00	12:00	12:00	12:00	12:00	12:00
	122	27.8	22.8	5.0	0	1	15	52	49	16	1	0	0	0	0	0

360 TSL Ltd

Direction: Southwestbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	1	-	32.5	-	0	0	0	0	1	0	1	0	0	0	0	0
01:00	3	35.2	29.2	5.8	0	0	0	0	1	0	2	0	0	0	0	0
02:00	1	-	22.5	-	0	0	0	0	1	0	0	0	0	0	0	0
03:00	2	31.0	20.0	10.6	0	0	1	0	0	1	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	1	-	22.5	-	0	0	0	0	1	0	0	0	0	0	0	0
06:00	10	22.6	18.5	3.9	0	0	2	4	4	0	0	0	0	0	0	0
07:00	47	22.9	18.7	4.1	0	0	9	20	16	2	0	0	0	0	0	0
08:00	46	24.0	19.8	4.0	0	1	3	19	20	3	0	0	0	0	0	0
09:00	51	24.2	19.8	4.3	0	2	3	19	24	3	0	0	0	0	0	0
10:00	64	22.0	18.4	3.5	0	0	10	34	19	1	0	0	0	0	0	0
11:00	56	22.9	18.8	3.9	0	0	9	25	20	2	0	0	0	0	0	0
12:00	56	21.2	17.6	3.5	0	1	10	32	13	0	0	0	0	0	0	0
13:00	65	20.9	17.6	3.2	0	1	10	41	13	0	0	0	0	0	0	0
14:00	63	21.8	18.1	3.6	0	2	6	39	15	1	0	0	0	0	0	0
15:00	83	19.5	15.7	3.7	0	4	31	39	9	0	0	0	0	0	0	0
16:00	68	23.2	19.8	3.3	0	0	1	40	22	5	0	0	0	0	0	0
17:00	76	23.6	19.0	4.5	0	0	10	39	24	2	0	0	1	0	0	0
18:00	63	23.5	19.0	4.4	0	2	8	25	25	3	0	0	0	0	0	0
19:00	43	24.6	20.5	4.0	0	0	4	13	22	4	0	0	0	0	0	0
20:00	27	24.2	20.6	3.4	0	0	2	7	17	1	0	0	0	0	0	0
21:00	1	-	17.5	-	0	0	0	1	0	0	0	0	0	0	0	0
22:00	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
Total																
2H(10-12)	120	22.4	18.6	3.7	0	0	19	59	39	3	0	0	0	0	0	0
2H(14-16)	146	20.7	16.7	3.8	0	6	37	78	24	1	0	0	0	0	0	0
12H(7-19)	738	22.5	18.4	4.0	0	13	110	372	220	22	0	0	1	0	0	0
24H(0-24)	827	22.9	18.7	4.1	0	13	119	397	266	28	3	0	1	0	0	0
AM Peak	10:00	01:00	00:00	03:00	00:00	09:00	10:00	10:00	09:00	08:00	01:00	00:00	00:00	00:00	00:00	00:00
	64	35.2	32.5	10.6	0	2	10	34	24	3	2	0	0	0	0	0
PM Peak	15:00	19:00	20:00	17:00	12:00	15:00	15:00	13:00	18:00	16:00	12:00	12:00	17:00	12:00	12:00	12:00
	83	24.6	20.6	4.5	0	4	31	41	25	5	0	0	1	0	0	0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	3	35.0	24.2	10.4	0	0	1	0	0	1	1	0	0	0	0	0
01:00	4	37.8	31.3	6.3	0	0	0	0	1	0	2	1	0	0	0	0
02:00	1	-	22.5	-	0	0	0	0	1	0	0	0	0	0	0	0
03:00	3	28.7	20.8	7.6	0	0	1	0	1	1	0	0	0	0	0	0
04:00	1	-	12.5	-	0	0	1	0	0	0	0	0	0	0	0	0
05:00	6	25.8	22.5	3.2	0	0	0	1	4	1	0	0	0	0	0	0
06:00	29	26.3	20.9	5.2	0	0	4	9	8	8	0	0	0	0	0	0
07:00	81	24.2	19.7	4.3	0	0	11	32	29	9	0	0	0	0	0	0
08:00	107	25.3	21.0	4.1	0	1	6	34	50	16	0	0	0	0	0	0
09:00	114	24.8	20.5	4.2	0	3	7	33	61	10	0	0	0	0	0	0
10:00	120	23.9	19.6	4.2	0	1	13	52	43	11	0	0	0	0	0	0
11:00	122	24.8	19.8	4.8	0	3	15	41	49	13	1	0	0	0	0	0
12:00	118	23.6	19.5	3.9	0	1	12	50	48	7	0	0	0	0	0	0
13:00	187	23.2	19.1	4.0	0	2	20	93	62	9	1	0	0	0	0	0
14:00	129	23.4	18.8	4.4	0	2	21	58	39	8	1	0	0	0	0	0
15:00	156	22.7	17.9	4.6	0	4	39	63	40	10	0	0	0	0	0	0
16:00	111	24.8	20.7	3.9	0	1	2	48	44	16	0	0	0	0	0	0
17:00	135	25.3	20.4	4.7	0	1	12	52	51	18	0	0	1	0	0	0
18:00	102	24.9	20.4	4.3	0	2	9	29	52	10	0	0	0	0	0	0
19:00	88	25.9	21.6	4.1	0	0	6	21	44	17	0	0	0	0	0	0
20:00	44	25.7	21.5	4.1	0	0	3	10	25	5	1	0	0	0	0	0
21:00	1	-	17.5	-	0	0	0	1	0	0	0	0	0	0	0	0
22:00	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
Total																
2H(10-12)	242	24.4	19.7	4.5	0	4	28	93	92	24	1	0	0	0	0	0
2H(14-16)	285	23.0	18.3	4.6	0	6	60	121	79	18	1	0	0	0	0	0
12H(7-19)	1482	24.2	19.7	4.4	0	21	167	585	568	137	3	0	1	0	0	0
24H(0-24)	1662	24.5	19.9	4.5	0	21	183	627	652	170	7	1	1	0	0	0

Hayling Island, Tuesday 14th May 2024



St. Mary's Road

	Southwestbound				Northeastbound			
TIME	LIGHT	OGV1	OGV2	TOTAL	LIGHT	OGV1	OGV2	TOTAL
07:00 - 07:15	6	0	0	6	15	0	0	15
07:15 - 07:30	9	0	0	9	17	0	0	17
07:30 - 07:45	15	0	0	15	22	0	0	22
07:45 - 08:00	17	0	0	17	27	0	0	27
Hourly Total	47	0	0	47	81	0	0	81
08:00 - 08:15	23	0	0	23	34	0	0	34
08:15 - 08:30	22	0	0	22	26	0	0	26
08:30 - 08:45	17	0	0	17	19	0	0	19
08:45 - 09:00	20	0	0	20	22	0	0	22
Hourly Total	82	0	0	82	101	0	0	101
09:00 - 09:15	18	0	0	18	21	0	0	21
09:15 - 09:30	15	0	0	15	17	0	0	17
09:30 - 09:45	12	0	0	12	13	0	0	13
09:45 - 10:00	11	0	0	11	15	0	0	15
Hourly Total	56	0	0	56	66	0	0	66
10:00 - 10:15	7	1	0	8	14	0	0	14
10:15 - 10:30	10	0	0	10	11	0	0	11
10:30 - 10:45	12	0	0	12	13	0	0	13
10:45 - 11:00	9	0	0	9	11	0	0	11
Hourly Total	38	1	0	39	49	0	0	49
11:00 - 11:15	13	0	0	13	15	0	0	15
11:15 - 11:30	8	0	0	8	12	0	0	12
11:30 - 11:45	10	0	0	10	11	0	0	11
11:45 - 12:00	13	0	0	13	14	0	0	14
Hourly Total	44	0	0	44	52	0	0	52
12:00 - 12:15	11	0	0	11	17	0	0	17
12:15 - 12:30	12	0	0	12	15	0	0	15
12:30 - 12:45	14	0	0	14	16	0	0	16
12:45 - 13:00	17	0	0	17	14	0	0	14
Hourly Total	54	0	0	54	62	0	0	62
13:00 - 13:15	22	0	0	22	14	0	0	14
13:15 - 13:30	11	0	0	11	6	0	0	6
13:30 - 13:45	13	0	0	13	12	0	0	12
13:45 - 14:00	10	0	0	10	17	0	0	17
Hourly Total	56	0	0	56	49	0	0	49
14:00 - 14:15	11	0	0	11	21	0	0	21
14:15 - 14:30	14	0	0	14	15	0	0	15
14:30 - 14:45	16	0	0	16	13	0	0	13
14:45 - 15:00	22	0	0	22	19	0	0	19
Hourly Total	63	0	0	63	68	0	0	68
15:00 - 15:15	28	0	0	28	26	0	0	26
15:15 - 15:30	23	0	0	23	20	0	0	20
15:30 - 15:45	17	0	0	17	19	0	0	19
15:45 - 16:00	14	0	0	14	13	0	0	13
Hourly Total	82	0	0	82	78	0	0	78
16:00 - 16:15	15	0	0	15	18	0	0	18
16:15 - 16:30	13	0	0	13	15	0	0	15
16:30 - 16:45	17	0	0	17	18	0	0	18
16:45 - 17:00	19	0	0	19	14	0	0	14
Hourly Total	64	0	0	64	65	0	0	65
17:00 - 17:15	23	0	0	23	19	0	0	19
17:15 - 17:30	17	0	0	17	18	0	0	18
17:30 - 17:45	11	0	0	11	13	0	0	13
17:45 - 18:00	13	0	0	13	16	0	0	16
Hourly Total	64	0	0	64	66	0	0	66
18:00 - 18:15	14	0	0	14	14	0	0	14
18:15 - 18:30	15	0	0	15	11	0	0	11
18:30 - 18:45	18	0	0	18	9	0	0	9
18:45 - 19:00	17	0	0	17	5	0	0	5
Hourly Total	64	0	0	64	39	0	0	39
TOTAL	714	1	0	715	776	0	0	776

Smith & Austin
Engineering

All Vehicles	
IN	OUT
1	0
1	0
0	0
0	0
2	0
0	0
1	0
0	0
2	0
0	0
0	0
0	0
2	0
2	0
0	0
0	0
0	1
0	0
0	1
0	0
0	0
0	0
0	0
0	0
0	0
1	0
0	2
1	0
0	0
2	2
1	1
0	1
0	1
0	0
1	3
0	0
1	0
0	2
0	0
1	2
1	0
1	0
0	1
0	0
2	1
1	0
1	1
0	0
0	1
2	2
0	0
0	2
0	1
0	0
0	0
0	0
0	3
1	1
0	0
0	0
0	0
1	1

Parking Beat

TIME	ZONE 1	ZONE 2	ZONE 3
07:00	0	0	0
07:15	0	0	0
07:30	0	0	0
07:45	0	0	0
08:00	0	2	0
08:15	0	1	0
08:30	0	0	0
08:45	0	0	0
09:00	0	0	0
09:15	0	0	0
09:30	0	0	0
09:45	0	0	0
10:00	0	0	0
10:15	0	0	0
10:30	0	0	0
10:45	0	0	0
11:00	0	0	0
11:15	0	0	0
11:30	0	0	0
11:45	0	0	0
12:00	0	0	0
12:15	0	0	0
12:30	0	0	0
12:45	0	0	0
13:00	0	0	0
13:15	0	0	0
13:30	0	0	0
13:45	0	0	0
14:00	0	0	0
14:15	0	0	0
14:30	0	0	0
14:45	0	0	0
15:00	0	1	0
15:15	0	0	0
15:30	0	0	0
15:45	0	0	0
16:00	0	0	0
16:15	0	0	0
16:30	1	0	0
16:45	1	0	0
17:00	2	0	0
17:15	1	0	0
17:30	0	0	0
17:45	0	0	0
18:00	0	0	0
18:15	0	0	0
18:30	0	0	0
18:45	0	0	0

[illegible]

Hayling Island, Wednesday 15th May 2024



St. Mary's Road

	Southwestbound					Northeastbound			
TIME	LIGHT	OGV1	OGV2	TOTAL	LIGHT	OGV1	OGV2	TOTAL	
07:00 - 07:15	3	0	0	3	12	0	0	12	
07:15 - 07:30	6	0	0	6	15	0	0	15	
07:30 - 07:45	10	1	0	11	20	0	0	20	
07:45 - 08:00	18	0	0	18	25	0	0	25	
Hourly Total	37	1	0	38	72	0	0	72	
08:00 - 08:15	24	0	0	24	34	0	0	34	
08:15 - 08:30	19	0	0	19	29	0	0	29	
08:30 - 08:45	14	0	0	14	25	0	0	25	
08:45 - 09:00	15	0	0	15	22	0	0	22	
Hourly Total	72	0	0	72	110	0	0	110	
09:00 - 09:15	17	0	0	17	20	0	0	20	
09:15 - 09:30	19	0	0	19	18	0	0	18	
09:30 - 09:45	15	0	0	15	14	0	0	14	
09:45 - 10:00	17	0	0	17	15	0	0	15	
Hourly Total	68	0	0	68	67	0	0	67	
10:00 - 10:15	16	0	0	16	14	0	0	14	
10:15 - 10:30	13	0	0	13	16	0	0	16	
10:30 - 10:45	15	0	0	15	11	1	0	12	
10:45 - 11:00	10	0	0	10	15	0	0	15	
Hourly Total	54	0	0	54	56	1	0	57	
11:00 - 11:15	9	0	0	9	12	0	0	12	
11:15 - 11:30	11	0	0	11	17	0	0	17	
11:30 - 11:45	15	0	0	15	14	0	0	14	
11:45 - 12:00	12	0	0	12	20	0	0	20	
Hourly Total	47	0	0	47	63	0	0	63	
12:00 - 12:15	16	0	0	16	26	0	0	26	
12:15 - 12:30	17	0	0	17	21	0	0	21	
12:30 - 12:45	15	0	0	15	19	0	0	19	
12:45 - 13:00	18	1	0	19	25	0	0	25	
Hourly Total	66	1	0	67	91	0	0	91	
13:00 - 13:15	20	0	0	20	23	0	0	23	
13:15 - 13:30	10	0	0	10	14	0	0	14	
13:30 - 13:45	16	0	0	16	15	0	0	15	
13:45 - 14:00	13	0	0	13	12	0	0	12	
Hourly Total	59	0	0	59	64	0	0	64	
14:00 - 14:15	12	0	0	12	11	0	0	11	
14:15 - 14:30	13	0	0	13	14	0	0	14	
14:30 - 14:45	15	0	0	15	17	0	0	17	
14:45 - 15:00	16	0	0	16	19	0	0	19	
Hourly Total	56	0	0	56	61	0	0	61	
15:00 - 15:15	17	0	0	17	20	0	0	20	
15:15 - 15:30	20	0	0	20	24	0	0	24	
15:30 - 15:45	15	0	0	15	17	0	0	17	
15:45 - 16:00	19	0	0	19	21	0	0	21	
Hourly Total	71	0	0	71	82	0	0	82	
16:00 - 16:15	22	0	0	22	26	0	0	26	
16:15 - 16:30	18	0	0	18	22	0	0	22	
16:30 - 16:45	14	0	0	14	19	0	0	19	
16:45 - 17:00	21	0	0	21	16	0	0	16	
Hourly Total	75	0	0	75	83	0	0	83	
17:00 - 17:15	23	0	0	23	23	0	0	23	
17:15 - 17:30	17	0	0	17	19	0	0	19	
17:30 - 17:45	13	0	0	13	11	0	0	11	
17:45 - 18:00	15	0	0	15	14	0	0	14	
Hourly Total	68	0	0	68	67	0	0	67	
18:00 - 18:15	18	0	0	18	15	0	0	15	
18:15 - 18:30	16	0	0	16	12	0	0	12	
18:30 - 18:45	13	0	0	13	10	0	0	10	
18:45 - 19:00	9	0	0	9	9	0	0	9	
Hourly Total	56	0	0	56	46	0	0	46	
TOTAL	729	2	0	731	862	1	0	863	

Smith & Austin
Engineering

All Vehicles	
IN	OUT
1	0
2	0
0	1
0	0
3	1
1	0
0	0
1	0
0	0
2	0
0	0
1	0
0	0
0	0
1	0
0	1
0	0
0	0
0	0
0	1
1	1
0	0
1	1
0	0
2	2
0	0
0	1
0	0
1	0
1	1
0	0
0	1
0	1
1	0
1	2
1	1
1	1
0	1
0	0
2	3
1	0
0	0
1	1
0	0
2	1
0	0
0	0
1	1
0	0
1	1
0	2
0	1
0	0
0	0
0	3
0	0
0	0
0	0
0	0
15	15

Parking Beat

TIME	ZONE 1	ZONE 2	ZONE 3
07:00	0	0	0
07:15	0	0	0
07:30	0	0	0
07:45	0	0	0
08:00	0	1	0
08:15	0	0	0
08:30	0	0	0
08:45	0	0	0
09:00	0	0	0
09:15	0	0	0
09:30	0	0	0
09:45	0	0	0
10:00	0	0	0
10:15	0	0	0
10:30	0	0	0
10:45	0	0	0
11:00	0	0	0
11:15	0	0	0
11:30	0	0	0
11:45	0	0	0
12:00	0	0	0
12:15	0	0	0
12:30	0	0	0
12:45	0	0	0
13:00	0	0	0
13:15	0	0	0
13:30	0	0	0
13:45	0	0	0
14:00	0	0	0
14:15	0	0	0
14:30	0	0	0
14:45	0	0	0
15:00	0	0	0
15:15	0	0	0
15:30	0	1	0
15:45	0	0	0
16:00	0	0	0
16:15	0	0	0
16:30	0	0	0
16:45	0	0	0
17:00	0	0	0
17:15	0	0	0
17:30	0	0	0
17:45	0	0	0
18:00	1	0	0
18:15	1	0	0
18:30	0	0	0
18:45	0	1	0

[illegible]

Hayling Island, Thursday 16th May 2024



St. Mary's Road

	Southwestbound				Northeastbound			
TIME	LIGHT	OGV1	OGV2	TOTAL	LIGHT	OGV1	OGV2	TOTAL
07:00 - 07:15	6	0	0	6	11	0	0	11
07:15 - 07:30	8	1	0	9	14	1	0	15
07:30 - 07:45	13	0	0	13	20	0	0	20
07:45 - 08:00	19	0	0	19	26	0	0	26
Hourly Total	46	1	0	47	71	1	0	72
08:00 - 08:15	23	0	0	23	38	0	0	38
08:15 - 08:30	25	0	0	25	30	0	0	30
08:30 - 08:45	21	0	0	21	25	0	0	25
08:45 - 09:00	16	0	0	16	27	0	0	27
Hourly Total	85	0	0	85	120	0	0	120
09:00 - 09:15	18	0	0	18	24	0	0	24
09:15 - 09:30	13	0	0	13	20	0	0	20
09:30 - 09:45	15	0	0	15	17	0	0	17
09:45 - 10:00	16	0	0	16	22	1	0	23
Hourly Total	62	0	0	62	83	1	0	84
10:00 - 10:15	7	0	0	7	19	0	0	19
10:15 - 10:30	11	0	0	11	14	0	0	14
10:30 - 10:45	14	0	0	14	15	0	0	15
10:45 - 11:00	12	0	0	12	10	0	0	10
Hourly Total	44	0	0	44	58	0	0	58
11:00 - 11:15	10	0	0	10	6	0	0	6
11:15 - 11:30	12	0	0	12	9	0	0	9
11:30 - 11:45	16	0	0	16	14	0	0	14
11:45 - 12:00	13	0	0	13	10	0	0	10
Hourly Total	51	0	0	51	39	0	0	39
12:00 - 12:15	19	0	0	19	11	0	0	11
12:15 - 12:30	15	0	0	15	16	0	0	16
12:30 - 12:45	10	0	0	10	21	0	0	21
12:45 - 13:00	14	0	0	14	24	0	0	24
Hourly Total	58	0	0	58	72	0	0	72
13:00 - 13:15	12	0	0	12	28	0	0	28
13:15 - 13:30	15	0	0	15	21	0	0	21
13:30 - 13:45	11	0	0	11	17	0	0	17
13:45 - 14:00	13	0	0	13	16	0	0	16
Hourly Total	51	0	0	51	82	0	0	82
14:00 - 14:15	12	0	0	12	14	0	0	14
14:15 - 14:30	14	0	0	14	15	0	0	15
14:30 - 14:45	17	0	0	17	19	0	0	19
14:45 - 15:00	20	0	0	20	17	0	0	17
Hourly Total	63	0	0	63	65	0	0	65
15:00 - 15:15	28	0	0	28	26	0	0	26
15:15 - 15:30	22	0	0	22	24	0	0	24
15:30 - 15:45	19	0	0	19	21	0	0	21
15:45 - 16:00	23	0	0	23	20	0	0	20
Hourly Total	92	0	0	92	91	0	0	91
16:00 - 16:15	18	0	0	18	33	0	0	33
16:15 - 16:30	21	0	0	21	24	0	0	24
16:30 - 16:45	16	0	0	16	20	0	0	20
16:45 - 17:00	18	0	0	18	21	0	0	21
Hourly Total	73	0	0	73	98	0	0	98
17:00 - 17:15	19	0	0	19	16	0	0	16
17:15 - 17:30	24	0	0	24	14	0	0	14
17:30 - 17:45	32	0	0	32	17	0	0	17
17:45 - 18:00	25	0	0	25	19	0	0	19
Hourly Total	100	0	0	100	66	0	0	66
18:00 - 18:15	17	0	0	17	22	0	0	22
18:15 - 18:30	16	0	0	16	15	0	0	15
18:30 - 18:45	15	0	0	15	11	0	0	11
18:45 - 19:00	12	0	0	12	8	0	0	8
Hourly Total	60	0	0	60	56	0	0	56

TOTAL	785	1	0	786	901	2	0	903
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Smith & Austin
Engineering

All Vehicles	
IN	OUT
1	0
1	0
0	0
0	0
2	0
0	0
1	0
0	0
1	0
2	0
1	0
0	0
1	2
1	0
3	2
0	1
1	0
0	1
0	0
1	2
1	0
0	1
0	0
1	1
2	2
0	0
0	1
1	0
0	1
1	2
1	0
0	1
0	0
1	1
0	0
1	0
1	0
0	1
2	1
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	1
0	0
0	0
0	1
0	3
0	0
0	0
0	0
0	0
0	3
0	0
0	0
0	0
0	0

14	14
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Parking Beat

TIME	ZONE 1	ZONE 2	ZONE 3
07:00	1	0	0
07:15	1	1	0
07:30	0	0	0
07:45	1	0	0
08:00	0	0	0
08:15	0	0	0
08:30	0	0	0
08:45	0	0	0
09:00	0	0	0
09:15	0	0	0
09:30	0	0	0
09:45	0	0	0
10:00	0	0	0
10:15	0	0	0
10:30	0	0	0
10:45	0	0	0
11:00	0	0	0
11:15	0	0	0
11:30	0	0	0
11:45	0	0	0
12:00	0	0	0
12:15	0	0	0
12:30	0	0	0
12:45	0	0	0
13:00	0	0	0
13:15	0	0	0
13:30	0	0	0
13:45	0	0	0
14:00	0	0	0
14:15	0	0	0
14:30	0	1	0
14:45	0	0	0
15:00	0	0	0
15:15	0	0	0
15:30	0	0	0
15:45	0	0	0
16:00	0	0	0
16:15	0	0	0
16:30	0	0	0
16:45	0	0	0
17:00	0	0	0
17:15	0	0	0
17:30	0	0	0
17:45	0	0	0
18:00	0	0	0
18:15	0	0	0
18:30	0	0	0
18:45	0	0	0

[illegible]

Hayling Island, Friday 17th May 2024



St. Mary's Road

	Southwestbound				Northeastbound			
TIME	LIGHT	OGV1	OGV2	TOTAL	LIGHT	OGV1	OGV2	TOTAL
07:00 - 07:15	7	0	0	7	17	0	0	17
07:15 - 07:30	6	1	0	7	18	0	0	18
07:30 - 07:45	12	0	0	12	19	0	0	19
07:45 - 08:00	24	0	0	24	19	0	0	19
Hourly Total	49	1	0	50	73	0	0	73
08:00 - 08:15	17	0	0	17	34	0	0	34
08:15 - 08:30	31	0	0	31	32	0	0	32
08:30 - 08:45	30	0	0	30	24	0	0	24
08:45 - 09:00	28	1	0	29	40	0	0	40
Hourly Total	106	1	0	107	130	0	0	130
09:00 - 09:15	11	0	0	11	20	0	0	20
09:15 - 09:30	16	0	0	16	10	0	0	10
09:30 - 09:45	8	0	0	8	13	1	0	14
09:45 - 10:00	12	0	0	12	17	0	0	17
Hourly Total	47	0	0	47	60	1	0	61
10:00 - 10:15	13	0	0	13	19	0	0	19
10:15 - 10:30	11	0	0	11	15	0	0	15
10:30 - 10:45	16	0	0	16	11	0	0	11
10:45 - 11:00	13	0	0	13	16	0	0	16
Hourly Total	53	0	0	53	61	0	0	61
11:00 - 11:15	15	0	0	15	16	1	0	17
11:15 - 11:30	14	0	0	14	14	0	0	14
11:30 - 11:45	11	0	0	11	15	0	0	15
11:45 - 12:00	16	0	0	16	17	0	0	17
Hourly Total	56	0	0	56	62	1	0	63
12:00 - 12:15	15	0	0	15	19	0	0	19
12:15 - 12:30	15	0	0	15	15	0	0	15
12:30 - 12:45	17	0	0	17	13	0	0	13
12:45 - 13:00	14	0	0	14	18	0	0	18
Hourly Total	61	0	0	61	65	0	0	65
13:00 - 13:15	12	0	0	12	14	0	0	14
13:15 - 13:30	16	0	0	16	15	0	0	15
13:30 - 13:45	15	0	0	15	21	0	0	21
13:45 - 14:00	13	0	0	13	19	0	0	19
Hourly Total	56	0	0	56	69	0	0	69
14:00 - 14:15	15	0	0	15	16	0	0	16
14:15 - 14:30	17	0	0	17	20	0	0	20
14:30 - 14:45	14	0	0	14	21	0	0	21
14:45 - 15:00	16	0	0	16	24	0	0	24
Hourly Total	62	0	0	62	81	0	0	81
15:00 - 15:15	15	0	0	15	27	0	0	27
15:15 - 15:30	17	0	0	17	23	0	0	23
15:30 - 15:45	14	0	0	14	22	0	0	22
15:45 - 16:00	19	0	0	19	19	0	0	19
Hourly Total	65	0	0	65	91	0	0	91
16:00 - 16:15	22	0	0	22	18	0	0	18
16:15 - 16:30	25	0	0	25	15	0	0	15
16:30 - 16:45	17	0	0	17	19	0	0	19
16:45 - 17:00	19	0	0	19	14	0	0	14
Hourly Total	83	0	0	83	66	0	0	66
17:00 - 17:15	20	0	0	20	16	0	0	16
17:15 - 17:30	14	0	0	14	11	0	0	11
17:30 - 17:45	16	0	0	16	15	0	0	15
17:45 - 18:00	15	0	0	15	10	0	0	10
Hourly Total	65	0	0	65	52	0	0	52
18:00 - 18:15	8	0	0	8	12	0	0	12
18:15 - 18:30	17	0	0	17	10	0	0	10
18:30 - 18:45	11	0	0	11	8	0	0	8
18:45 - 19:00	13	0	0	13	9	0	0	9
Hourly Total	49	0	0	49	39	0	0	39
TOTAL	752	2	0	754	849	2	0	851

Smith & Austin
Engineering

All Vehicles	
IN	OUT
1	0
0	0
0	0
1	0
2	0
0	0
0	0
1	0
0	0
1	0
0	0
0	0
0	0
0	0
0	0
1	0
1	1
0	0
0	1
2	2
1	0
0	1
2	0
0	2
3	3
0	0
0	0
1	1
0	0
1	1
0	0
0	0
0	0
0	0
0	2
0	0
0	0
0	2
0	0
1	0
0	1
0	0
1	1
2	1
0	0
0	0
0	1
2	2
0	1
0	0
0	0
0	0
0	1
0	0
0	0
0	0
0	0

Parking Beat

TIME	ZONE 1	ZONE 2	ZONE 3
07:00	1	0	0
07:15	1	0	0
07:30	1	0	0
07:45	1	1	0
08:00	1	0	0
08:15	1	0	0
08:30	1	0	0
08:45	1	0	0
09:00	1	0	0
09:15	1	0	0
09:30	1	0	0
09:45	1	0	0
10:00	1	0	0
10:15	1	0	0
10:30	1	0	0
10:45	1	0	0
11:00	1	0	0
11:15	1	0	0
11:30	1	0	0
11:45	1	0	0
12:00	1	0	0
12:15	1	0	0
12:30	1	0	0
12:45	1	0	0
13:00	1	0	0
13:15	1	0	0
13:30	1	0	0
13:45	1	0	0
14:00	1	0	0
14:15	1	0	0
14:30	1	0	0
14:45	1	0	0
15:00	1	2	0
15:15	1	1	0
15:30	1	0	0
15:45	1	0	0
16:00	2	1	0
16:15	2	0	0
16:30	2	0	0
16:45	1	0	0
17:00	1	1	0
17:15	1	1	0
17:30	1	1	0
17:45	1	1	0
18:00	1	1	0
18:15	1	1	0
18:30	1	1	0
18:45	1	0	0

[illegible]

Hayling Island, Saturday 18th May 2024



St. Mary's Road

	Southwestbound				Northeastbound			
TIME	LIGHT	OGV1	OGV2	TOTAL	LIGHT	OGV1	OGV2	TOTAL
07:00 - 07:15	2	0	0	2	4	0	0	4
07:15 - 07:30	5	0	0	5	5	0	0	5
07:30 - 07:45	6	0	0	6	7	0	0	7
07:45 - 08:00	5	0	0	5	10	0	0	10
Hourly Total	18	0	0	18	26	0	0	26
08:00 - 08:15	5	0	0	5	14	0	0	14
08:15 - 08:30	9	0	0	9	12	0	0	12
08:30 - 08:45	11	0	0	11	14	0	0	14
08:45 - 09:00	14	0	0	14	15	0	0	15
Hourly Total	39	0	0	39	55	0	0	55
09:00 - 09:15	15	0	0	15	13	0	0	13
09:15 - 09:30	12	0	0	12	9	0	0	9
09:30 - 09:45	16	0	0	16	11	0	0	11
09:45 - 10:00	11	0	0	11	14	0	0	14
Hourly Total	54	0	0	54	47	0	0	47
10:00 - 10:15	13	0	0	13	16	0	0	16
10:15 - 10:30	17	0	0	17	15	0	0	15
10:30 - 10:45	21	0	0	21	17	0	0	17
10:45 - 11:00	25	0	0	25	20	0	0	20
Hourly Total	76	0	0	76	68	0	0	68
11:00 - 11:15	29	0	0	29	23	0	0	23
11:15 - 11:30	24	0	0	24	22	0	0	22
11:30 - 11:45	26	0	0	26	19	0	0	19
11:45 - 12:00	23	0	0	23	20	0	0	20
Hourly Total	102	0	0	102	84	0	0	84
12:00 - 12:15	19	0	0	19	16	0	0	16
12:15 - 12:30	15	0	0	15	17	0	0	17
12:30 - 12:45	12	0	0	12	13	0	0	13
12:45 - 13:00	9	0	0	9	10	0	0	10
Hourly Total	55	0	0	55	56	0	0	56
13:00 - 13:15	6	0	0	6	8	0	0	8
13:15 - 13:30	10	0	0	10	11	0	0	11
13:30 - 13:45	7	0	0	7	9	0	0	9
13:45 - 14:00	9	0	0	9	12	0	0	12
Hourly Total	32	0	0	32	40	0	0	40
14:00 - 14:15	8	0	0	8	16	0	0	16
14:15 - 14:30	10	0	0	10	12	0	0	12
14:30 - 14:45	11	0	0	11	15	0	0	15
14:45 - 15:00	9	0	0	9	12	0	0	12
Hourly Total	38	0	0	38	55	0	0	55
15:00 - 15:15	6	0	0	6	14	0	0	14
15:15 - 15:30	10	0	0	10	11	0	0	11
15:30 - 15:45	14	0	0	14	13	0	0	13
15:45 - 16:00	17	0	0	17	14	0	0	14
Hourly Total	47	0	0	47	52	0	0	52
16:00 - 16:15	20	0	0	20	11	0	0	11
16:15 - 16:30	15	0	0	15	16	0	0	16
16:30 - 16:45	17	0	0	17	15	0	0	15
16:45 - 17:00	13	0	0	13	18	0	0	18
Hourly Total	65	0	0	65	60	0	0	60
17:00 - 17:15	11	0	0	11	15	0	0	15
17:15 - 17:30	14	0	0	14	17	0	0	17
17:30 - 17:45	11	0	0	11	14	0	0	14
17:45 - 18:00	15	0	0	15	12	0	0	12
Hourly Total	51	0	0	51	58	0	0	58
18:00 - 18:15	12	0	0	12	9	0	0	9
18:15 - 18:30	11	0	0	11	10	0	0	10
18:30 - 18:45	9	0	0	9	7	0	0	7
18:45 - 19:00	10	0	0	10	8	0	0	8
Hourly Total	42	0	0	42	34	0	0	34
TOTAL	619	0	0	619	635	0	0	635

Smith & Austin
Engineering

[illegible]

Parking Beat

TIME	ZONE 1	ZONE 2	ZONE 3
07:00	1	0	0
07:15	1	0	0
07:30	1	0	0
07:45	1	0	0
08:00	0	0	0
08:15	0	0	0
08:30	0	0	0
08:45	0	0	0
09:00	0	0	0
09:15	0	0	0
09:30	1	0	0
09:45	1	0	0
10:00	1	0	0
10:15	1	0	0
10:30	1	0	0
10:45	1	0	0
11:00	1	0	0
11:15	1	0	0
11:30	1	0	0
11:45	1	0	0
12:00	1	0	0
12:15	1	0	0
12:30	1	0	0
12:45	1	0	0
13:00	1	0	0
13:15	0	0	0
13:30	0	0	0
13:45	0	0	0
14:00	0	0	0
14:15	0	0	0
14:30	0	0	0
14:45	0	0	0
15:00	0	0	0
15:15	0	0	0
15:30	0	0	0
15:45	0	0	0
16:00	0	1	0
16:15	0	0	0
16:30	0	0	0
16:45	0	1	0
17:00	0	0	0
17:15	0	0	0
17:30	0	0	0
17:45	0	0	0
18:00	0	0	0
18:15	0	0	0
18:30	0	0	0
18:45	0	0	0

NOTES
Zone 1 already parked at 07:00
Zone 1 walked to flats
Gates Closed at 11:57
Gates Opened
Zone 2 walked to business
Zone 2 crossed Road

Hayling Island, Sunday 19th May 2024



St. Mary's Road

	Southwestbound				Northeastbound			
TIME	LIGHT	OGV1	OGV2	TOTAL	LIGHT	OGV1	OGV2	TOTAL
07:00 - 07:15	0	0	0	0	2	0	0	2
07:15 - 07:30	2	0	0	2	3	0	0	3
07:30 - 07:45	4	0	0	4	5	0	0	5
07:45 - 08:00	3	0	0	3	4	0	0	4
Hourly Total	9	0	0	9	14	0	0	14
08:00 - 08:15	5	0	0	5	5	0	0	5
08:15 - 08:30	6	0	0	6	6	0	0	6
08:30 - 08:45	5	0	0	5	7	0	0	7
08:45 - 09:00	6	0	0	6	9	0	0	9
Hourly Total	22	0	0	22	27	0	0	27
09:00 - 09:15	4	0	0	4	10	0	0	10
09:15 - 09:30	3	0	0	3	8	0	0	8
09:30 - 09:45	5	0	0	5	11	0	0	11
09:45 - 10:00	2	0	0	2	9	0	0	9
Hourly Total	14	0	0	14	38	0	0	38
10:00 - 10:15	3	0	0	3	12	0	0	12
10:15 - 10:30	5	0	0	5	13	0	0	13
10:30 - 10:45	8	0	0	8	12	0	0	12
10:45 - 11:00	9	0	0	9	15	0	0	15
Hourly Total	25	0	0	25	52	0	0	52
11:00 - 11:15	11	0	0	11	17	0	0	17
11:15 - 11:30	10	0	0	10	13	0	0	13
11:30 - 11:45	13	0	0	13	16	0	0	16
11:45 - 12:00	17	0	0	17	15	0	0	15
Hourly Total	51	0	0	51	61	0	0	61
12:00 - 12:15	16	0	0	16	14	0	0	14
12:15 - 12:30	19	0	0	19	18	0	0	18
12:30 - 12:45	14	0	0	14	16	0	0	16
12:45 - 13:00	15	0	0	15	11	0	0	11
Hourly Total	64	0	0	64	59	0	0	59
13:00 - 13:15	10	0	0	10	10	0	0	10
13:15 - 13:30	12	0	0	12	11	0	0	11
13:30 - 13:45	16	0	0	16	14	0	0	14
13:45 - 14:00	15	0	0	15	13	0	0	13
Hourly Total	53	0	0	53	48	0	0	48
14:00 - 14:15	18	0	0	18	5	0	0	5
14:15 - 14:30	17	0	0	17	6	0	0	6
14:30 - 14:45	14	0	0	14	7	0	0	7
14:45 - 15:00	10	0	0	10	8	0	0	8
Hourly Total	59	0	0	59	26	0	0	26
15:00 - 15:15	6	0	0	6	9	0	0	9
15:15 - 15:30	9	0	0	9	10	0	0	10
15:30 - 15:45	11	0	0	11	14	0	0	14
15:45 - 16:00	10	0	0	10	11	0	0	11
Hourly Total	36	0	0	36	44	0	0	44
16:00 - 16:15	9	0	0	9	7	0	0	7
16:15 - 16:30	12	0	0	12	8	0	0	8
16:30 - 16:45	10	0	0	10	7	0	0	7
16:45 - 17:00	13	0	0	13	11	0	0	11
Hourly Total	44	0	0	44	33	0	0	33
17:00 - 17:15	11	0	0	11	9	0	0	9
17:15 - 17:30	10	0	0	10	8	0	0	8
17:30 - 17:45	12	0	0	12	10	0	0	10
17:45 - 18:00	9	0	0	9	9	0	0	9
Hourly Total	42	0	0	42	36	0	0	36
18:00 - 18:15	5	0	0	5	5	0	0	5
18:15 - 18:30	6	0	0	6	7	0	0	7
18:30 - 18:45	9	0	0	9	8	0	0	8
18:45 - 19:00	10	0	0	10	9	0	0	9
Hourly Total	30	0	0	30	29	0	0	29
TOTAL	449	0	0	449	467	0	0	467

**Smith & Austin
Engineering**

[illegible]

Parking Beat

TIME	ZONE 1	ZONE 2	ZONE 3
07:00	1	0	0
07:15	1	0	0
07:30	1	0	0
07:45	1	0	0
08:00	1	0	0
08:15	1	0	0
08:30	1	0	0
08:45	1	0	0
09:00	1	0	0
09:15	1	0	0
09:30	1	0	0
09:45	1	1	0
10:00	1	0	0
10:15	1	0	0
10:30	1	0	0
10:45	1	0	0
11:00	1	0	0
11:15	1	0	0
11:30	1	0	0
11:45	1	0	0
12:00	1	0	0
12:15	1	0	0
12:30	1	0	0
12:45	1	0	0
13:00	1	1	0
13:15	1	0	0
13:30	1	0	0
13:45	1	0	0
14:00	1	0	0
14:15	0	0	0
14:30	0	0	0
14:45	0	0	0
15:00	0	0	0
15:15	0	0	0
15:30	0	0	0
15:45	0	0	0
16:00	0	0	0
16:15	0	0	0
16:30	0	0	0
16:45	0	0	0
17:00	0	0	0
17:15	0	0	0
17:30	0	0	0
17:45	0	0	0
18:00	0	0	0
18:15	1	0	0
18:30	1	0	1
18:45	1	0	0

[illegible]

Hayling Island, Monday 20th May 2024



St. Mary's Road

	Southwestbound				Northeastbound			
TIME	LIGHT	OGV1	OGV2	TOTAL	LIGHT	OGV1	OGV2	TOTAL
07:00 - 07:15	3	0	0	3	12	0	0	12
07:15 - 07:30	7	0	0	7	13	0	0	13
07:30 - 07:45	10	0	0	10	16	0	0	16
07:45 - 08:00	13	2	0	15	25	0	0	25
Hourly Total	33	2	0	35	66	0	0	66
08:00 - 08:15	20	0	0	20	31	0	0	31
08:15 - 08:30	25	0	0	25	29	0	0	29
08:30 - 08:45	26	0	0	26	27	0	0	27
08:45 - 09:00	20	0	0	20	25	0	0	25
Hourly Total	91	0	0	91	112	0	0	112
09:00 - 09:15	16	0	0	16	18	0	0	18
09:15 - 09:30	15	0	0	15	15	0	0	15
09:30 - 09:45	13	0	0	13	14	0	0	14
09:45 - 10:00	11	0	0	11	15	0	0	15
Hourly Total	55	0	0	55	62	0	0	62
10:00 - 10:15	8	1	0	9	16	0	0	16
10:15 - 10:30	10	0	0	10	13	0	0	13
10:30 - 10:45	11	0	0	11	17	0	0	17
10:45 - 11:00	9	0	0	9	19	0	0	19
Hourly Total	38	1	0	39	65	0	0	65
11:00 - 11:15	10	0	0	10	20	0	0	20
11:15 - 11:30	12	0	0	12	16	0	0	16
11:30 - 11:45	14	0	0	14	15	0	0	15
11:45 - 12:00	15	0	0	15	15	0	0	15
Hourly Total	51	0	0	51	66	0	0	66
12:00 - 12:15	17	0	0	17	12	0	0	12
12:15 - 12:30	15	0	0	15	13	0	0	13
12:30 - 12:45	14	0	0	14	11	0	0	11
12:45 - 13:00	18	0	0	18	9	0	0	9
Hourly Total	64	0	0	64	45	0	0	45
13:00 - 13:15	16	0	0	16	10	0	0	10
13:15 - 13:30	17	0	0	17	15	0	0	15
13:30 - 13:45	18	0	0	18	17	0	0	17
13:45 - 14:00	14	0	0	14	18	0	0	18
Hourly Total	65	0	0	65	60	0	0	60
14:00 - 14:15	15	0	0	15	13	0	0	13
14:15 - 14:30	12	0	0	12	16	1	0	17
14:30 - 14:45	13	0	0	13	19	0	0	19
14:45 - 15:00	13	0	0	13	23	0	0	23
Hourly Total	53	0	0	53	71	1	0	72
15:00 - 15:15	10	0	0	10	24	0	0	24
15:15 - 15:30	14	0	0	14	21	0	0	21
15:30 - 15:45	15	0	0	15	15	0	0	15
15:45 - 16:00	16	0	0	16	18	0	0	18
Hourly Total	55	0	0	55	78	0	0	78
16:00 - 16:15	12	0	0	12	17	0	0	17
16:15 - 16:30	18	0	0	18	16	0	0	16
16:30 - 16:45	17	0	0	17	15	0	0	15
16:45 - 17:00	19	0	0	19	20	0	0	20
Hourly Total	66	0	0	66	68	0	0	68
17:00 - 17:15	23	0	0	23	19	0	0	19
17:15 - 17:30	20	0	0	20	15	0	0	15
17:30 - 17:45	17	0	0	17	11	0	0	11
17:45 - 18:00	16	0	0	16	10	0	0	10
Hourly Total	76	0	0	76	55	0	0	55
18:00 - 18:15	20	0	0	20	9	0	0	9
18:15 - 18:30	18	0	0	18	8	0	0	8
18:30 - 18:45	14	0	0	14	5	0	0	5
18:45 - 19:00	15	0	0	15	3	0	0	3
Hourly Total	67	0	0	67	25	0	0	25
TOTAL	714	3	0	717	773	1	0	774

Smith & Austin
Engineering

All Vehicles	
IN	OUT
1	0
0	0
1	0
0	0
2	0
0	0
1	0
3	0
1	1
5	1
0	1
0	0
0	0
1	0
1	1
0	1
0	1
0	0
1	2
0	0
0	0
0	0
0	0
0	0
0	0
1	0
0	2
1	0
0	1
2	3
1	0
1	0
0	1
3	1
0	0
1	0
0	0
1	2
2	2
0	0
0	1
1	0
0	1
1	2
2	1
0	0
0	1
0	1
2	3
0	2
0	0
0	0
0	1
0	3
0	0
0	1
0	0
0	0
0	1
19	19

Parking Beat

TIME	ZONE 1	ZONE 2	ZONE 3
07:00	1	0	0
07:15	0	0	0
07:30	0	0	1
07:45	0	0	0
08:00	0	0	0
08:15	1	0	0
08:30	0	0	0
08:45	0	0	0
09:00	1	0	0
09:15	0	0	0
09:30	0	1	0
09:45	0	0	0
10:00	0	1	0
10:15	0	0	0
10:30	0	0	0
10:45	0	0	0
11:00	0	0	0
11:15	0	0	0
11:30	0	0	0
11:45	0	0	0
12:00	0	1	0
12:15	0	0	0
12:30	0	0	0
12:45	0	0	0
13:00	0	0	0
13:15	0	0	0
13:30	0	0	0
13:45	0	0	0
14:00	0	0	0
14:15	0	0	0
14:30	1	0	0
14:45	0	0	0
15:00	0	1	0
15:15	0	0	0
15:30	0	0	0
15:45	0	0	0
16:00	0	0	0
16:15	0	0	0
16:30	1	0	0
16:45	0	0	0
17:00	0	0	0
17:15	0	0	0
17:30	0	0	0
17:45	0	0	0
18:00	0	0	0
18:15	0	0	0
18:30	0	1	0
18:45	0	0	0

	NOTES
Zone 1 already parked at 07:00	
Zone 3 dropped off school children	
Zone 1 walked to business	
Zone 1 walked to business	
Zone 2 walked to business	
Zone 2 walked to business	
Zone 2 walked to business	
Zone 1 walked to flats	
Zone 2 walked to business	
Zone 1 walked to flats	
Zone 2 parked	

APPENDIX D

BASE MODEL DEVELOPMENT REPORT (BMDR)

BASE MODEL DEVELOPMENT



SYSTRA

HAYLING ISLAND MICROSIMULATION MODELLING

BASE MODEL DEVELOPMENT

IDENTIFICATION TABLE

Client/Project owner	Havant Borough Council
Project	Hayling Island Microsimulation Modelling
Study	Base Model Development
Type of document	Model Development Report
Date	07/01/2025
Reference number	GB01T23C34_MDR_2
Number of pages	31

APPROVAL

Version	Name		Position	Date	Modifications
1	Author	Becky Windsor	Consultant	21/03/2024	Updated in the context of additional JT Validation.
	Checked by	David Treadgold	Senior Consultant	22/04/2024	
	Approved by	Chris Shaw	Associate	22/04/2024	
2	Author	Becky Windsor	Consultant	08/01/2025	
	Checked by	David Treadgold	Senior Consultant	08/01/2025	
	Approved by	Chris Shaw	Associate	08/01/2025	

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1. INTRODUCTION

1.1 Purpose of Report

- 1.1.1 In 2018 SYSTRA was commissioned by Havant Borough Council (HBC) to develop a Paramics Discovery microsimulation model of Hayling Island in order to examine future year Local Plan impacts. Following examination and rejection of the LDP, HBC commissioned SYSTRA to review and recalibrate the existing microsimulation model to support the upcoming refresh of the LDP. This was largely driven by a requirement for HBC to look at the impact of local plan development on the road network during peak tourist traffic conditions on Hayling Island.
- 1.1.2 In order to assess the traffic impacts during peak tourist season, a summer model was developed based on surveys carried out during this time and in addition, an update of the neutral month base model was required in advance of the Local Plan modelling.
- 1.1.3 This report will discuss the development of the summer Hayling Island model and the update of the neutral month Hayling Island model, and provide details of the calibration and validation.

2. DATA

2.1 Existing Data

- 2.1.1 A number of datasets were made available for the purpose of developing the model. These datasets are listed below.
 - Bluetooth Journey Time data extracted from C2-Cloud Traffic Data at Drakewell Ltd
 - TomTom Journey Time and Vehicle Speeds data
 - Traffic signal timings for relevant junctions
 - Demand data from the Strategic model *Solent Transport's Sub-Regional Transport Model (SRTM)*

2.2 Manual Classified Count Data

- 2.2.1 Manual Classified Count (MCC) surveys were undertaken by Streetwise Services on Thursday 17 November 2022 from 07:00 – 19:00 at 37 junctions in the study area for the neutral model development. MCC surveys were undertaken by MHC Traffic on 5 August 2022 from 07:00 – 20:00 at 41 junctions in the study area for the summer model development. Data was collected in 5 minute intervals and classified as follows:
 - Car
 - LGV
 - OGV1
 - OGV2
 - PSV (public bus and private coach)

- 2.2.2 Surveys were undertaken by video, with footage provided along with the count data. The MCC locations are shown in Figure 1. Note that locations 36 and 41 are outside of the model scope and therefore not included. The list of locations is included in Table 1.

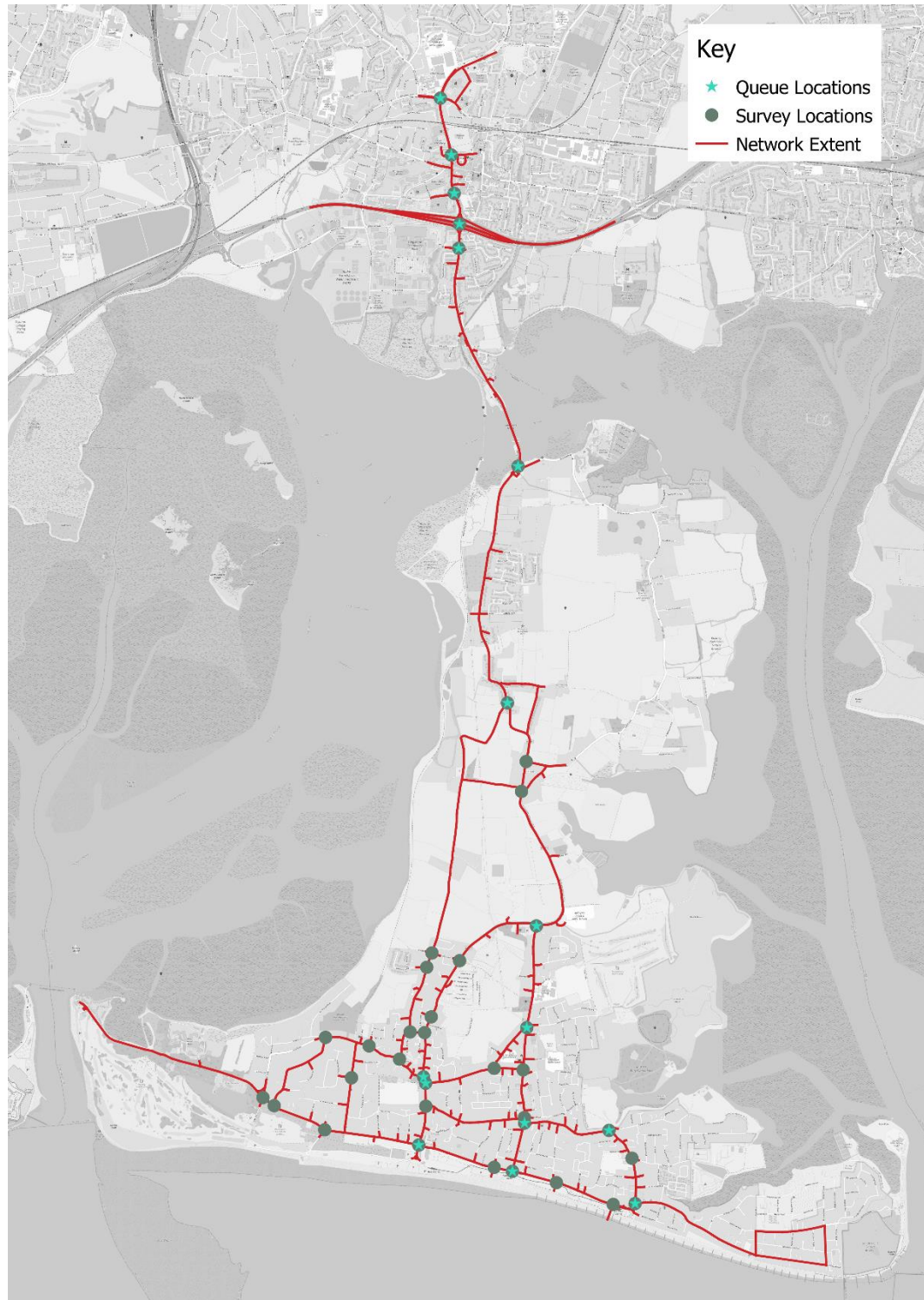


Figure 1. MCC and Queue Length Survey Locations

Site	Description	Type
1	A3023 Havant Road / Technology Park	3 Arm Priority Junction
2	A3023 Langstone Road / Northney Road / A3023 Havant Road	3 Arm Priority Junction
3	A3023 Havant Road / West Lane	3 Arm Priority Junction
4	A3023 Havant Road / Copse Lane	3 Arm Priority Junction
5	A3023 Havant Road / Yew Tree Road	3 Arm Priority Junction
6	A3023 Havant Road / Church Road / A3023 Manor Road	3 Arm Priority Roundabout
7	B2149 Petersfield Road / Elmleigh Road / Park Road North / B2149 New Road	4 Arm Priority Roundabout
8	B2149 Park Road North / Elm Lane / B2149 Park Road South / Park Way	4 Arm Signalised Junction
9	B2149 Park Road / Solent Road	3 Arm Signalised Junction
10	B2149 Park Road South / A27 Havant Bypass / A3023 Langstone Road	4 Arm Signalised Roundabout
11	West Lane / Brights Lane / Woodlands Lane	4 Arm Priority Junction
12	A3023 Manor Road / Higworth Lane / Brights Lane	4 Arm Priority Junction
13	A3023 Manor Road / Local Access / Newtown Lane	4 Arm Priority Junction
14	West Lane / Newtown Lane	3 Arm Priority Junction
15	West Lane / Station Road	3 Arm Priority Junction
16	Sinah Lane / St Catherines Road	3 Arm Priority Junction
17	St Catherines Road / Sea Front	3 Arm Priority Junction
18	Sinah Lane / Sea Front / Links Lane / Ferry Road	4 Arm Priority Junction
19	A3023 Beach Road / Sea Front / Local Access	4 Arm Priority Roundabout
20	A3023 Beach Road / Hollow Lane	3 Arm Priority Junction
21	A3023 Manor Road / St Mary's Road / A3023 Beach Road	3 Arm Priority Junction
22	A3023 Manor Road / Station Road	3 Arm Priority Junction
23	St Mary's Road / Cherrywood Gardens	3 Arm Priority Junction
24	Church Road / Elm Grove / St Mary's Road	3 Arm Priority Junction
25	Elm Grove / Cherrywood Gardens	3 Arm Priority Junction
26	Elm Grove / Mengham Road / Sea Grove Avenue / Hollow Lane	4 Arm Priority Junction
27	Sea Grove Avenue / Selsmore Road	3 Arm Priority Junction
28	Sea Grove Avenue / Sea Front	3 Arm Priority Junction
29	Rails Lane / Southwood Road	3 Arm Priority Junction
30	Fishery Lane / Rails Lane	3 Arm Priority Junction
31	Salterns Lane / Rails Lane / Selsmore Road	3 Arm Priority Junction
32	Sea Front / West Beach Car Park Access	3 Arm Priority Junction
33	Chichester Avenue / Sea Front / Chichester Avenue Car Park Access	4 Arm Priority Junction
34	Sea Front / Bound Lane Car Park Access	3 Arm Priority Junction
35	Sea Front / Eastoke Car Park Access	3 Arm Priority Junction
37	Staunton Avenue / St Thomas Avenue	3 Arm Priority Junction
38	Billy Road / Station Road	3 Arm Priority Junction
39	Manor Road / Gilbert Mead	3 Arm Priority Junction
40	West Lane / Saltmarsh Lane	3 Arm Priority Junction

Table 1. MCC Locations (Queue Survey Location in Bold)

- 2.2.3 The majority of locations were surveyed in both the neutral month and summer month periods. Sites 32-35 represent the 4 carparks on the Seafront and were only surveyed during the summer survey period.

2.3 Queue Length Surveys

- 2.3.1 Queue length data was collected at 16 of the MCC locations, on the same dates. Surveys were undertaken by Streetwise Services and MHC Traffic for the neutral and summer periods, respectively. The maximum queue length occurring in vehicles was collected in 5 minute intervals from 07:00 – 19:00 for the neutral month and 07:00 – 20:00 for the summer month, for each relevant junction approach.
- 2.3.2 Surveys were undertaken by video, with the video files provided along with the data. The locations of the queue length surveys are indicated by bold text in Table 1 above.

2.4 Journey Time Routes

- 2.4.1 Journey time routes were derived from Bluetooth data supplied by HBC and supplemented with TomTom Data to provide a dataset for routes consistent with those adopted for the original 2018 model development.
- 2.4.2 Bluetooth data was supplied by HBC for August & September 2022 and for November 2023. Issues with the Bluetooth counters prevented the provision of Bluetooth Data for November 2022, so November 2023 has been provided as a representative of the Neutral Month survey period. Bluetooth data was collected using the 7 permanent count sites south of the A27 Interchange with Langstone Road.
- 2.4.3 TomTom data was provided to cover the survey dates, specifically Friday 5th August 2022, and Tuesday-Thursdays of November 2022. The TomTom data coverage spans key corridors through the South of Hayling Island, between the Havant Road/ West Lane Junction and the Junctions with Seafront. The TomTom Data coverage is shown in Figure 2.

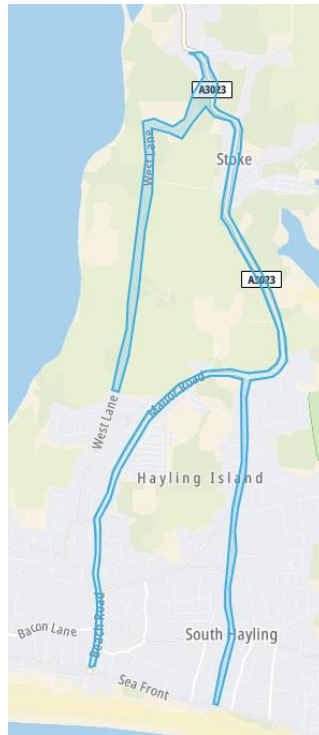


Figure 2. TomTom Data Coverage

2.4.4 5 routes have been defined and detailed below, effectively matching the coverage of journey time routes used in the 2018 model development :

- Route 1: Route between Seafront/Beach Road Roundabout and Manor Road/ Havant Road Roundabout, via Manor Road.
- Route 2: Route between Seafront/Seagrove Avenue Junction and Manor Road/ Havant Road Roundabout, via Church Road.
- Route 3: Route between Havant Road North of Mill Rythe School and Havant Road/ West Lane Junction, via Havant Road.
- Route 4: Route between West Lane/ Brights Lane Junction and Havant Road/ West Lane Junction, via West Lane.
- Route 5: Route between Havant Road/ West Lane Junction and Langstone Road/ Technology Park Junction, via Langstone Road.

2.4.5 Routes are shown in Figure 3. Observed Journey times for Routes 1 & 2 were gathered using TomTom data, journey times for Routes 3-5 were gathered from Bluetooth data.

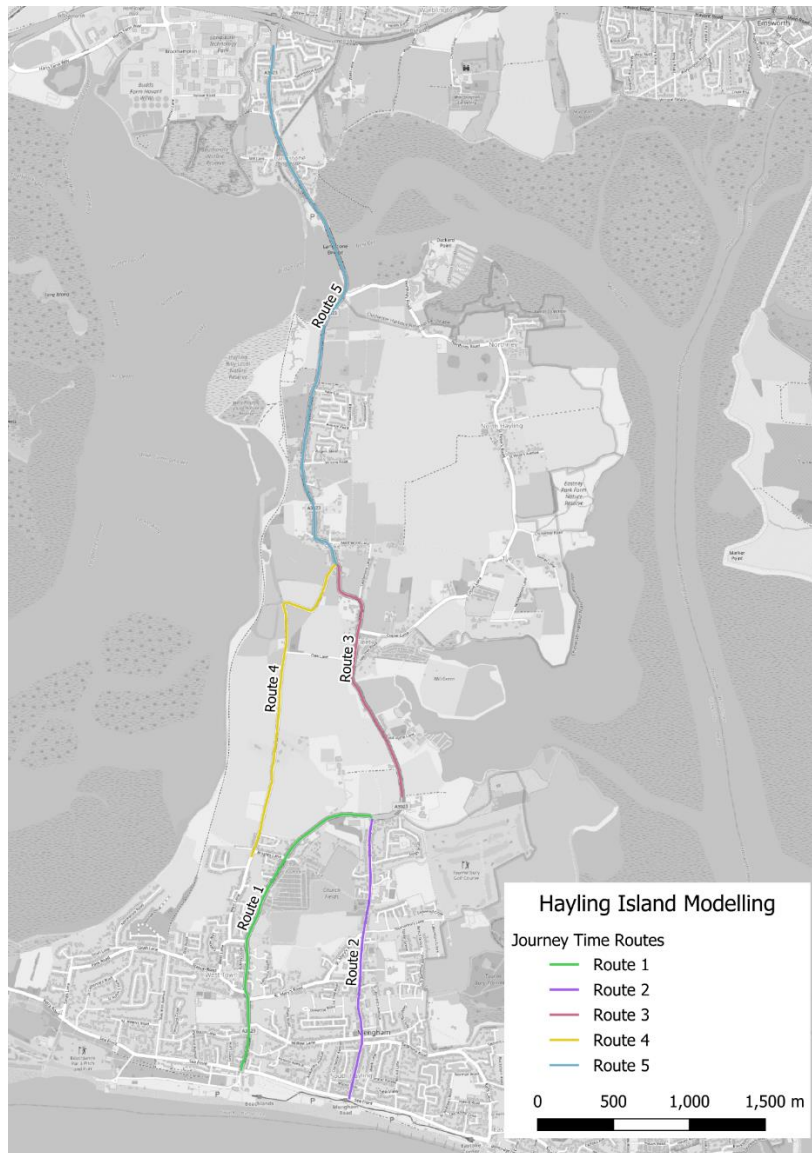


Figure 3. Journey Time Routes

- 2.4.6 Using the Bluetooth data provided, observed journey times were established by using data from the relevant individual days where available. In the Summer Month, observed journey times were taken from the data provided for Friday 5th August 2022 which was the day of the traffic surveys. In the Neutral Month an average was derived from Tuesday-Thursday dates in the November 2023 Bluetooth Data. The dates included in this average are 1st-2nd, 7th-9th, 14th-16th, 21st-23rd, and 28th-30th November 2023.
- 2.4.7 Route 1 and Route 2 are not covered by the Bluetooth counters, and so TomTom Data was used to establish observed journey times. In the Summer Month, observed journey times were taken from the data provided for Friday 5th August 2022 which was the day of the traffic surveys. In the Neutral Month an average was derived from Tuesday-Thursday dates in November 2022, which is consistent with the survey dates. The dates included in this average are 1st-3rd, 8th-10th, 15th-17th, 22nd-24th, 29th-30th November 2023.

3. NETWORK DEVELOPMENT

- 3.1.1 The model network covers the Hayling Island study area as described in the original *Hayling Island Model Development Report November 2018*, with some additional junctions. The model has been built and calibrated in Paramics Discovery 26.0.2.
- 3.1.2 The model has been developed to reflect both normal weekday traffic conditions for the neutral model, and normal peak tourist traffic conditions for the summer model.
- 3.1.3 Unless specifically noted, network development is consistent between the Neutral month and Summer month models.
- 3.1.4 The model covers the A3023 through Hayling Island, Church Road/Elm Grove, West Lane, Sea Front, and Ferry Road. On the mainland in Havant is the A3023 Langstone Road/Park Road North and the interchange with the A27.
- 3.1.5 Both the Summer and Neutral month models reflect three time periods.
- 3.1.6 The neutral model represents:
- AM Weekday Period 07:00 – 10:00
 - IP Weekday Period 10:00 – 16:00
 - PM Weekday Period 16:00 – 19:00
- 3.1.7 The summer model contains:
- AM Weekday Period 07:00 – 10:00
 - IP Weekday Period 10:00 – 16:00
 - PM Weekday Period 16:00 – 20:00
- 3.1.8 The additions to the 2018 model resulting in the 2022 model extents are detailed below:
- St Thomas Avenue/Staunton Avenue priority junction;
 - Billy Road/Station Road priority junction, and;
 - Eastoke Corner Car Park access from Sea Front.
- 3.1.9 The model study area is shown in Figure 4.

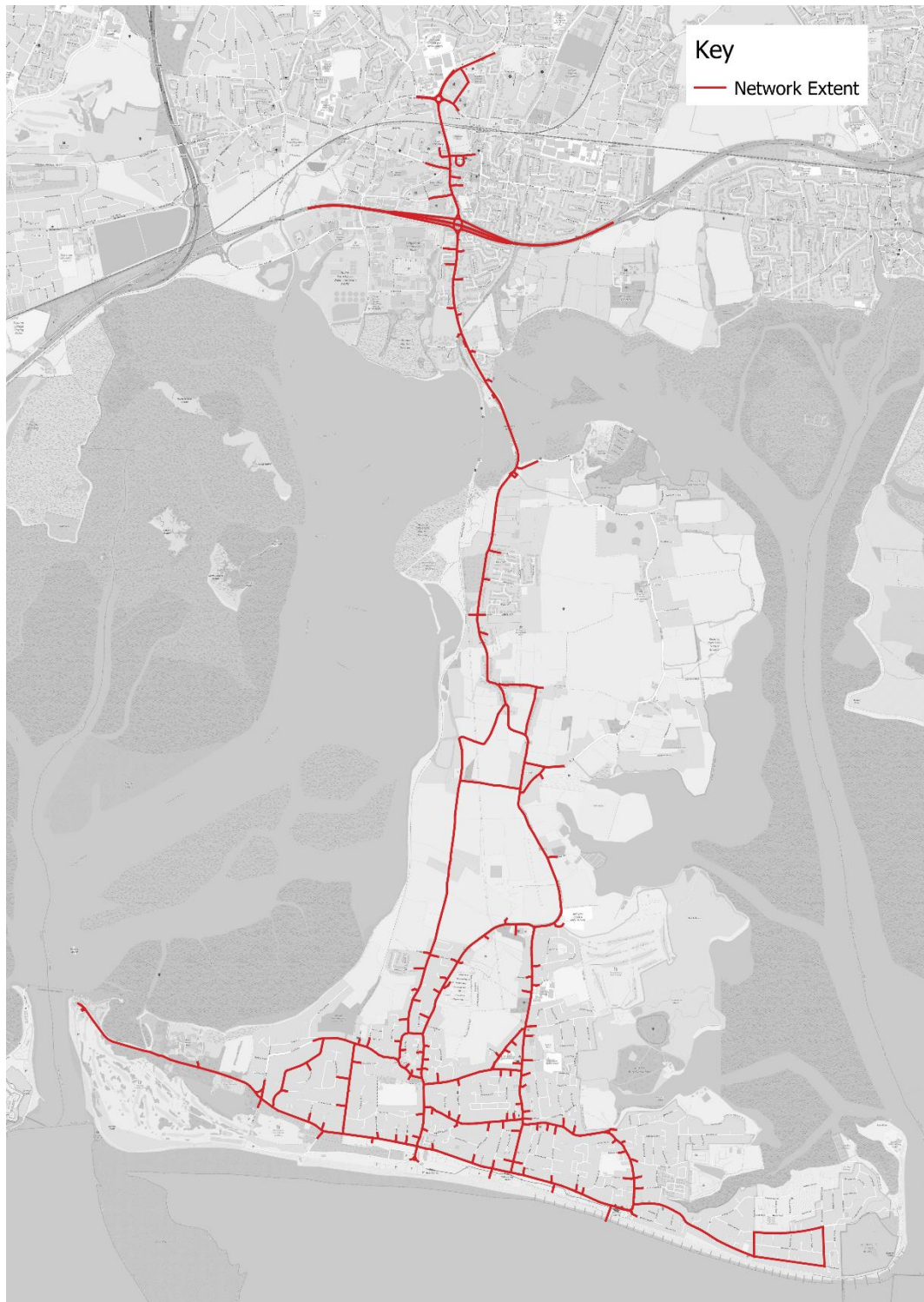


Figure 4. Hayling Island Model Coverage

- 3.1.10 SYSTRA was supplied with background mapping of the existing road layout for the study area. This was used to code the basic network in terms of road alignments, lane widths, give way lines, etc.

3.2 Model Parameters

- 3.2.1 A number of model parameters were coded in line with SYSTRA's Microsimulation Consultancy Good Practice Guide.
- 3.2.2 Visibility set to 30m on all relevant approaches to priority junctions.
- 3.2.3 Look through applied to all short links adjacent to give way locations.
- 3.2.4 Gap acceptance defaults of Lane Merge - 4 seconds; Lane Cross - 4 seconds; Path Cross - 3 seconds, were applied at all locations with the exception of 6 locations:
- 1 Path Cross on right turn into Langstone Technology Park from Langstone Road
 - 2 Lane Merge, 2 Lane Cross, and 2 Path Cross on Southbrook Road at Langstone Road/Southbrook Road junction.
 - 1 Path Cross on right turn into Langstone Road from Mill Lane
 - 1 Path Cross on right turn into Avenue Road from Havant Road
 - 1 Path Cross on right turn into Victoria Road from Havant Road
 - 1 Path Cross on right turn into West Lane from Havant Road
- 3.2.5 Link headway factors were adjusted from 1 at the following locations:
- 0.6 applied to the on-slip merge links on the A27.
 - 0.6 applied on Park Road North northbound north of Elm Lane.
 - 4.0 applied on the southbound merge at Langstone Technology Park.
 - 2.0 applied between Langstone Technology Park and Langstone Sailing club and between New Cut and West Lane, in the neutral month model.
 - 2.2 applied between Langstone Technology Park and Langstone Sailing Club and between New Cut and West Lane, in the neutral month model.
- 3.2.6 Where headways were increased, this was to reflect flow breakdown from courtesy behaviour observed on the video survey, or to reflect network "friction" on sections of the network.
- 3.2.7 Clear exit adherence was applied to:
- Mainline movements between Southbrook Avenue and West Lane to reflect courtesy behaviour at the minor junctions in these sections observed on the video survey
 - The end of the eastbound slip road on the A27 junction to reflect the yellow box on the ground
- 3.2.8 The signposting distance was shortened at node 663 (Langstone Technology Park junction) to 52m, so southbound merging behaviour occurs after the bus layby.
- 3.2.9 In the model between 12:00 and 14:00, heavy congestion southbound along Langstone Road south of the Langstone Technology Park prevents northbound vehicles from turning right onto Southbrook Road.
- 3.2.10 Because of the slow moving southbound traffic in the interpeak period, the model shows vehicles queueing to turn right block back out of the filter lane and generate large queues that are not observed to occur in the surveys.

- 3.2.11 It is assumed along this corridor between Havant and Hayling Island, vehicles adhere to courtesy let in behaviour during high congestion, allowing right turning vehicles to turn across through the slow moving southbound traffic.
- 3.2.12 To prevent this queueing that disrupts northbound traffic at the Southbrook Road junction, scripting has been used at Langstone Road/Southbrook Road junction to allow vehicles through to mimic this courtesy let in behaviour. Scripting at this location momentarily changes the coded priorities at this junction and allows the model to represent periodic courtesy give way in the context of congestion.
- 3.2.13 Throughout each modelled period, queueing that fills the entire right turn lane at this location triggers a short change in priorities at the junction.
- 3.2.14 To represent irregular stopping/slowing (e.g. delivery vans, cyclists etc) and courtesy vehicle behaviour, the incidents feature has been utilised. Incidents allow the user to define a number of stops that will occur throughout a specified period at a given location in the model. Users can define the location, period stops occur, number of occurrences, and the min/max stop duration for the stops.
- 3.2.15 Incidents were applied in seven locations southbound in the summer model, to reflect flow breakdown from courtesy behaviour, slow moving vehicles and stopped vehicles along the mainline corridor. These incidents are located at a number of the side roads between Langstone Technology Park and West Lane.
- 3.2.16 For Langstone Road on the mainland, 5 locations have incidents implemented and were coded as follows:
 - Between 10:15:00 and 12:59:59 each incident stops for 20-45 seconds and this occurs 20 times within this period.
 - Between 10:15:00 and 12:59:59 each incident stops for 20 seconds and this occurs 15 times within this period.
- 3.2.17 For Havant Road on the island, 3 locations had incidents implemented and were coded as follows:
 - Between 11:00:00 and 11:59:59 each incident stops for 30-40 seconds and this occurs 15-20 times within this period.
 - Between 13:00:00 and 17:59:59 each incident stops for 30-40 seconds and this occurs 90 times within this period.
- 3.2.18 From survey footage along this corridor at other junctions, such as the Langstone Technology Park, Northney Road/Havant Road, and Havant Road/West Lane junctions, it is seen that there are regular occurrences of courtesy vehicle behaviour during these intervals. It is assumed this behaviour happens at other locations where survey footage is not available.

3.3 Vehicle Types

- 3.3.1 Five vehicle types are represented in the model:

- Car
- Light Goods Vehicle (LGV)

- Other Goods Vehicle 1 (OGV1)
- Other Goods Vehicle 2 (OGV2)
- Single Decker Bus – Fixed Route

3.3.2 Interrogation of the survey data and comparison with the junction count video footage showed that the majority of surveyed Public Service Vehicles (PSVs) were the fixed route Stagecoach buses and not private coaches. To avoid double counting of PSVs, coaches are not represented in the model.

3.3.3 Each vehicle type has individual dynamics, namely maximum speed and acceleration, which can be edited. During the calibration process no changes were made to the default settings. The top speeds applied to all vehicle types in the model are as follows:

- | | |
|---------------------|--------|
| ○ Car | 100mph |
| ○ LGV | 80mph |
| ○ OGV1 | 65mph |
| ○ OGV2 | 65mph |
| ○ Single Decker Bus | 65mph |

3.3.4 The summer model has an additional 'Leisure Vehicle' vehicle type which is a LGV vehicle variant with a reduced acceleration and deceleration. This vehicle type represents recreational vehicles such as motor homes etc.

Link Characteristics

3.3.5 Routing within a Paramics model is foremost dependant on whether the roads on which a vehicle could travel are classified as either 'major' or 'minor'. Figure 5 details the major and minor links.

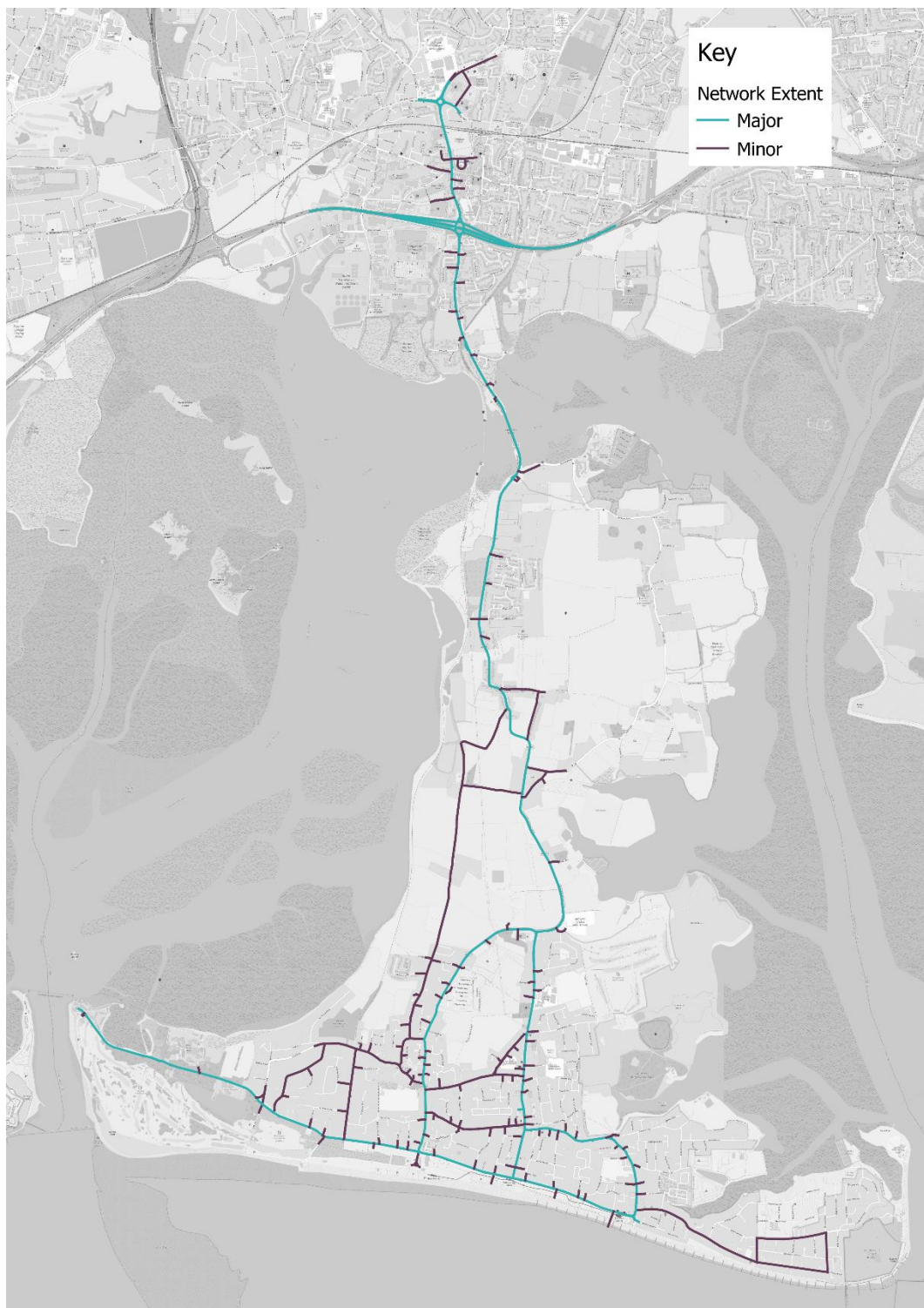


Figure 5. Link Hierarchy

3.4 Routing Parameters

- 3.4.1 A Generalised Cost Equation (GCE) is used to determine the perceived cost of available routes within the model. Paramics Discovery uses the following GCE as a base cost for links:

$$Cost = (A * t) + (B * d) + (C * P)$$

Where:

- A is the time coefficient,
- B is the distance coefficient,
- C is the toll cost coefficient in minutes per monetary cost,
- t is the link travel time in minutes,
- d is the link length in miles,
- and P is the price of the toll in monetary cost

- 3.4.2 The route choice in the study area is not affected by any toll costs and therefore a toll cost coefficient was not applied to the GCE for this model.

- 3.4.3 For this study the GCE parameters were taken from the Strategic model (SRTM) which is being used to support the development of the base model and will also be utilised within the forecasting process. The Distance values were in kilometres, so the below values were converted to miles for use in the Paramics model. The GCE parameters were also supplied at a periodic level, AM, IP and PM, so GCE values were converted to a daily value by averaging across the three periods.

- 3.4.4 Individual vehicle types were given individual time and distance coefficients, detailed below:

○ Car:	A= 1.00, B=0.640
○ Car Petrol	A= 1.00, B=0.640
○ LGV:	A= 1.00, B= 0.980
○ Leisure:	A= 1.00, B= 0.980
○ OGV1:	A= 1.00, B= 3.481
○ OGV2:	A= 1.00, B= 3.481

Perturbation

- 3.4.5 Perturbation varies a vehicle's perception of the best route through the network. Perturbation of 5% was applied to all vehicle types, in line with best practice.

Dynamic Feedback

- 3.4.6 Dynamic feedback has been enabled in the model, which allows familiar drivers to account for delays in their routing considerations. A feedback interval of 2 minutes and a feedback factor of 0.5 have been applied, in line with best practice.

Familiarity

- 3.4.7 The familiarity level affects the route a vehicle takes through the network, in conjunction with the Major and Minor road hierarchy. Familiar drivers see no difference in attractiveness between a major or minor road; unfamiliar drivers perceive a minor road to be less attractive than a major road. Familiarity is not strictly the “proportion of local drivers” but the proportion of drivers who will choose from all available routes (rat-runs or less attractive routes). These settings are consistent with those adopted in other models of a similar nature and are detailed below:

- Car, Car Petrol, LGV, and Leisure Vehicle 60%
- OGV1 and OGV2 10%

Cost Factors

- 3.4.8 Cost Factors, which are a multiplier of the basic route cost used to further refine the relative attractiveness of any given route, over and above the major/minor definition, were applied on particular links to better reflect local routing patterns.

- West Lane was increased to 1.3 due to its narrow width and tight/blind corners to discourage some traffic using it as an alternative route to head north/south as opposed to using the A3023.
- The portion of West Lane and Newtown Road between Station Road and Manor Road was increased to 1.6 to discourage modelled traffic using it as a rat run.
- Daw Lane was increased to 1.3 to deter traffic from the north/south using it and to keep to West Lane.
- St Catherines Road was increased to 1.5 to discourage traffic using it as a rat run to the west of the island.
- Selsmore Road/Rails Lane was decreased to 0.9 to encourage some traffic from the east to use it as opposed to the Sea Front.
- Hollow Lane was increased to 1.2 to discourage traffic using it as a rat run instead of Sea Front.

Defined Routes

- 3.4.9 Defined Routes are used in Paramics Discovery to prevent unrealistic route choice resulting from route choice perturbation. 30 defined routes were included in the model to prevent vehicles opting for unrealistic routes.
- 3.4.10 Typically this would be where vehicles are observed needlessly routing via a neighbouring roundabout to then U-turn or where vehicles deviate from a road to then return via a side street.

3.5 Hazard Overrides

- 3.5.1 Hazard overrides in Paramics Discovery allow models to amend inappropriate lane choice behaviour on approach to network hazards and reflect observed behaviour.
- 3.5.2 10 Hazard overrides were implemented to improve lane choice at the following locations:
 - Southbound trips through the A27 interchange roundabout to ensure appropriate lane choice approaching and circulating through the roundabout;
 - Trips on the A27 eastbound off-slip to ensure appropriate lane choice approaching and circulating through the roundabout;

3.6 Public Transport Coding

- 3.6.1 Paramics Discovery represents fixed route buses through the definition of network bus stops, service routes, service timetables and bus dwell times.
- 3.6.2 The location of the bus stops in the model area was obtained from the NAPTAN dataset. Google Maps and Google Street View were used to check all the bus stops in the model and correct if necessary.
- 3.6.3 Service routes and associated timetables were extracted from the Traveline dataset and coded into the model.
- 3.6.4 Buses are coded within the model to dwell at stops for a minimum stop time of 10s and a maximum stop time of 25s for all services at all bus stops.
- 3.6.5 The bus stop on the northbound carriageway on Langstone Bridge was omitted from the PT services. After consideration of the stop location and expected use it was assumed to not be a stop regularly called on and as such is not stopped at by the passing services. For similar reasons dwell times at the stop northbound outside the Ship Inn on Langstone Road were amended to spread between 0s and 25s to represent infrequent stopping at this location.

3.7 Signalised Junctions

- 3.7.1 Signal timing data was provided by HBC for all signal junctions in the study area. This information was used to define the initial signal timings and intergreens for input into the model. However, during the model calibration these timings were refined to reflect observed timings from the traffic survey videos where required.

3.8 School Patrol Crossings

- 3.8.1 HBC provided a list of active school patrol crossing locations throughout the study area and their corresponding operational times. Only two locations were within the model boundary: Elm Grove at the Library and Havant Road adjacent to Mill Rythe Junior School (Sunshine Corner). For each location, a pedestrian phase has been coded to be called in the neutral month model for a minimum of once every 40s and a maximum of 80s, with a minimum duration of 10s and a maximum duration of 15s, while the crossing is in operation (08:15 – 09:00/15:00 – 15:45 and 08:10 – 09:10/14:45 – 15:45 respectively).

- 3.8.2 In the context of survey footage more detailed crossing durations and intervals were calculated and applied, specifically at the Library at Elm Grove.
- 3.8.1 Between 08:15-09:00, crossing intervals were set to 26 seconds and activated every 40 seconds. Between 15:00-15:45, crossing intervals were set to 16 seconds and activated every 42 seconds. These updated timings are implemented in the Neutral Month model only.

4. TRIP MATRIX DEVELOPMENT

4.1 Background

- 4.1.1 This section outlines the data sources and methodology employed in the development of the traffic demand matrices for the neutral month model and the summer month model.
- 4.1.2 The trip matrix for all zone to zone movements was developed using a Matrix Estimation (ME) process. This involved developing a prior (starter) matrix, a routeing file and a survey file for each modelled period for use in the Discovery built in ME module.

4.2 Prior Matrix Demand Development

- 4.2.1 A prior demand matrix was derived by using the matrices from the original modelling of Hayling Island produced in 2018. The development of these matrices is detailed in *Hayling Island Microsimulation Modelling Base Model Development Report GB01T17H90_MDR_2, 2018*.
- 4.2.2 Traffic demand in the model is reflected with three matrix levels;
- Matrix 1: Car
 - Matrix 2: LGV
 - Matrix 3: OGV1 and OGV2
- 4.2.3 The split between OGV1 and OGV2 in Matrix 3 was calculated using surveyed count data. Table 2 & Table 3 show the proportions for the neutral and summer models respectively.

MATRIX	VEHICLE TYPE	AM	IP	PM
Matrix 1	Car	100%	100%	100%
Matrix 2	LGV	100%	100%	100%
Matrix 3	OGV 1	81%	82%	84%
	OGV 2	19%	18%	16%

Table 2. Vehicle Type Proportions Neutral Month Model

MATRIX	VEHICLE TYPE	AM	IP	PM
Matrix 1	Car	100%	100%	100%
Matrix 2	LGV	100%	75%	100%
	Leisure Vehicle	0%	25%	0%
Matrix 3	OGV 1	81%	82%	84%
	OGV 2	19%	18%	16%

Table 3. Vehicle Type Proportions Summer Month Model

- 4.2.4 With the inclusions detailed below the prior matrix comprises of 59 zones that represents detailed origins and destinations throughout the modelled area.

4.3 Lidl Trips

- 4.3.1 A Lidl supermarket opened on Hayling Island subsequent to the develop of the original model in 2018. No survey in 2022 took place at the junction access, so the trip generation was taken from the transport assessment submitted in the planning application. The Lidl trips were assumed to be contained on the island, and further only to residential zones on the island. The trips were distributed equally to these remaining zones, and added to each relevant period.

4.4 Car Park Trips

- 4.4.1 In the August 2022 surveys, four car park accesses along Sea Front were included. In order to distribute these trips across the summer month model, it was assumed that as these car parks are predominantly used by tourists, 70% of the trips arrive from off Hayling Island. These trips were further assumed to be split equally between the east and west arms of the A27. Therefore it was assumed that 30% of trips to the car parks were arriving from Hayling Island. The Beachlands Car Park, which is represented by zone 18, was used as a proxy for distributing these on-island trips.
- 4.4.2 The neutral month model did not include the car parks in the surveys, and therefore have no trips coming from these zones, on the assumption that trips to and from these out of tourist season would be negligible.

4.5 Matrix Estimation

- 4.5.1 When the prior matrix was developed as far as possible, it was applied to the Paramics model to generate routeing information for each period. The output of this process consists of a set of routing PIJA files which estimate the proportion of trips travelling from points A to B that are theoretically assigned to each link and turn in the model.

- 4.5.2 The routing files, survey information (turn count totals by period and matrix level), and prior were applied to the ME module in Paramics. ME was carried out with five iterations and the new demand files generated were assigned to the model and calibration checks undertaken.
- 4.5.3 The ME process continued, with further refinement to the prior and new routing information collected each time. The ME process was deemed complete once satisfactory demand files were achieved for each period, based on consideration of the calibration checks.
- 4.5.4 The final matrix totals for each matrix level in each period are shown in Table 4 and Table 5 for the neutral month model and the summer month model, respectively.

MATRIX	AM	IP	PM
Matrix 1	24,336	60,699	39,580
Matrix 2	3,928	7,622	4,491
Matrix 3	1,314	2,365	1,114
Total	29,579	70,686	45,184

Table 4. Neutral Month Model - Matrix Totals (Vehicles)

MATRIX	AM	IP	PM
Matrix 1	26,630	55,788	31,171
Matrix 2	4,082	7,342	3,728
Matrix 3	1,567	2,795	1,026
Total	32,279	65,926	35,926

Table 5. Summer Month Model - Matrix Totals (Vehicles)

4.6 Traffic Demand Profiling

- 4.6.1 Paramics Discovery uses profiled demand controlling the release of vehicles onto the network through each time period. Profiles may be specified by vehicle type for individual movements or general movements to/from zones. Each profile specifies the proportion of the total demand for the associated movements to be released in each 5 minute interval.
- 4.6.2 The observed turn count data was used to develop 99 profiles for the summer month model, and 87 profiles for the neutral month model. Profiles were developed for 'all vehicles' and for each modelled period.
- 4.6.3 The breakdown of the 33 profiles, for each time period, developed is as follows:

- 24 'From Zone' profiles
- 1 general 'mainland' profile
- 1 general 'island' profile
- 2 junction specific profiles for Brights Lane
- 4 profiles for the car parks in the summer month model only
- 1 profile for the Lidl

4.6.4 A general profile is calculated using the average of all surveyed turn counts in each 5 minute interval. General profiles were assigned to zones that are not directly related to a surveyed junction or where data is not available.

5. MODEL CALIBRATION AND VALIDATION

5.1 Introduction

- 5.1.1 The calibration process involves checking the network description, demand matrices, model inputs, and parameters to ensure the model achieves a satisfactory representation of traffic flows and conditions.
- 5.1.2 To determine whether the calibration is acceptable it is important to ensure that the model is fit for the purpose of the study, that decision makers understand the quality of the information with which they are working, and that inherent uncertainties are taken into account when reaching decisions.
- 5.1.3 The calibration of the model was undertaken by comparing modelled turn counts to the observed data set.
- 5.1.4 The guidelines set out in WebTAG Unit M3.1 and the Design Manual for Roads and Bridges (DMRB), Vol. 12 Section 2 Part 1) have been used to undertake the calibration of the model. These guidelines are based on the comparison of modelled data to an independent set of data not used to develop the model, however, all available turn count data was used during the model calibration process, therefore, comparisons of the modelled turn counts cannot be considered a completely independent check. Comparisons are presented to indicate the degree of calibration of the model.

5.2 Base Model Calibration

- 5.2.1 Default stop line positions were altered where relevant throughout the model to better represent vehicle behaviour through junctions or along roads with on-street parking. Comparisons were made between survey videos provided and the model to ensure that the general behaviour of traffic reflected on site conditions.
- 5.2.2 Initial journey time comparisons showed that, in general, most modelled journey times were fast compared to those observed. This is not surprising, given the nature of the road network in the study area, as there are many network features such as parked vehicles, driveways and narrow hedged rural roads whose particular behavioural aspects are not explicitly modelled. In consideration of this, link speeds across the model were lowered by 10% from the signed speed limit to better reflect observed journey times, apart from on 70mph roads.

- 5.2.3 The observed vehicle speeds along Langstone Road and Havant Road are lower in the summer period than observed in the neutral month, even taking congestion levels into consideration.
- 5.2.4 The 'Leisure Vehicle' vehicle type, representing tourist trips in recreational vehicles and motorhomes, were coded to drive slower along the Langstone Road and Havant Road corridor. This is to represent tourist traffic travelling below the speed limit due to unfamiliarity with the network etc.
- 5.2.5 TomTom Data was analysed to understand the relationship between signposted speed limits and vehicle target speeds. The following observations were made:
- While signposted as 40mph, vehicle speeds along West Lane were consistent with the speeds attained along the portion signposted as 30mph
 - While signposted as 40mph, vehicle speeds along Church Road were consistent with the speeds attained along the portion signposted as 30mph
 - While signposted as 30mph, vehicle speeds along Church Road and Manor Road were recorded in uncongested hours to typically span between 24-27mph.
- 5.2.6 In the context of these observations the following adjustments to the models were made:
- The portions of West Lane and Church Road signposted as 40mph were coded as though the signposted speeds were 30mph. In addition to this, the links along the two routes to Seafront, via Church Road and Manor Road, were coded with a speed distribution that better reflected the target speeds observed of 24-27mph.
 - It was noted from the available TomTom data that vehicles rarely met or exceeded the speed limits and that typical target speeds were seen to be lower than anticipated. For this reason the 40mph portion of Havant Road and Langstone Road have been coded to replicate a distribution of target speeds between 31-37mph.

5.3 Turn Count Calibration

- 5.3.1 Detailed comparisons of observed and modelled turn counts occurred throughout the model development process. Comparisons were made on both a periodic and hourly basis to ensure both the total demand and variation within the modelled time periods were robust.

- 5.3.2 The GEH statistic has been used to compare modelled and observed flows and is defined as:

$$GEH = \sqrt{\frac{2(M - O)^2}{M + O}}$$

Where M = modelled flow, and O = observed flow.

- 5.3.3 The guidelines set out in *WebTAG* and *DMRB* state that 85% of hourly flows, in this case turn counts, should have a GEH of less than 5 in order for a model to be considered acceptable.
- 5.3.4 Table 6 and Table 7 below show the percentage of turn counts that achieve a GEH value of less than 3, 5 (the guidance value) and 7 in the AM, IP, and PM periods for the neutral month and summer month models respectively. In total, 256 turn count comparisons were made in the neutral month model, and 286 comparisons were made in the summer month model.

Period	Time	Eligible Comparisons	%GEH<3	%GEH<5	%GEH<7
AM	07:00 - 08:00	256	77.3%	96.5%	99.6%
	08:00 - 09:00	256	85.2%	96.1%	99.6%
	09:00 - 10:00	256	85.5%	96.5%	100.0%
IP	10:00 - 11:00	256	90.6%	97.7%	99.6%
	11:00 - 12:00	256	84.8%	97.3%	100.0%
	12:00 - 13:00	256	88.3%	96.9%	99.6%
	13:00 - 14:00	256	89.8%	98.4%	99.6%
	14:00 - 15:00	256	88.3%	98.4%	99.2%
	15:00 - 16:00	256	82.8%	96.5%	99.6%
PM	16:00 - 17:00	256	89.8%	97.7%	99.6%
	17:00 - 18:00	256	85.5%	98.0%	99.6%
	18:00 - 19:00	256	87.5%	98.0%	99.2%

Table 6. Neutral Month - Turn Count Comparison

- 5.3.5 Table 6 shows that in all modelled hours, the neutral month model meets the *WebTAG* and *DMRB* criteria, with over 96% of the eligible comparisons having a GEH less than 5, and over 77% of the eligible comparisons having a GEH less than 3.

Period	Time	Eligible Comparisons	%GEH<3	%GEH<5	%GEH<7
AM	07:00 - 08:00	286	85.7%	95.8%	99.7%
	08:00 - 09:00	286	90.2%	99.0%	99.7%
	09:00 - 10:00	286	82.2%	97.2%	100.0%
IP	10:00 - 11:00	286	80.4%	96.9%	99.3%
	11:00 - 12:00	286	87.4%	95.5%	99.7%
	12:00 - 13:00	286	79.4%	94.8%	98.6%
	13:00 - 14:00	286	86.0%	97.2%	99.3%
	14:00 - 15:00	286	87.1%	96.5%	99.0%
	15:00 - 16:00	286	81.1%	93.7%	99.3%
PM	16:00 - 17:00	286	88.5%	97.2%	99.3%
	17:00 - 18:00	286	84.3%	96.5%	99.3%
	18:00 - 19:00	286	87.1%	95.5%	97.9%
	19:00 - 20:00	286	84.3%	95.1%	97.9%

Table 7. Summer Month - Turn Count Comparison

- 5.3.6 Table 7 shows that in all modelled hours, the summer month model meets the *WebTAG* and *DMRB* criteria, with over 93% of the eligible comparisons having a GEH less than 5, and over 79% of the eligible comparisons having a GEH less than 3.

5.4 Journey Time Validation

- 5.4.1 Journey time routes as per the observed routes were coded into the model, as per Figure 3. The model records journey times for vehicles completing these routes.
- 5.4.2 This allows for an independent data validation between observed and modelled journey times. Comparison of the modelled journey times against the observed dataset has been made based on guidelines in *WebTAG* and *DMRB*. The criteria states that modelled journey times must be within 15% and 1 minute of the observed time.

5.4.3 During the study, following initial model development and calibration and validation, the *WebTAG* journey time criteria changed. The criteria set out by *Webtag* was previously to be within the greater of 15% or 1 minute of the observed time. The journey time comparisons are detailed in Table 8, Table 9, Table 10, and Table 11, with differences highlighted in green passing the criteria.

	Route 1						Route 2					
	NB			SB			NB			SB		
	Modelled	TomTom	Diff	Modelled	TomTom	Diff	Modelled	TomTom	Diff	Modelled	TomTom	Diff
07:00	186	179	7	187	191	-4	167	166	2	168	175	-6
08:00	191	183	8	183	191	-8	277	260	18	190	221	-31
09:00	189	183	6	182	184	-3	166	173	-7	171	180	-9
10:00	186	182	4	184	191	-7	168	180	-12	175	187	-12
11:00	187	182	5	187	191	-4	167	183	-16	175	196	-21
12:00	184	184	0	186	190	-4	166	181	-14	173	188	-15
13:00	184	176	8	188	190	-2	167	179	-12	174	182	-8
14:00	186	180	6	186	194	-9	168	190	-21	178	206	-29
15:00	186	188	-2	187	191	-5	173	201	-28	182	229	-46
16:00	183	186	-2	188	199	-11	170	179	-9	178	188	-10
17:00	183	192	-9	185	184	1	165	179	-15	175	182	-7
18:00	182	193	-11	185	186	0	163	163	0	169	165	4

Table 8. Neutral Month Model – TomTom Journey Time Comparison

	Route 1						Route 2					
	NB			SB			NB			SB		
	Modelled	Bluetooth	Diff	Modelled	Bluetooth	Diff	Modelled	Bluetooth	Diff	Modelled	Bluetooth	Diff
07:00	183	171	12	184	161	23	163	146	17	166	156	10
08:00	183	187	-4	182	195	-12	165	158	7	170	170	0
09:00	189	184	5	182	196	-14	168	182	-14	175	182	-6
10:00	189	198	-9	187	208	-21	171	197	-26	181	196	-15
11:00	186	194	-8	186	206	-19	170	219	-49	181	194	-13
12:00	189	200	-11	187	208	-21	170	178	-9	181	206	-25
13:00	187	204	-16	186	202	-16	169	180	-11	181	192	-11
14:00	193	196	-3	188	205	-18	169	181	-12	184	190	-7
15:00	189	176	13	190	212	-23	171	180	-9	183	192	-9
16:00	184	177	8	184	190	-6	168	183	-15	180	193	-13
17:00	187	186	1	186	200	-14	167	173	-6	181	183	-2
18:00	184	171	13	188	181	7	166	162	4	176	174	2
19:00	180	182	-1	180	178	2	164	162	1	172	169	3

Table 9. Summer Month Model – TomTom Journey Time Comparison

	Route 3						Route 4					
	NB			SB			NB			SB		
	Modelled	Bluetooth	Diff	Modelled	Bluetooth	Diff	Modelled	Bluetooth	Diff	Modelled	Bluetooth	Diff
07:00	141	137	4	146	137	10	187	180	7	184	174	11
08:00	140	140	0	144	137	6	188	176	12	186	183	3
09:00	140	146	-5	147	143	5	187	187	0	184	195	-11
10:00	141	151	-10	146	141	5	185	212	-27	184	206	-22
11:00	141	148	-8	149	142	7	185	212	-27	184	185	-1
12:00	140	147	-7	149	140	9	185	198	-14	184	182	2
13:00	140	143	-3	150	140	10	184	189	-4	184	184	-1
14:00	142	142	1	149	142	8	185	194	-8	184	200	-16
15:00	143	145	-2	151	143	8	186	189	-3	184	187	-3
16:00	146	147	-1	151	158	-7	186	177	8	184	186	-2
17:00	139	144	-5	149	151	-2	184	195	-11	183	179	4
18:00	138	137	1	147	138	9	183	191	-8	182	185	-3

	Route 5					
	NB			SB		
	Modelled	Bluetooth	Diff	Modelled	Bluetooth	Diff
07:00	276	272	3	271	254	17
08:00	296	269	26	277	255	22
09:00	278	268	10	275	260	15
10:00	276	282	-6	275	262	14
11:00	274	272	2	275	260	15
12:00	273	267	6	278	262	16
13:00	271	266	5	275	259	16
14:00	272	272	0	277	264	13
15:00	278	269	9	278	270	8
16:00	288	282	6	294	329	-35
17:00	269	266	3	281	288	-7
18:00	264	256	8	272	258	13

Table 10. Neutral Month Model – Bluetooth Journey Time Comparison

	Route 3						Route 4					
	NB			SB			NB			SB		
	Modelled	Bluetooth	Diff	Modelled	Bluetooth	Diff	Modelled	Bluetooth	Diff	Modelled	Bluetooth	Diff
07:00	139	128	11	144	126	18	185	176	9	183	169	14
08:00	138	140	-2	145	130	15	186	168	18	185	242	-57
09:00	141	149	-8	146	148	-2	191	192	-1	186	182	4
10:00	144	175	-31	147	155	-8	188	205	-17	186	179	7
11:00	145	152	-7	148	151	-3	187	177	10	185	175	10
12:00	145	147	-2	149	148	1	187	178	9	185	179	6
13:00	145	147	-3	148	153	-5	187	175	12	185	175	10
14:00	148	150	-2	149	152	-3	189	176	13	186	183	3
15:00	149	159	-10	149	153	-4	191	172	19	186	174	12
16:00	147	155	-8	149	149	-1	187	168	19	185	170	15
17:00	148	146	2	147	148	-1	186	183	3	185	161	24
18:00	146	135	11	147	139	8	184	162	22	184	186	-2
19:00	139	131	8	144	137	7	184	265	-81	183	168	15

	Route 5					
	NB			SB		
	Modelled	Bluetooth	Diff	Modelled	Bluetooth	Diff
07:00	267	251	16	268	241	27
08:00	273	270	3	270	256	14
09:00	284	284	0	276	278	-2
10:00	318	351	-33	399	454	-55
11:00	313	324	-11	472	564	-92
12:00	301	300	1	440	465	-25
13:00	331	329	2	539	468	71
14:00	338	353	-15	502	581	-79
15:00	431	427	4	490	510	-20
16:00	323	376	-53	525	478	47
17:00	350	289	61	549	401	148
18:00	296	274	22	299	266	33
19:00	269	262	7	272	248	24

Table 11. Summer Month Model – Bluetooth Journey Time Comparison

- 5.4.4 Generally Journey Times modelled reflect the observed journey times well. It is noted that in the context of the updated tighter journey time validation criteria a number of hours in the model have journey times that do not meet the newer criteria but are within a minute of the observed journey times, or within 15% where this is greater than 1 minute, which would have met in the context of the previous journey time criteria. This is true of routes 1-4 in all hours and for all but a couple of hours along Route 5.
- 5.4.5 The Neutral Month journey time comparisons show that there is 1 comparison that does not meet the newer criteria, Route 2 Southbound at 15:00-16:00. Although this does not meet the more restrictive criteria it is worth noting that this journey time comparison would be sufficient under the previous criteria. In this instance the modelled journey times are 46 seconds faster, which is 20% but within a minute of the observed journey times.
- 5.4.6 In the Summer Month comparisons there are some hours that do not meet the criteria however in most cases these differences can be rationalised. For the Summer month modelling, comparisons have been made against a single day and as such the observations are subject to impact from singular events.
- 5.4.7 For Route 2 Northbound there is a difference between modelled and observed that doesn't meet the current criteria between 11:00-12:00. Checking the available survey footage an incident was observed which impeded northbound traffic and required vehicles to give way to oncoming traffic for a large portion of the hour and in turn affected the observed journey times. Given this incident and the observed impact on journey times the modelled journey times are expected to have matched where this incident hadn't occurred on the day of survey.
- 5.4.8 For Route 3 Northbound modelled journey times between 10:00-11:00 are 31 seconds faster than the observed journey times. Whilst this would have been sufficient under previous criteria the modelled journey times are 5 seconds faster than the new criteria would require. It is noted that although this does not meet the tighter journey time validation criteria this would have been well within prior criteria.
- 5.4.9 For Route 4 there are 2 hours for which the modelled journey times do not match with the observed, southbound between 08:00-09:00 and northbound between 19:00-20:00. Looking at the observed journey times in the specified hour and adjacent hours a considerable increase in these hours in the Bluetooth data was noted. For this route TomTom data was also available for part of the route. A sense check of the data showed that while this is observed in the Bluetooth data it was not reflected in the TomTom data. Given this discrepancy between the two data sets it is believed that the Bluetooth data for these hours are anomalous and not likely representative of realistic journey times.
- 5.4.10 While Route 5 journey times do not all meet criteria in all hours it is noted that the maximum times observed and modelled are consistent for the middle of the day and PM period where failures are noted. A number of the failures also fall just out with the 60 second criteria. The observed data is clearly relatively "peaky" and subject to localised incidents (stopped vehicles blocking carriageway, blocking right turners etc) over and above the impacts of the changes in traffic flow. To meet these criteria more detailed time specific adjustments could be made to match journey times on this route such as introducing specific individual incidents to the model to match those observed in survey videos, etc., however it is felt that this would be overly prescriptive in matching to this single day, and limit the use of the model in a predictive

capacity. Given that the maximum times observed in each time period are being broadly matched, albeit not in the correct hours, the model is clearly reflecting the worst case conditions observed in the summer on this route well in general, and provides a robust platform moving forwards to examine the impacts of any proposals.

5.5 Queue Length Comparison

- 5.5.1 There is no set criteria against which queue lengths can be validated due to the subjectivity of measuring queue lengths during surveys. There were 16 locations for which queue length data was analysed. Comparisons for these surveyed junctions of observed versus modelled queue lengths are available to view within the accompanying spreadsheets (*Hayling Island neutral month model queue comparison.xlsx* and *Hayling Island summer month model queue comparison.xlsx*). The results of the comparisons showed in the majority of cases the model corresponds well to the surveyed queue lengths.

6. SUMMARY

6.1 Summary

- 6.1.1 SYSTRA has updated the Paramics Discovery microsimulation model of Hayling Island previously developed in 2018 into a neutral month model, and created a summer month model in order to represent seasonal tourist traffic. The purpose of the models is to provide a platform for the testing of future Local Plan developments in the area.
- 6.1.2 Both models represent three time periods; AM 07:00 – 10:00, IP 10:00 – 16:00, and PM 16:00 – 19:00 for the neutral month model and PM 16:00 – 20:00 for the summer month model.
- 6.1.3 Traffic surveys were undertaken in August and November 2022. This data was utilised to develop the models.
- 6.1.4 Traffic demands for the models have been developed based on sub area matrices provided from the wide area SRTM, and refined using the survey dataset.
- 6.1.5 Both models have been calibrated based on WebTAG and DMRB guidance and the Microsimulation Consultancy Good Practice Guide.
- 6.1.6 Following the initial modelling further model calibration was undertaken to improve the robustness of the journey times throughout the model and in the context of these changes the updated models are seen to be well calibrated and fit for the purpose of testing developments within the model area.
- 6.1.7 Both models reflect the available count data very well in all periods. They meet the WebTAG and DMRB criteria on most journey time paths and the models were calibrated to provide a realistic representation of queueing, routing and vehicle behaviour on the network as observed during the survey programme.

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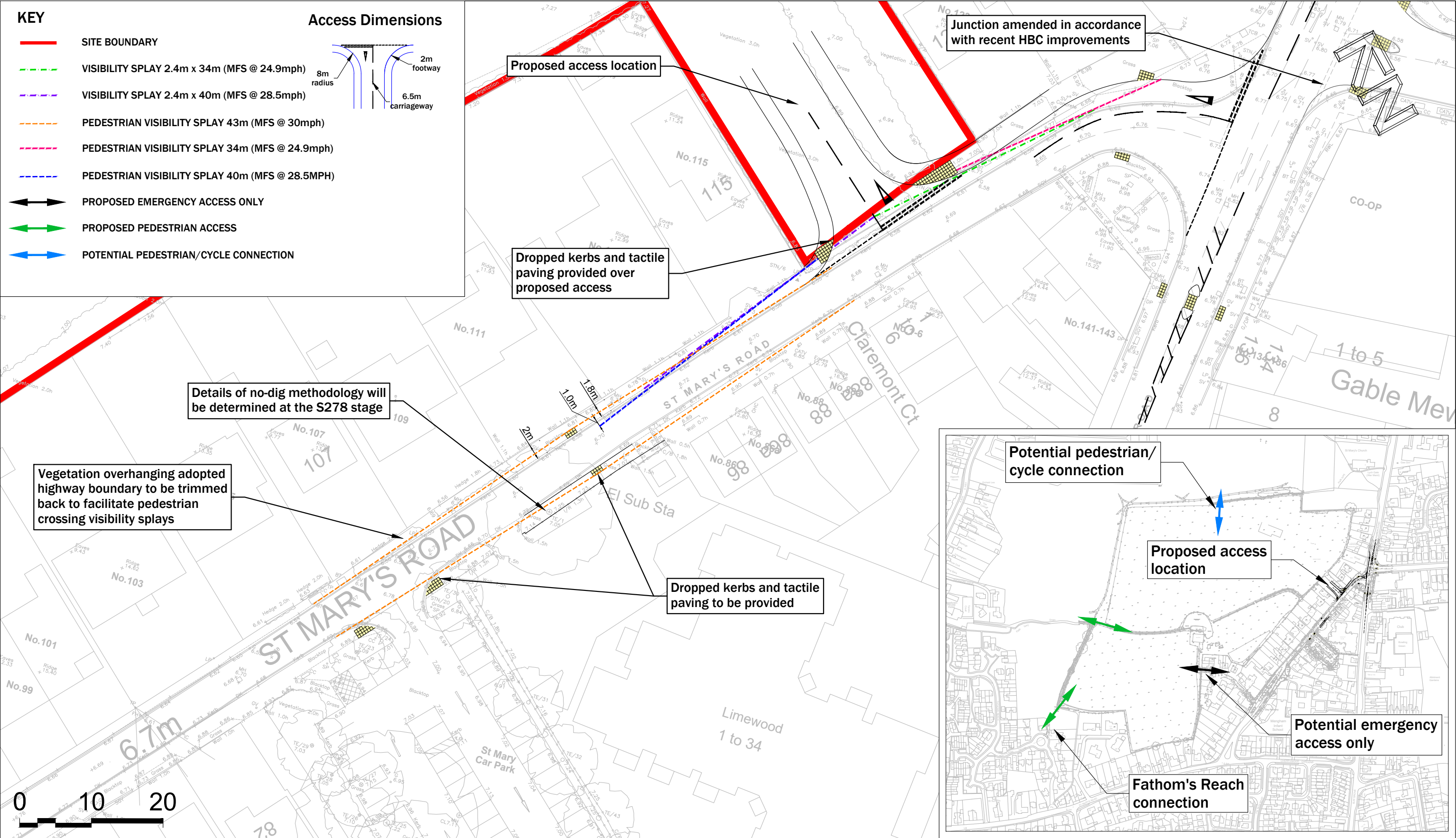
North America:

Little Falls, Los Angeles, Montreal, New-York, Philadelphia,
Washington

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APPENDIX E

ACCESS DRAWINGS



9 Hurricane Court
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I H G F D C B A	24.07.24 11.12.23 15.12.22 21.11.22 10.08.22 23.11.21 09.11.21 31.08.21 02.07.21	VB RO VB VB VB VB VB VB VB	UPDATES TO FOOTWAY GEOMETRY AMENDED UPDATES FOLLOWING ARB ADVICE UPDATES FOLLOWING RSA COMMENTS CHANGES FOLLOWING HAMPSHIRE COMMENTS MINOR AMENDMENTS UPDATED MAPPING/ EMERGENCY ACCESS MINOR AMENDMENTS TO VISIBILITY CHANGES FOLLOWING RSA COMMENTS
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Rev	Date	By	Revision notes
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Status

FINAL

Project

ST MARY'S ROAD, HAYLING ISLAND

Title

PROPOSED ACCESS ARRANGEMENT

Drawn by
VB

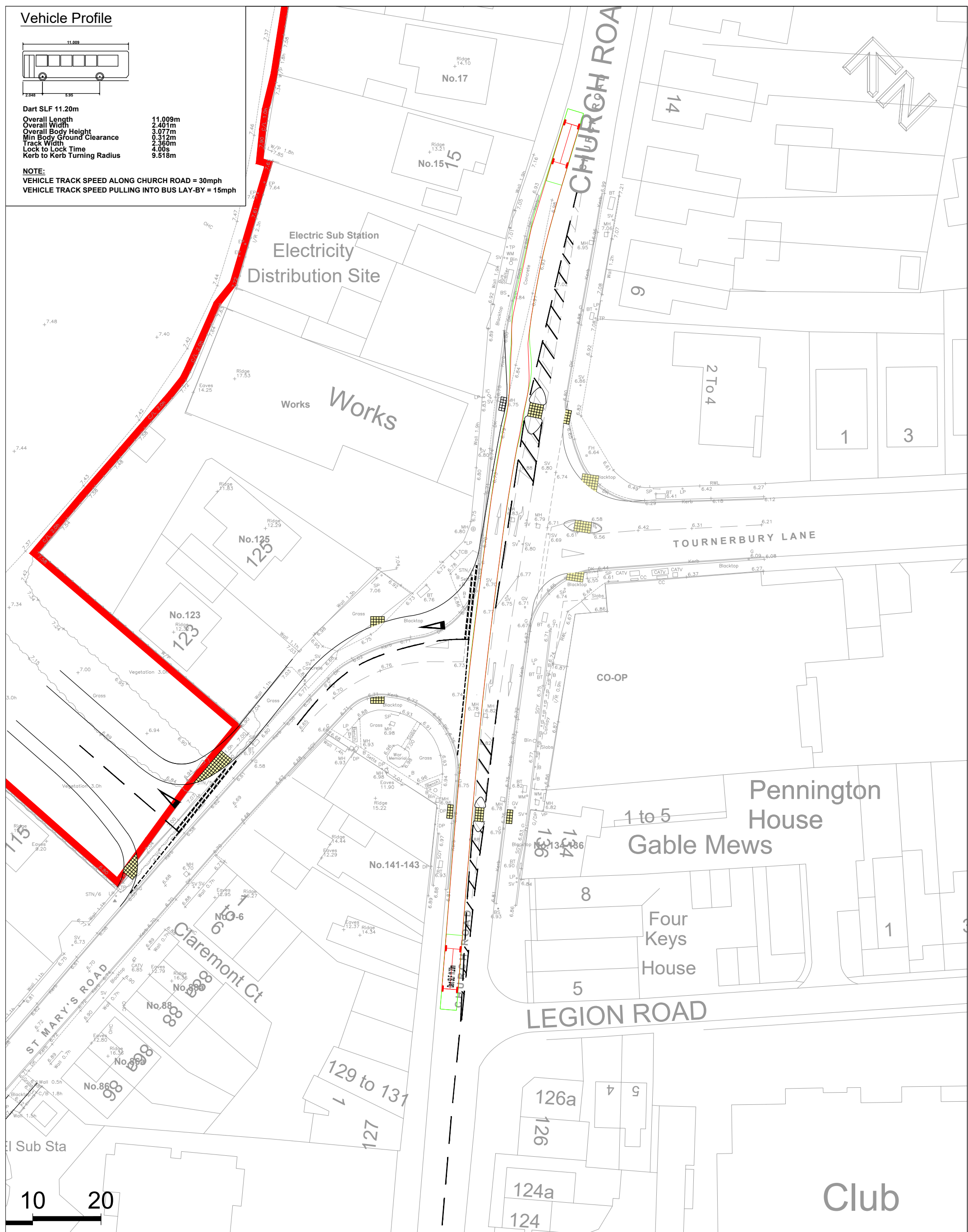
Issue date
17 JUN 2021

Scale(s)

1:500 @ A3

Drawing No

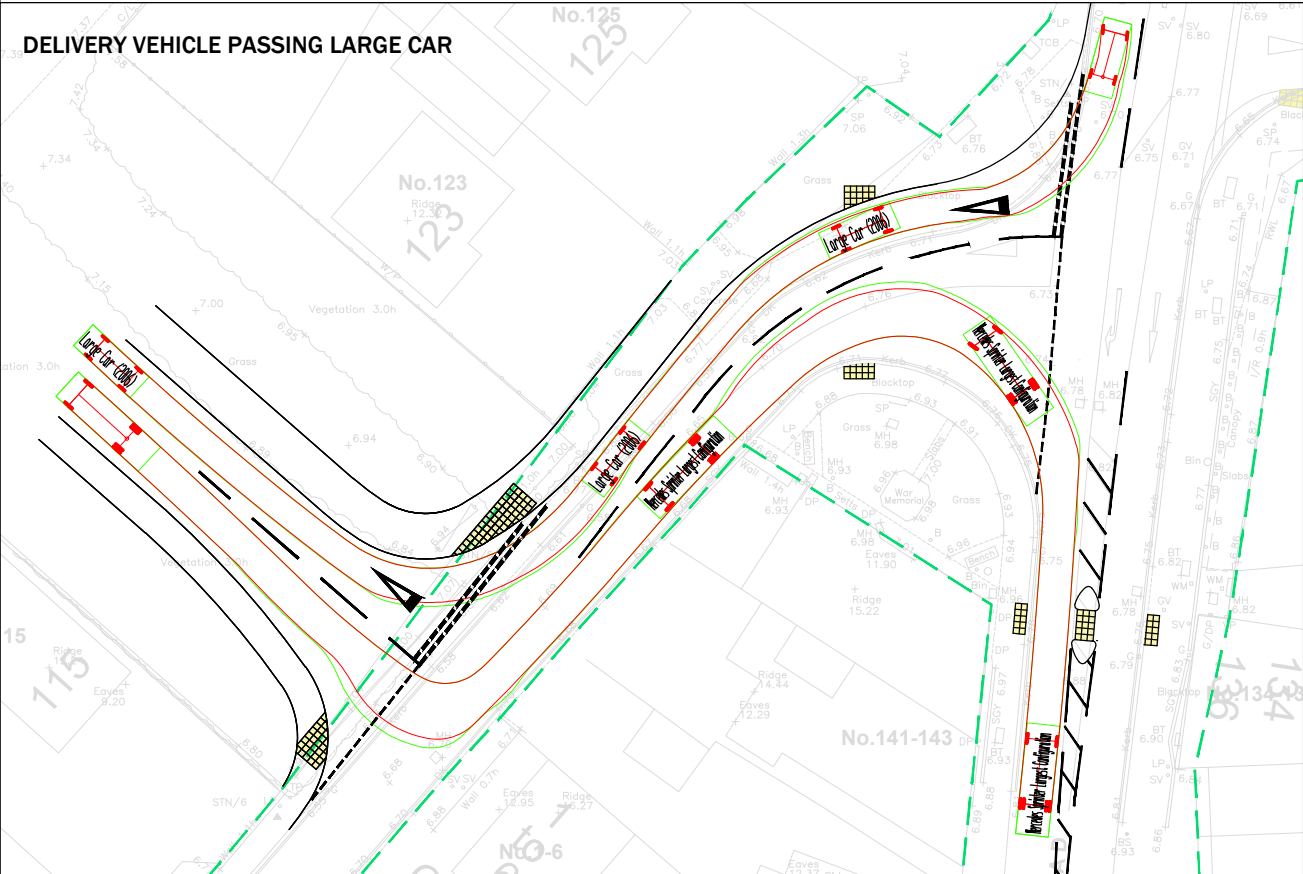
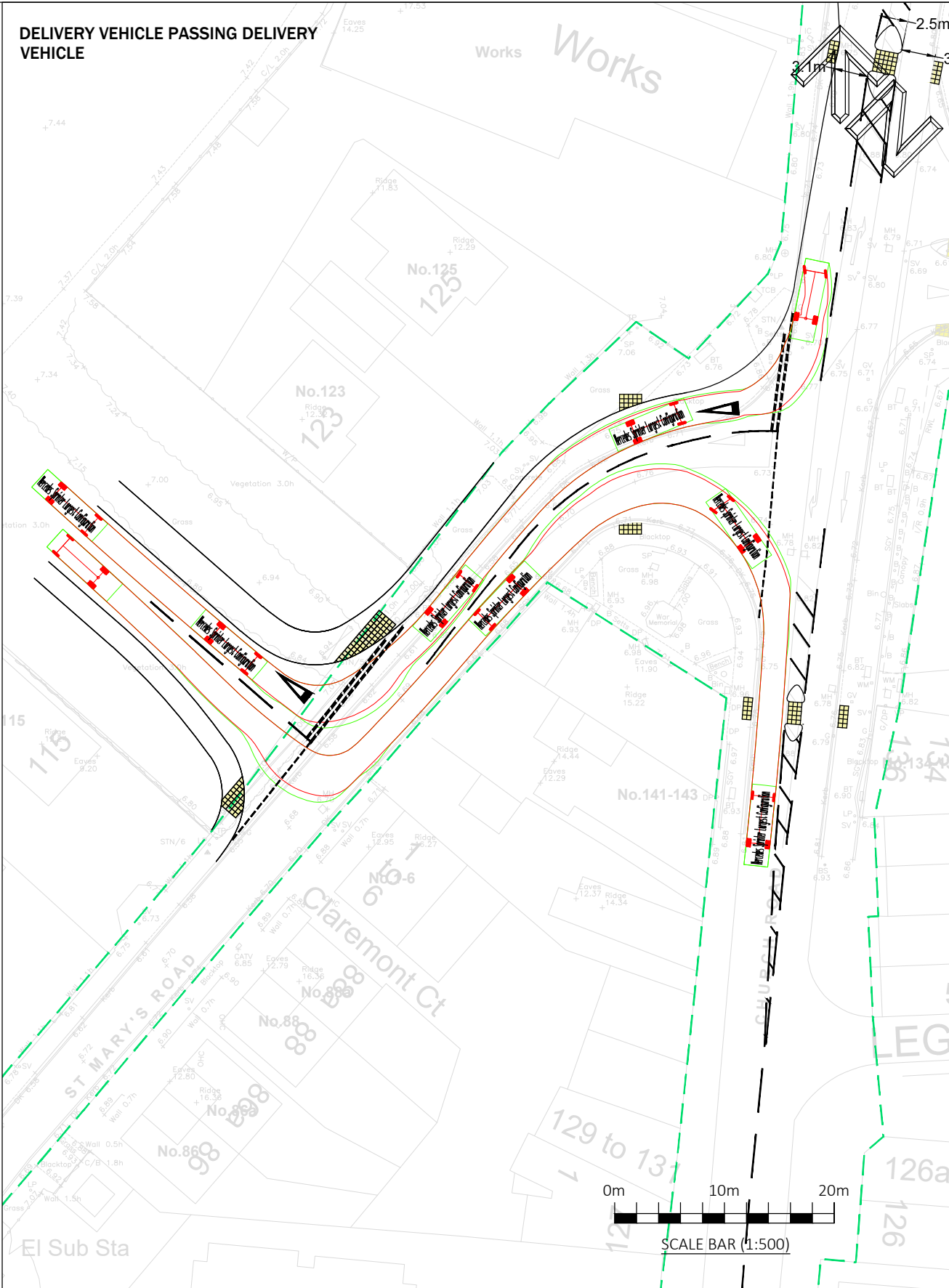
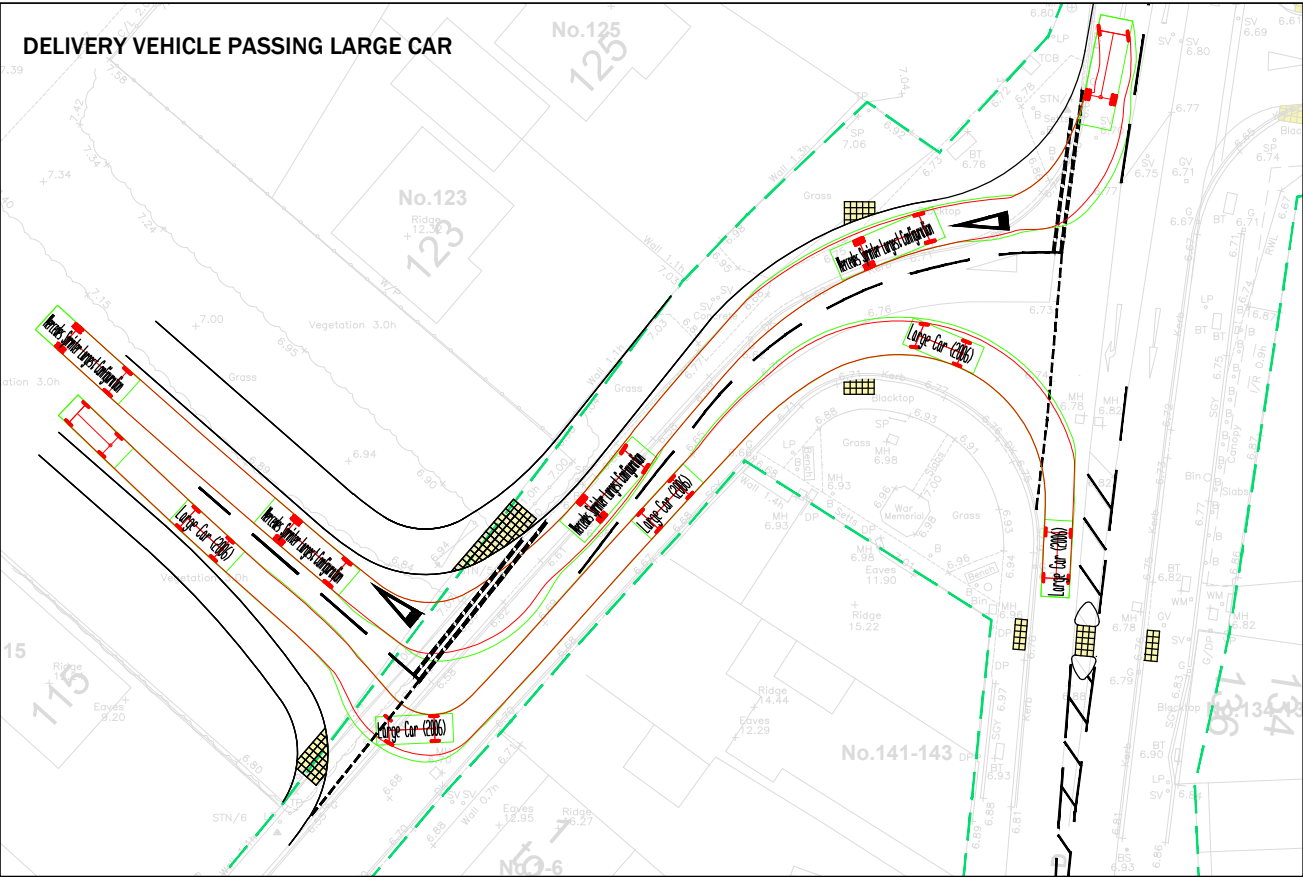
P21033-001I



E	24.07.24	VB	DRAWING PACKAGE UPDATES
D	15.12.22	VB	UPDATES FOLLOWING RSA COMMENTS & ARB ADVICE
C	23.08.22	VB	CHANGES FOLLOWING HAMPSHIRE COMMENTS
B	18.11.21	VB	SCALE ADDED TO DRAWING
A	02.07.21	VB	CHANGES FOLLOWING RSA COMMENTS
Rev	Date	By	Revision notes
Status INFORMATION			

Project	ST MARY'S ROAD, HAYLING ISLAND
Title	SWEPT PATH ANALYSIS (11.2m BUS)

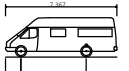
Drawn by VB	Issue date 17 JUN 2021
Scale(s) 1:500 @A3	
Drawing No P21033-007E	



Vehicle model used in swept path analysis



Large Car (2006)
Overall Length 5.079m
Overall Width 1.872m
Overall Body Height 1.525m
Min Body Ground Clearance 0.310m
Max Track Width 1.831m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 5.900m



Mercedes Sprinter Largest Configuration
Overall Length 5.967m
Overall Width 2.175m
Overall Body Height 2.598m
Min Body Ground Clearance 0.371m
Track Width 2.175m
Lock to lock time 4.00s
Wall to Wall Turning Radius 7.600m

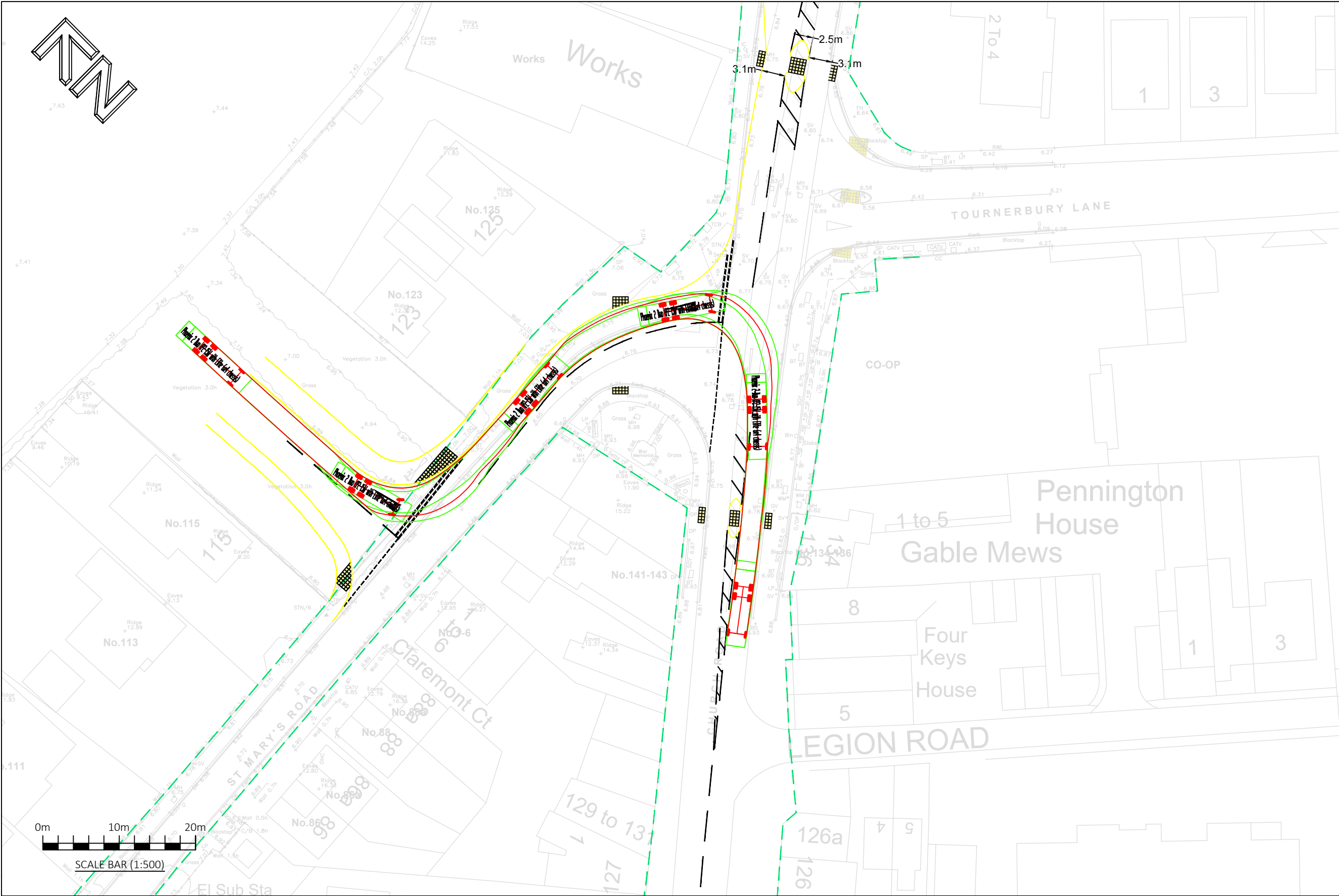


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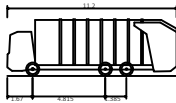
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Rev	Date	By	Revision notes
Status			
INFORMATION			

Project	ST. MARY'S ROAD, HAYLING ISLAND
Title	SWEPT PATH ANALYSIS OF DELIVERY VEHICLES AND LARGE CARS PASSING AT ACCESS

Drawn by RO	Issue date 03 APR 2024
Scale(s)	1:500 @ A3
Drawing No	P21033-008



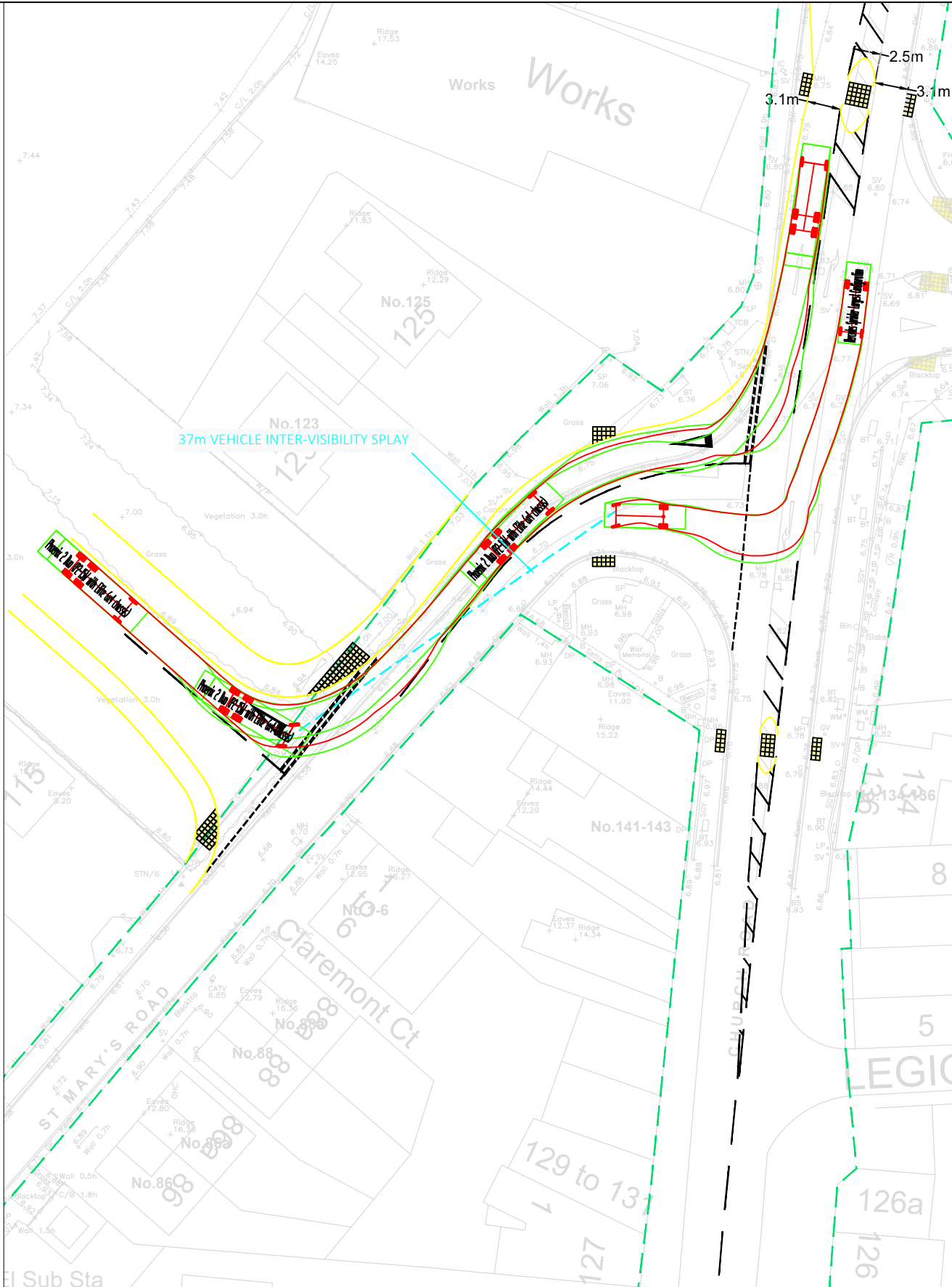
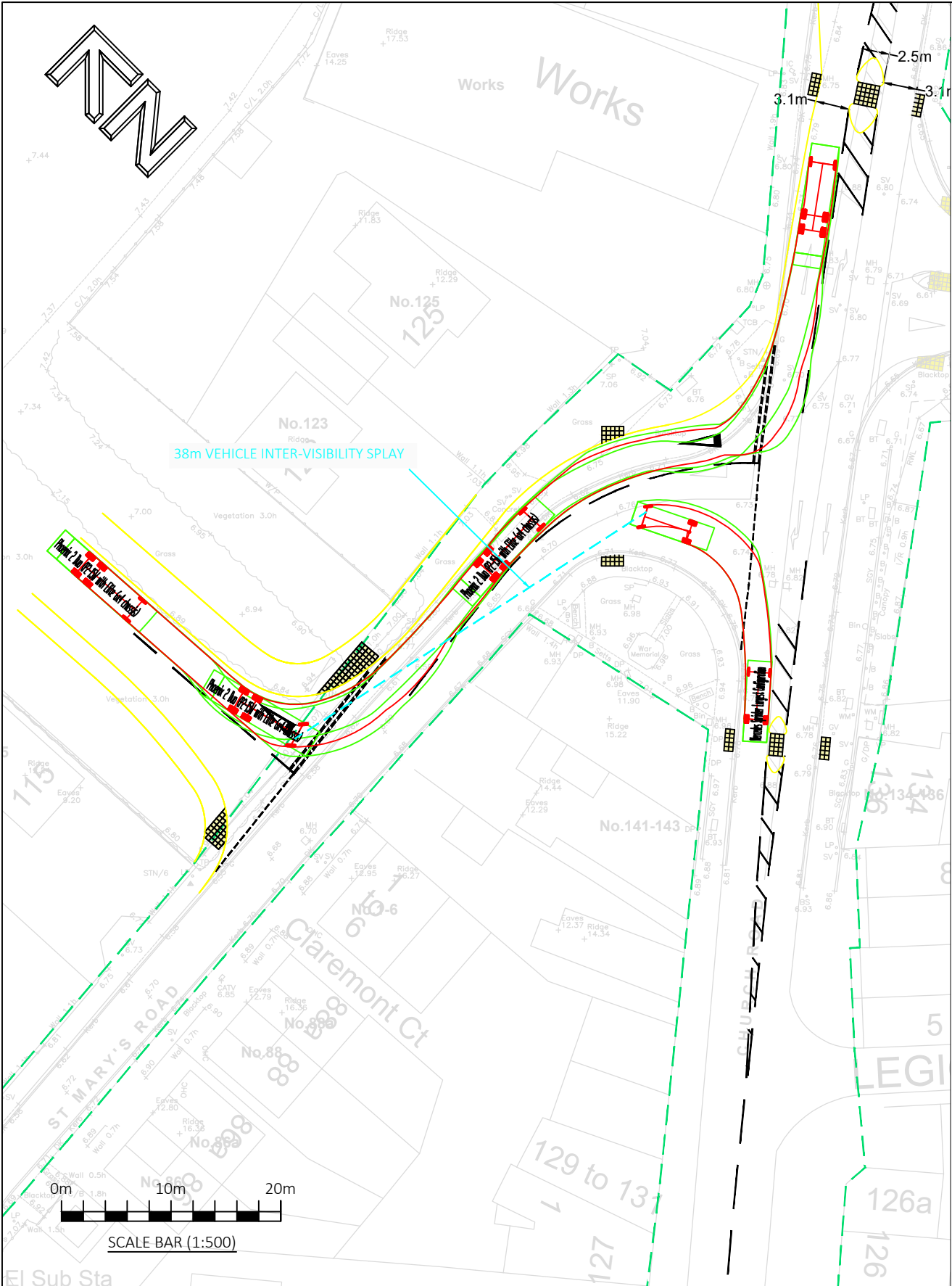
Vehicle model used in swept path analysis



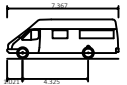
Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)

Overall Length	11.200m
Overall Width	2.530m
Overall Body Height	3.751m
Min Body Ground Clearance	0.300m
Track Width	2.500m
Lock to lock time	4.90s
Kerb to Kerb Turning Radius	9.500m

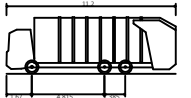
 9 Hurricane Court Liverpool International Business Park Estuary Boulevard Liverpool L24 8RL www.primetp.co.uk 0151 728 1860				Project	ST. MARY'S ROAD, HAYLING ISLAND	Drawn by RO	Issue date 03 APR 2024
	*	*	*	*		Scale(s) 1:500 @ A3	
	Rev	Date	By	Revision notes			
	Status INFORMATION				Title SWEPT PATH ANALYSIS OF REFUSE VEHICLE EXITING SITE		Drawing No P21033-009



Vehicle model used in swept path analysis



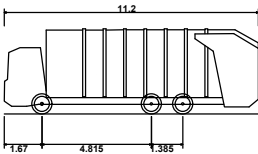
Mercedes Sprinter Largest Configuration
Overall Length 7.367m
Overall Width 2.175m
Overall Body Height 2.598m
Min Body Ground Clearance 0.371m
Track Width 2.175m
Lock to lock time 4.00s
Wall to Wall Turning Radius 7.600m



Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)
Overall Length 11.200m
Overall Width 2.530m
Overall Body Height 3.751m
Min Body Ground Clearance 0.304m
Track Width 2.500m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 9.500m

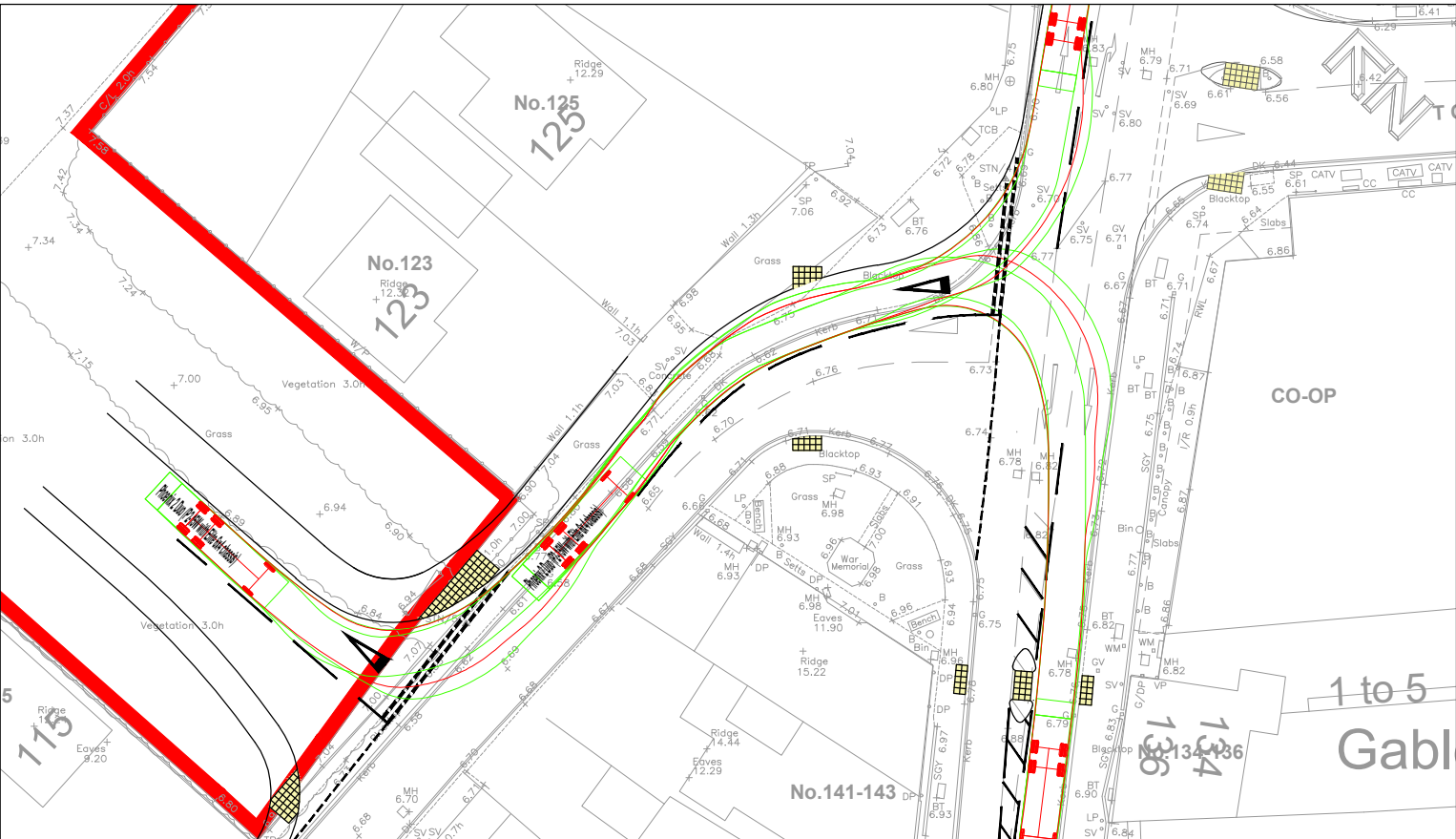
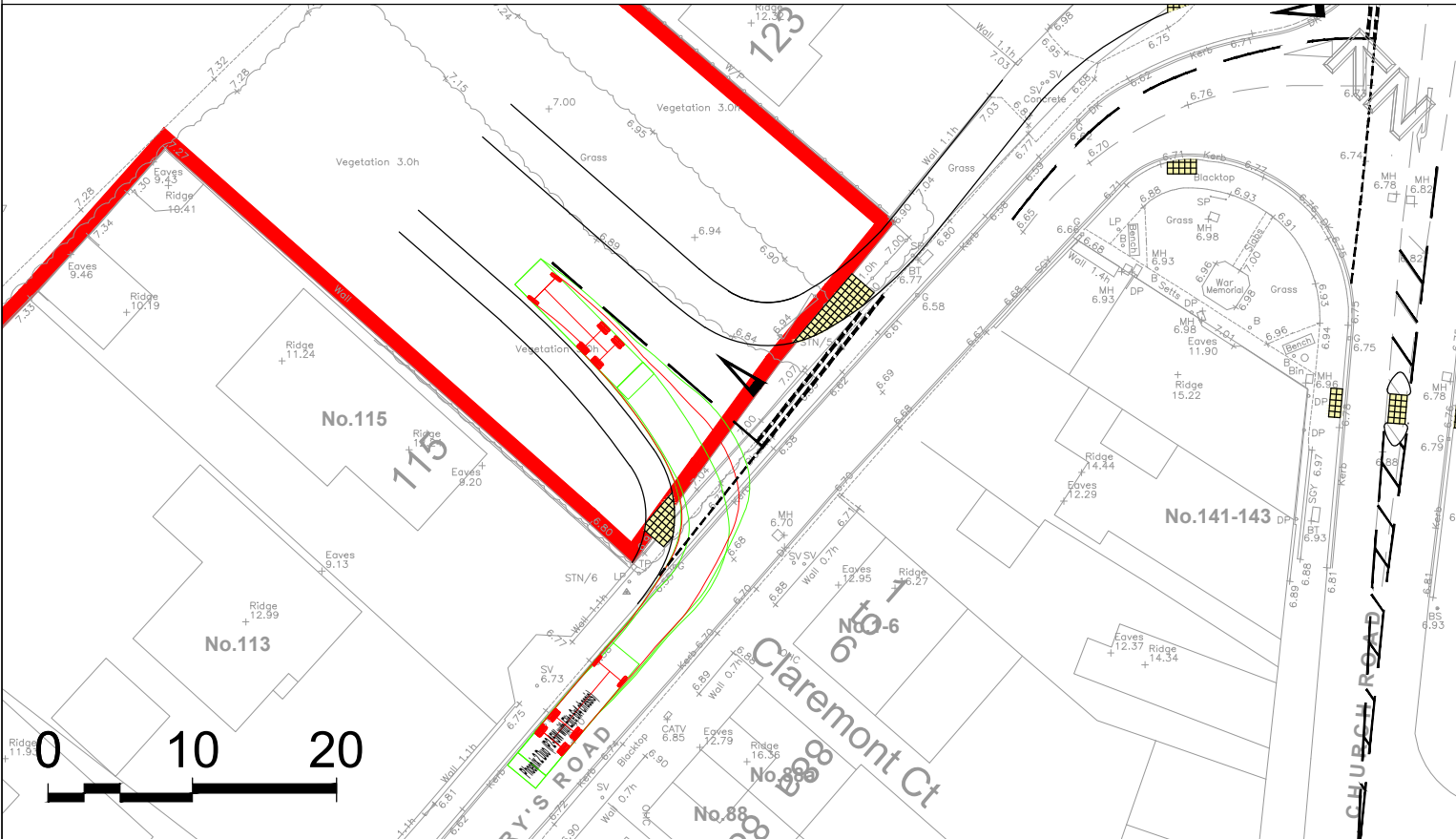
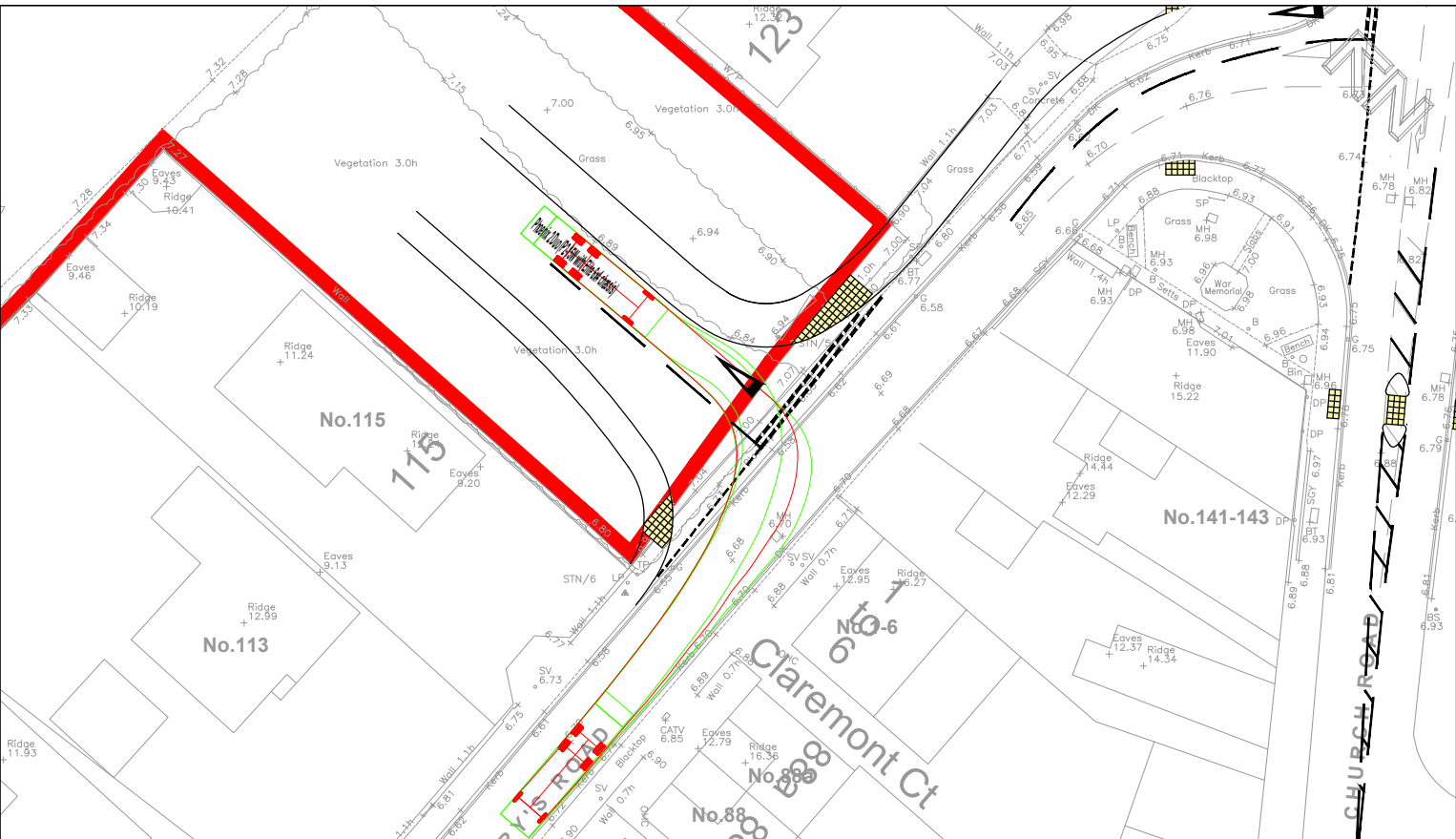
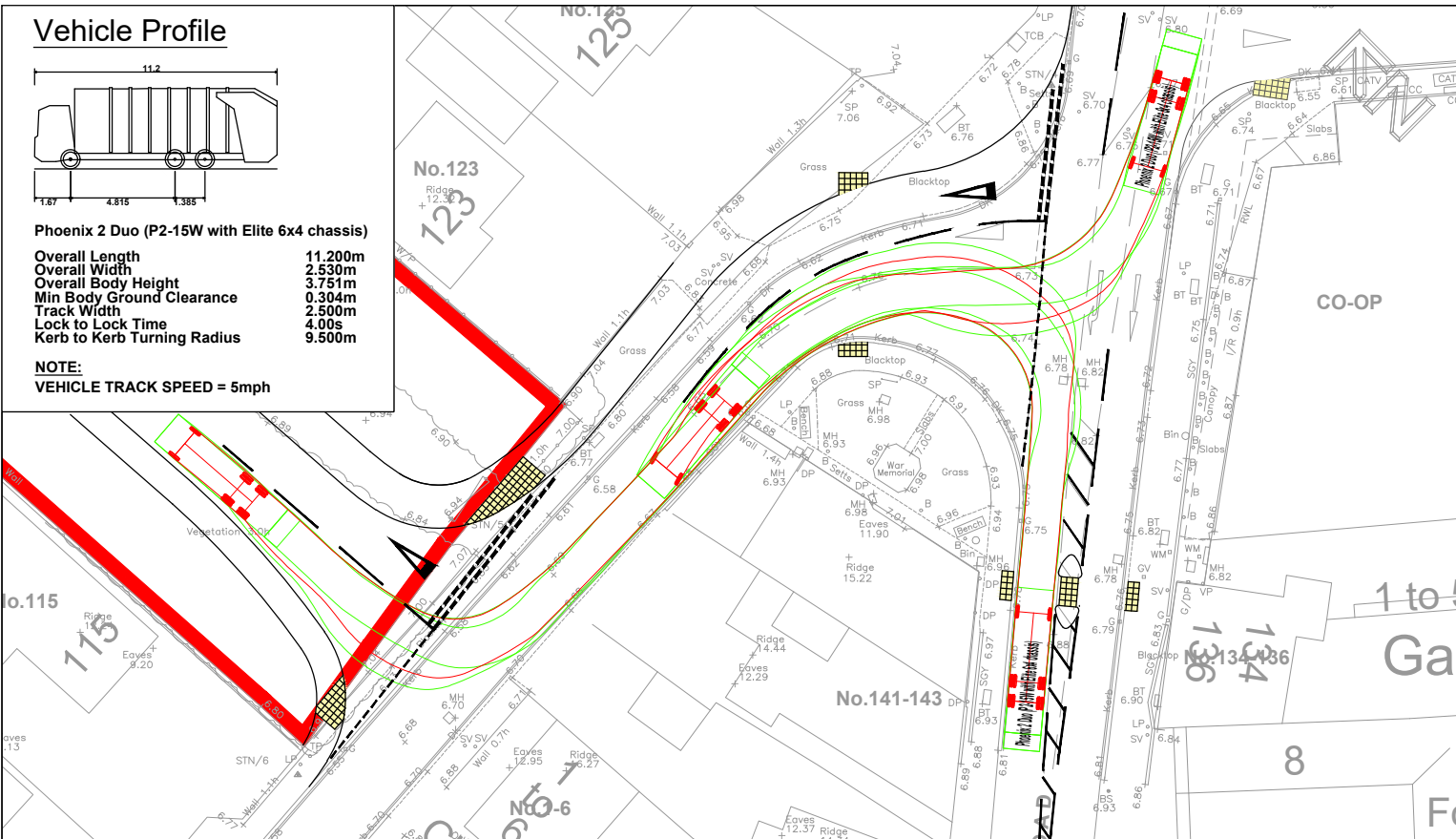
 9 Hurricane Court Liverpool International Business Park Estuary Boulevard Liverpool L24 8RL www.primetp.co.uk 0151 728 1860					Project ST. MARY'S ROAD, HAYLING ISLAND	Drawn by RO	Issue date 03 APR 2024
	*	*	*	*		Scale(s) 1:500 @ A3	
	Rev	Date	By	Revision notes	Title VEHICLE INTER-VISIBILITY ON ST MARYS ROAD		Drawing No P21033-010
	Status INFORMATION						

Vehicle Profile



Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)
Overall Length 11.200m
Overall Width 2.530m
Overall Body Height 3.751m
Min Body Ground Clearance 0.304m
Track Width 2.500m
Lock to Lock Time 4.00s
Kerb to Kerb Turning Radius 9.500m

NOTE:
VEHICLE TRACK SPEED = 5mph



 9 Hurricane Court Liverpool International Business Park Estuary Boulevard Liverpool L24 8RL www.primetp.co.uk 0151 728 1860	F	24.07.24	VB	DRAWING PACKAGE UPDATE	Project	ST MARY'S ROAD, HAYLING ISLAND	Drawn by	Issue date
	E	11.12.23	RO	GEOMETRY AMENDED			VB	17 JUN 2021
	D	15.12.22	VB	UPDATES FOLLOWING RSA COMMENTS & ARB ADVICE				
	C	23.08.22	VB	CHANGES FOLLOWING HAMPSHIRE COMMENTS				
	B	18.11.21	VB	SCALE ADDED TO DRAWING			Scale(s)	1:500 @ A3
	A	02.07.21	VB	CHANGES FOLLOWING RSA COMMENTS				
	Rev	Date	By	Revision notes	Title	SWEPT PATH ANALYSIS (REFUSE COLLECTION VEHICLE)	Drawing No	P21033-003F
	Status							
	INFORMATION							

Technical drawing of the rear view of a vehicle chassis. The drawing shows a rectangular chassis with various mounting points and dimensions. The top dimensions are 6.66 and 13.61. The bottom dimensions are 1.36, 4.48, 3.8, 6.47, 1.33, 1.33, and 2.87. The text "Max 90° Horiz" and "Max 10° Vert" is present near the bottom center.

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	6.550m

VEHICLE TRACK SPEED = 5mph



F	24.07.24	VB	DRAWING PACKAGE UPDATE
E	11.12.23	RO	GEOMETRY AMENDED
D	15.12.22	VB	UPDATES FOLLOWING RSA COMMENTS & ARB ADVICE
C	23.08.22	VB	CHANGES FOLLOWING HAMPSHIRE COMMENTS
B	18.11.21	VB	SCALE ADDED TO DRAWING
A	02.07.21	VB	CHANGES FOLLOWING RSA COMMENTS

Rev	Date	By	Revision notes
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INFORMATION

ST MARY'S ROAD, HAYLING ISLAND

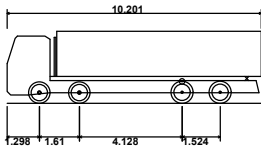
SWEPT PATH ANALYSIS (16.48m ARTICULATED VEHICLE)

Issue date
17 JUN 2021

1:500 @ A3

P21033-004F

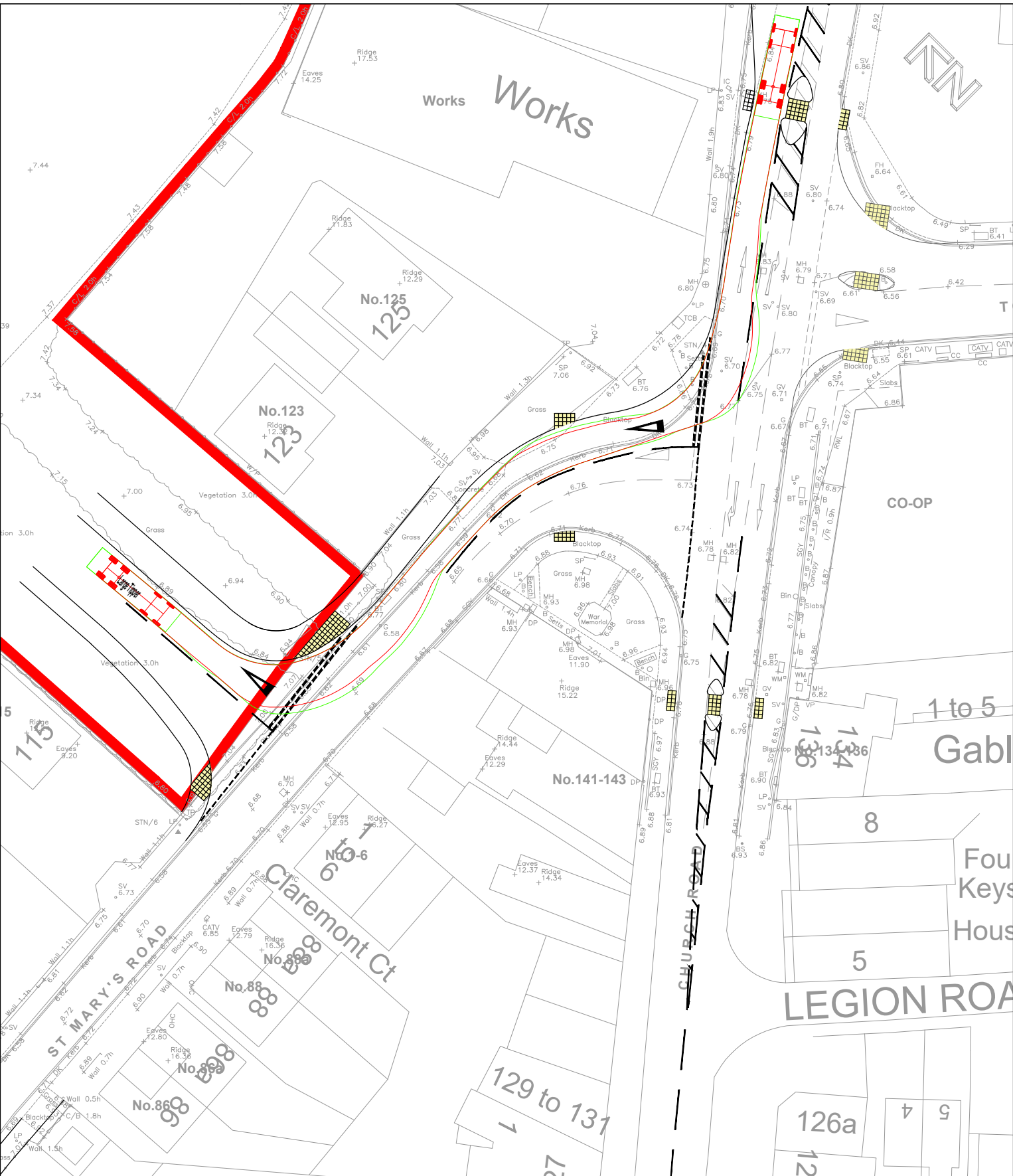
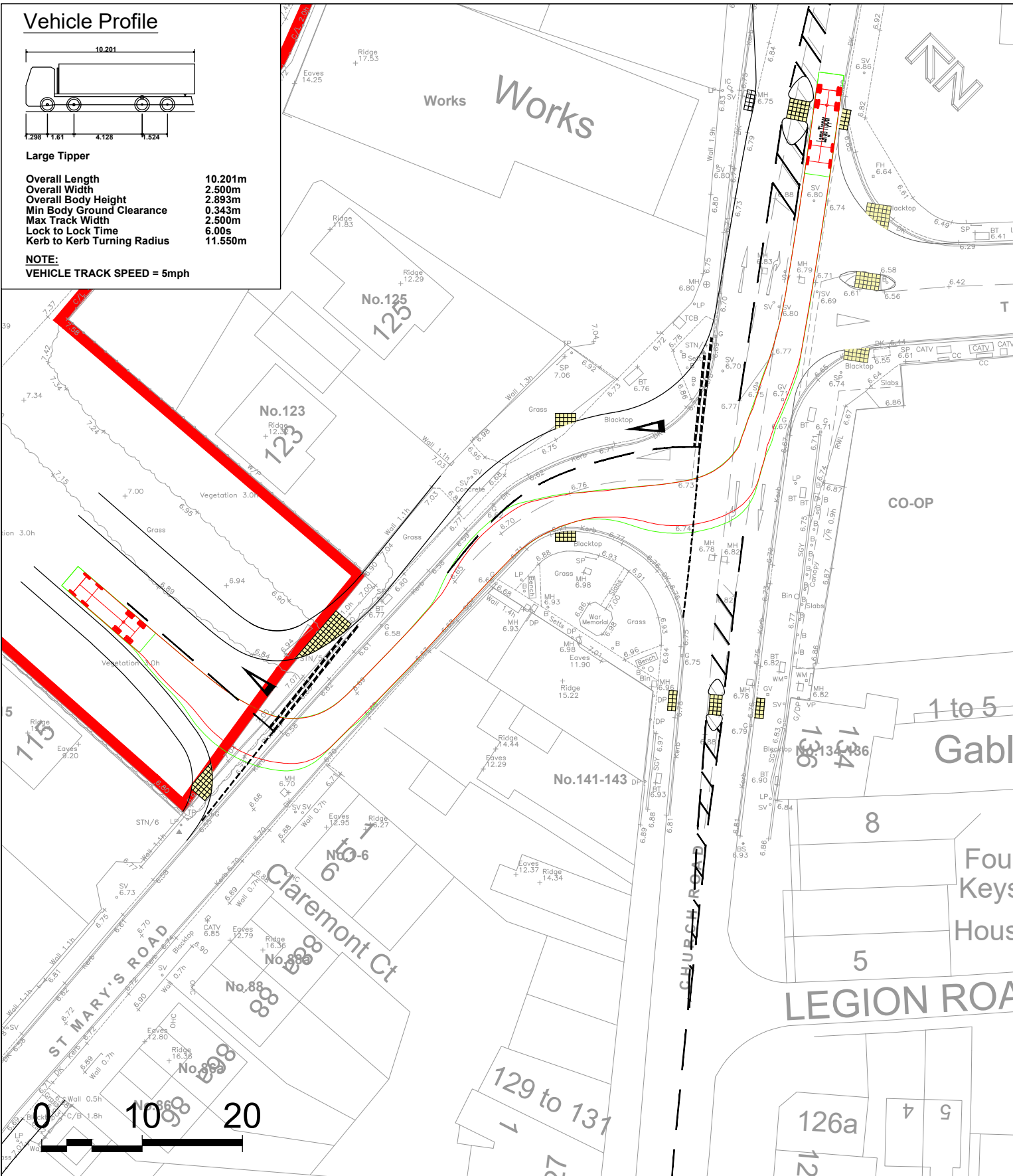
Vehicle Profile



Large Tipper

Overall Length 10.201m
Overall Width 2.500m
Overall Body Height 2.893m
Min Body Ground Clearance 0.343m
Max Track Width 2.500m
Lock to Lock Time 6.00s
Kerb to Kerb Turning Radius 11.550m

NOTE:
VEHICLE TRACK SPEED = 5mph



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F	24.07.24	VB	DRAWING PACKAGE UPDATE
E	11.12.23	RO	GEOMETRY AMENDED
D	15.12.22	VB	UPDATES FOLLOWING RSA COMMENTS & ARB ADVICE
C	23.08.22	VB	CHANGES FOLLOWING HAMPSHIRE COMMENTS
B	18.11.21	VB	SCALE ADDED TO DRAWING
A	02.07.21	VB	CHANGES FOLLOWING RSA COMMENTS

Rev	Date	By	Revision notes
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Status

INFORMATION

Project

ST MARY'S ROAD, HAYLING ISLAND

Title

SWEPT PATH ANALYSIS
(LARGE TIPPER TRUCK)

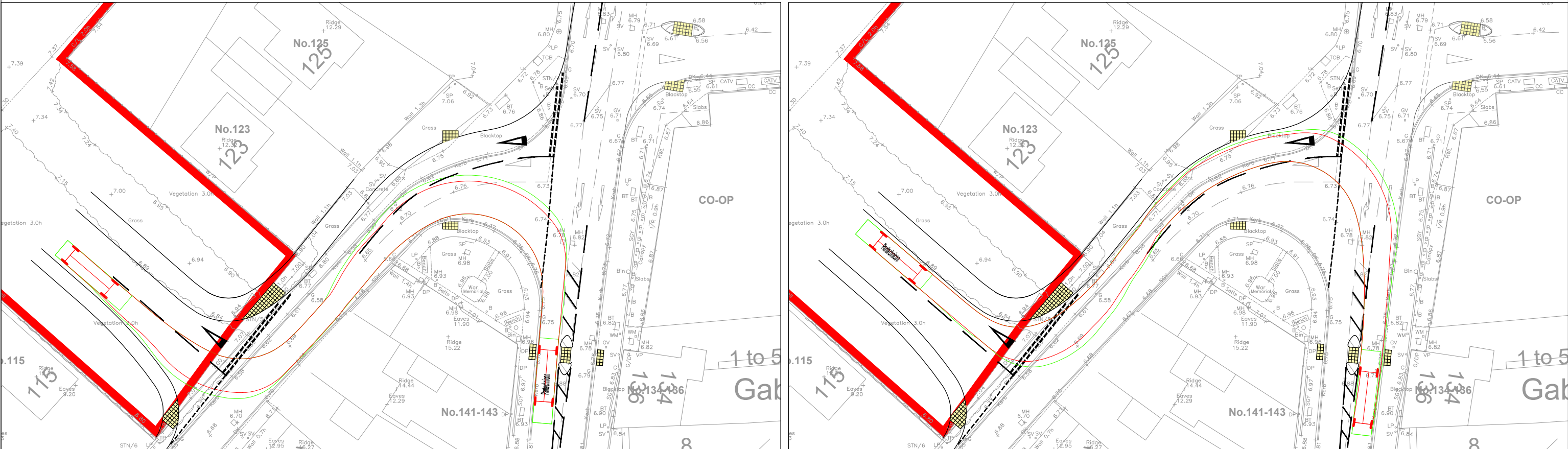
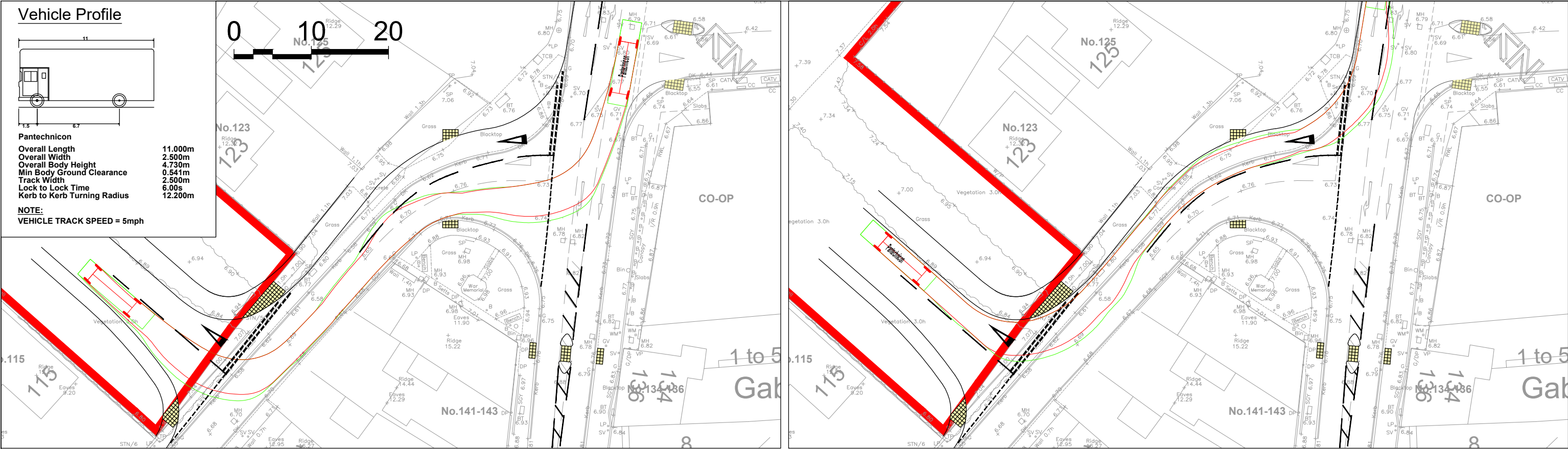
Drawn by
VB
Issue date
17 JUN 2021

Scale(s)

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Drawing No

P21033-005F



 9 Hurricane Court Liverpool International Business Park Estuary Boulevard Liverpool L24 8RL www.primetp.co.uk 0151 728 1860	F	24.07.24	VB	DRAWING PACKAGE UPDATE	Project	ST MARY'S ROAD, HAYLING ISLAND	Drawn by	Issue date
	E	11.12.23	RO	GEOMETRY AMENDED			VB	17 JUN 2021
	D	15.12.22	VB	UPDATES FOLLOWING RSA COMMENTS & ARB ADVICE				
	C	23.08.22	VB	CHANGES FOLLOWING HAMPSHIRE COMMENTS				
	B	18.11.21	VB	SCALE ADDED TO DRAWING			Scale(s)	1:500 @ A3
	A	02.07.21	VB	CHANGES FOLLOWING RSA COMMENTS				
	Rev	Date	By	Revision notes	Title	SWEPT PATH ANALYSIS (PANTECHNICON)	Drawing No	P21033-006F
	Status						INFORMATION	

APPENDIX F

ROAD SAFETY AUDIT (RSA)

ST MARY'S ROAD, HAYLING ISLAND PROPOSED ACCESS ARRANGEMENT (REVISED DESIGN)

STAGE 1 ROAD SAFETY AUDIT

610/2023/101/01 Rev 2

2 July 2025

six:TEN Highways & Traffic Ltd
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Manchester
M2 3WQ

t 0151 216 6421
m 07985 283074
e contact@610traffic.co.uk
www.610traffic.co.uk

Rev:	Issue Status:	Prepared by/Date:	Checked by/Date:	Approved by/Date:
0	DRAFT	Jon Preston 1 February 2023	Tristan Brooks 1 February 2023	
1	FINAL Rev 1	Jon Preston 2 February 2023	Tristan Brooks 2 February 2023	Jon Preston 2 February 2023
2	FINAL Rev 2	Jon Preston 2 July 2025	Tristan Brooks 2 July 2025	Jon Preston 2 July 2025

Report Title:	ST Mary's Road, Hayling Island Proposed Access Arrangement (Revised Design) Stage 1 Road Safety Audit
Date:	2 July 2025
Document Reference & Revision:	610/2023/101/01 Rev 2
Prepared by:	Six Ten Highways & Traffic Ltd
On behalf of:	Prime

Disclaimer note

The client has confirmed that it is entering into the agreement under which this report is being prepared on its own behalf and not on behalf of, or for the benefit of any other party and has agreed that in any event of any claim arising out of or in connection with that agreement and/or the report itself it shall be entitled to recover from six:TEN Highways & Traffic Limited only the losses, if any, it has itself suffered.

This report therefore is for the private and confidential use of the client for whom it was prepared solely for the purposes requested by the client. It should not be reproduced in whole or in part or relied upon by any third party for any use whatsoever without the express written authority of six:TEN Highways & Traffic Limited.

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1.0 INTRODUCTION

- 1.1 This report results from a preliminary design Stage 1 Road Safety Audit (RSA) carried out on the proposed revised access arrangement at St Mary's Road, Hayling Island, at the request of Prime who provided the audit information and although there was no formal 'audit brief' the RSA team has accepted that sufficient information has been provided to undertake the Stage 1 RSA. The audit team has been approved by the Overseeing Organisation Hampshire County Council to carry out Road Safety Audits on their highway network.
- 1.2 The Road Safety Audit Team was as follows:
- Jon Preston MCIHT MSoRSA
Audit Team Leader
- Tristan Brooks* Bsc (Hons), MBA, CMILT, MCIHT, MSoRSA, NH RSA Cert of Comp
Audit Team Member
- 1.3 Audit Team members marked with an asterisk above hold a National Highways approved Certificate of Competency (CoC) in Road Safety Audit, in accordance with Article (1–3) of EC Directive 2008/96/EC.
- 1.4 The audit took place at the Manchester office of six:TEN Highways and Traffic between 30 June 2025 and 2 July 2025. The Road Safety Audit was undertaken in accordance with the Road Safety Audit information provided. The audit comprised an examination of the documents provided as detailed in Appendix One.
- 1.5 The Audit Team visited the site together during the afternoon of the 16 June 2021 between 15:45hrs and 16:30hrs. During the site visit the weather was sunny and the carriageway surface was dry. At the time of the site visit traffic movements in the vicinity of the proposed works were moderate with some pedestrian and cyclist movements observed.
- 1.6 The audit team have been advised that no changes to the highway network have occurred in the vicinity of the proposed works since the site visit was carried out.
- 1.7 All roads in the vicinity of the proposed highway works are subject to a 30mph speed limit and are street lit.
- 1.8 The terms of reference of the audit are as described in GG 119 Rev.2. The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria. This Road Safety Audit has been undertaken based on the Road Safety Audit Team's previous experience and knowledge in undertaking Collision Investigation, Road Safety Engineering and Road Safety Audits.

- 1.9 The proposed highway works are associated with the construction of a new residential development which in summary includes:
- Provision of a major/minor priority-controlled T-junction on the north-western side of St Mary's Road;
 - Provision of uncontrolled pedestrian crossings with dropped kerbs and buff tactile paving at the following locations:
 - At the proposed access;
 - St Mary's Road near the junction with Elm Grove;
 - Outside No. 111 St Mary's Road; and
 - Car park access on St Mary's Road;
 - Provision of pedestrian refuge island with uncontrolled pedestrian dropped crossings with dropped kerbs and buff tactile paving at the following locations:
 - Church Road north of the junction with Tournurbury Lane; and
 - Outside 134/136 Elm Grove;
 - Widening of the St Mary's Road carriageway northeast of the proposed access; and
 - Narrowing of the Church Road northbound carriageway north of the junction with Tournurbury Lane.
- 1.10 The Audit Team have not been informed of any Departures from Standard for the proposed scheme.
- 1.11 Previous Stage 1 RSAs were carried out in June 2021, December 2022 and February 2023 based on the previous design proposals for the scheme which have now been superseded by this Stage 1 RSA report (610/2023/101 Rev 2).
- 1.12 It is noted that the proposals set out in the latest drawings have resolved one issue relating to the tactile paving at the new access.
- 1.13 Personal injury collision data has been obtained from the online crashmap.co.uk database which shows there has been three personal injury collisions in the vicinity of the proposed highway works during the latest five-year period (2019 – 2023) for which data is available. Two collisions were classed a serious in severity and the remaining collision was classed as slight in severity. The Personal Injury Collision location plan is shown in Appendix Four.
- 1.14 The scheme has been examined and this report compiled only regarding the safety implications for road users of the scheme as presented. It has not been examined or verified for compliance with any other Standards or criteria. However, to clearly explain a safety problem or the recommendation to resolve a problem, the Audit Team may on occasion have referred to a design standard for information only. Any audit comments should not be construed as implying that a technical audit has been undertaken in any respect.
- 1.14 Any recommendations included within this report should not be regarded as being prescriptive design solutions to the problems raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem, in accordance with GG 119 Rev 2, and in no way, imply that a formal design process has been undertaken. There may be alternative methods of addressing a problem which would be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.

2.0 ITEMS RAISED AT THIS STAGE 1 ROAD SAFETY AUDIT

2.1 General

2.1.1 No road safety issues identified at this stage.

2.2 Local Alignment

2.2.1 No road safety issues identified at this stage.

2.3 Junctions

2.3.1 No road safety issues identified at this stage.

2.4 Walking, Cycling and Horse Riding

2.4.1 Location: Proposed uncontrolled pedestrian crossings at the site access junction

Problem

Summary: Proposed location of the uncontrolled pedestrian crossings may result in an increased risk of vehicle/pedestrian collisions if visually impaired pedestrians inadvertently enter St Mary's Road when crossing the site access road

The drawings provided for audit show the proposed uncontrolled pedestrian crossings at the site access junction are located relatively close to the channel line of St Mary's Road. This may result in visually impaired pedestrians inadvertently entering the carriageway of St Mary's Road if they veer off course slightly when crossing the site access road, which may increase the risk of vehicle/pedestrian collisions.

Recommendations

It is recommended that the proposed uncontrolled pedestrian crossings are relocated further into the site access road, noting that this should not be to the detriment of the likely pedestrian desire line or the driver/pedestrian intervisibility to/from the proposed uncontrolled pedestrian crossings.

2.5 Traffic Signs, Carriageway Markings and Lighting

2.5.1 No road safety issues identified at this stage.

3.0 ROAD SAFETY AUDIT TEAM STATEMENT

We certify that the audit has been carried out in accordance with DMRB GG119 Rev 2.

AUDIT TEAM LEADER

Jon Preston MCIHT MSoRSA

Director

six:TEN Highways & Traffic Ltd

Signed:



Date: 2 July 2025

AUDIT TEAM MEMBER

Tristan Brooks Bsc (Hons), MBA, CMILT, MCIHT, MSoRSA, NH RSA Cert of Comp

Traffic & Road Safety Engineer

six:TEN Highways & Traffic Ltd

Signed:



Date: 2 July 2025

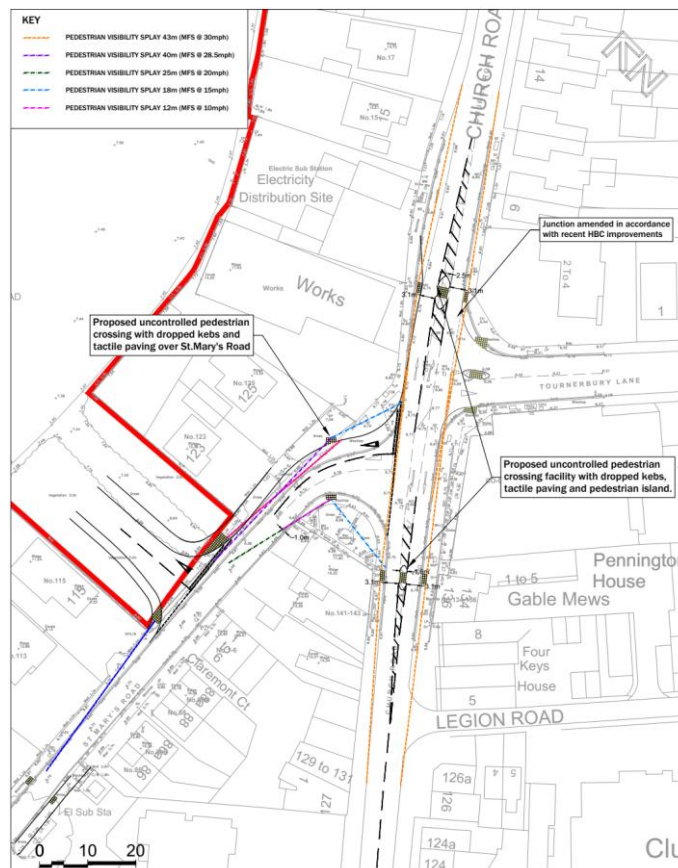
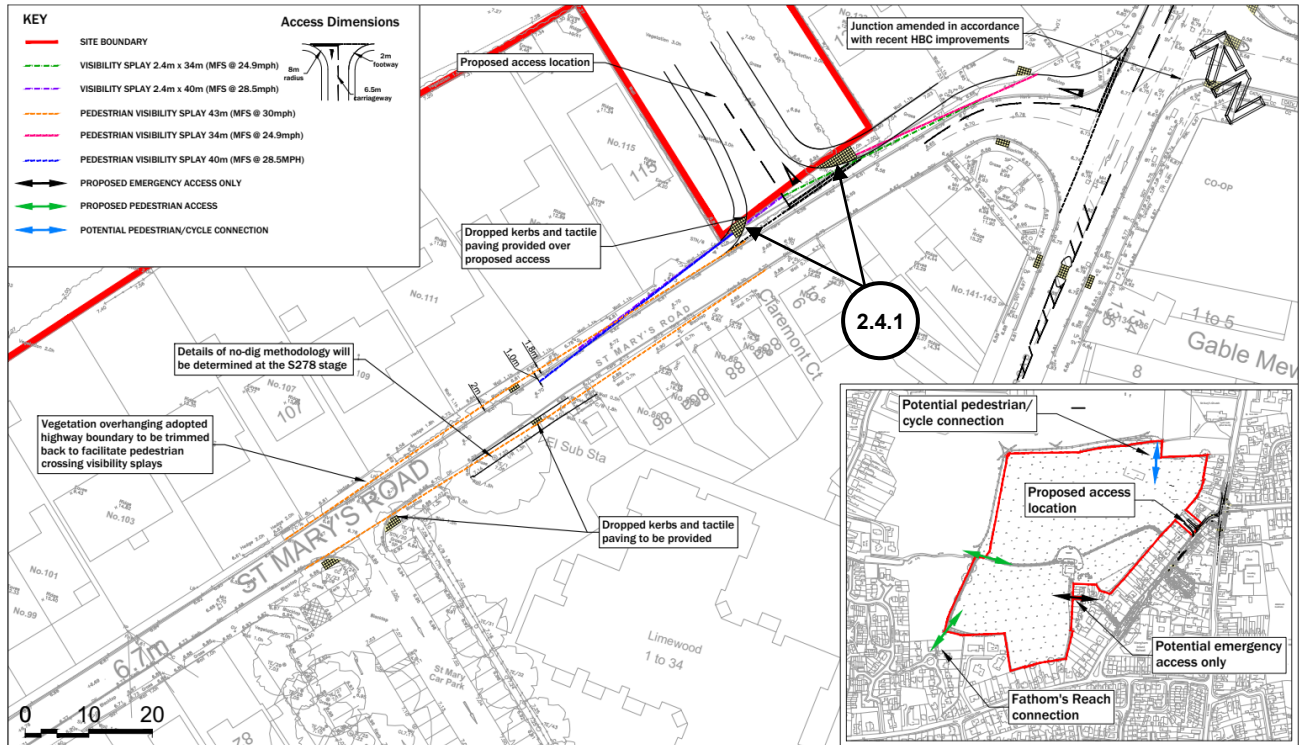
APPENDIX ONE

4.0 LIST OF DRAWINGS AND DOCUMENTS SUPPLIED BY THE DESIGN ORGANISATION

- P21033-001I Proposed Access Arrangement
- P21033-002E Proposed Pedestrian Crossings
- P21033-003F Swept Path Refuse Vehicle
- P21033-004F Swept Path Artic
- P21033-005F Swept Path Large Tipper
- P21033-006F Swept Path Pantechnicon
- P21033-007E Swept Path Bus
- P21033-008 Swept Path Delivery Vehicle Passing Car
- P21033-009 Swept Path Refuse Vehicle Leaving
- Five-year (2019 – 2023) Personal Collision Data from crashmap.co.uk

APPENDIX TWO

5.0 PROBLEM LOCATION PLAN



APPENDIX THREE

6.0 PHOTOGRAPHS



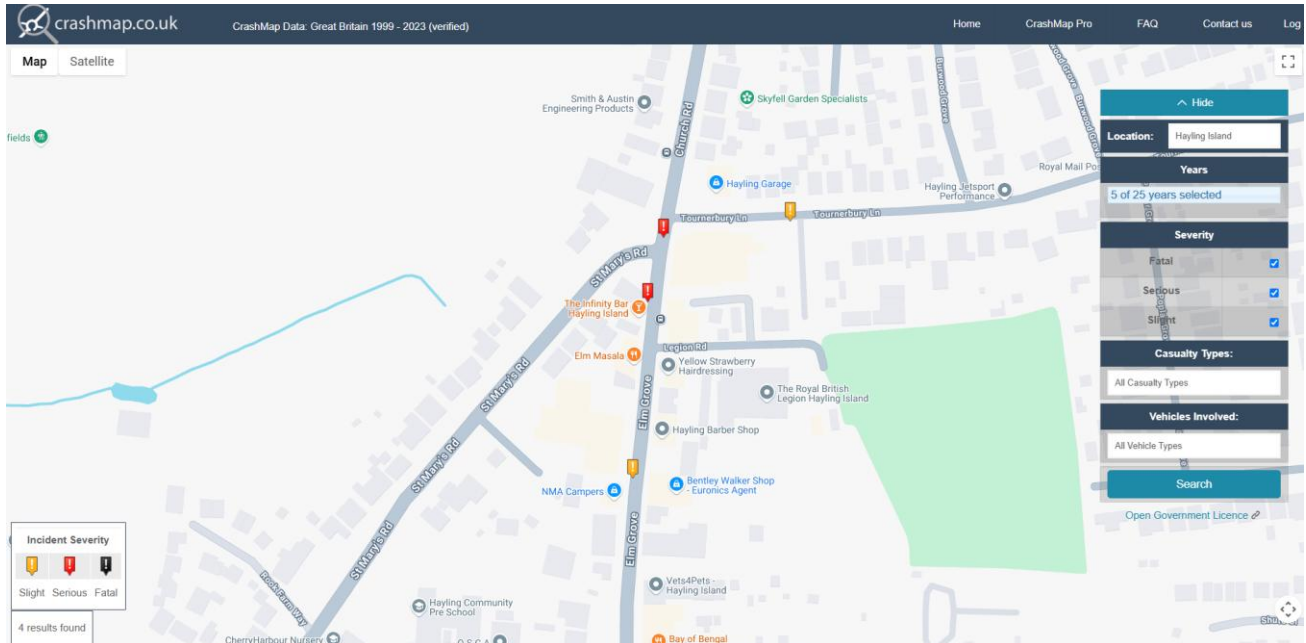
6.1 Looking southwest towards proposed access on St Mary's Road (June 2021)



6.2 Looking northeast towards proposed access on St Mary's Road (June 2021)

APPENDIX FOUR

7.0 PERSONAL INJURY COLLISION LOCATION PLAN



APPENDIX G

CORRESPONDENCE WITH STAGECOACH

David Stoddart

From: Gordon Frost <Gordon.Frost@stagecoachbus.com>
Sent: 05 May 2017 10:41
To: David Stoddart
Subject: RE: Hayling Island Query

Hi Dave

Aah! I can see real merit in doing all three crossings- sorry I hadn't picked that up first time. That plan is also really useful as it shows you are looking to "pinch" the least useful part of the current lay-by. I can't see we have any issues with that and from our point of view I'd carry on with your plan.

Regards

Gordon

Gordon Frost
Operations Director
Stagecoach South
Bus Station
Southgate
Chichester
PO19 2DG

07785 694302
01243 755858



Stagecoach South
Registered Office: Stagecoach (South) Ltd,
Daw Bank, Stockport, SK3 0DU
(Registered in England & Wales No 1673542)

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David Stoddart

From: David Stoddart
Sent: 04 May 2017 09:20
To: Gordon Frost
Subject: RE: Hayling Island Query
Attachments: P16031-002A.PDF; P16031-007.pdf

Hi Gordon,

Thanks for coming back to me. Attached is our initial design for the crossing and a swept path analysis which shows that two 11.2m long Dennis Darts can easily fit in the layby. As you will see, we're looking at shortening the taper by only a few metres. I think that the local highway authority is being overly cautious although they are yet to see this latest drawing, with the previous one taking a greater length from the layby.

We're looking to make the junction as pedestrian friendly as we can. There is a college and a primary school to the north but there is a signal controlled crossing further north, so we could always remove the proposed crossing from the design.

In terms of the white vans shown on Google Earth, I didn't see anyone parked there on my recent site visits, but given the length of the layby, I can see it being regularly abused for parking.

Really, we're keen to learn the value of the layby to Stagecoach, ascertain if you do have a requirement for two buses to dwell there and whether you would have any concerns with us slightly reducing the length of the taper.

Kind regards

Dave

David Stoddart

Principal Transport Planner | **T:** 0151 728 1864 | **M:** 07944446528



From: Gordon Frost [mailto:Gordon.Frost@stagecoachbus.com]
Sent: 03 May 2017 14:58
To: David Stoddart <D.Stoddart@primetp.co.uk>
Subject: RE: Hayling Island Query

Hi Dave

Whereabouts were you actually looking to site the crossing? Looking at the map the main generator of any pedestrian traffic would appear to be the Co-op store, so I'd almost expect the crossing to be located south of the St Mary's Rd junction where it wouldn't interfere with our bus stop at all. What are the benefits of locating it north of the junction and how is meant to serve?

Whilst the bus stop does look long, there is a very long taper on it with a narrow initial splay. It's a fair way into the layby before the bus is actually off the road so it's not quite a double length as it first appears. Interestingly both your shot and the one of google earth show it being used by white vans for parking, which makes me nervous about reducing the length if they continue to sue it for parking.

Regards

Gordon

Gordon Frost
Operations Director
Stagecoach South
Bus Station
Southgate
Chichester
PO19 2DG

07785 694302
01243 755858



Stagecoach South
Registered Office: Stagecoach (South) Ltd,
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APPENDIX H

MODELLING BRIEF

1 INTRODUCTION

1.1 Purpose of Report

1.1.1 This Modelling Brief has been prepared to present Systra with a methodology to undertake traffic modelling using the Hayling Island microsimulation model in order to assess four live planning applications for major developments on Hayling Island.

1.1.2 The four live applications are summarised in Table 1.1.

Table 1.1: Live Planning Application Details

App. No.	Description	Quantum (no. dwellings)	Applicant	Transport Consultant
APP/21/01350	North of Oysters, Station Road	Up to 29	Hayling Island Builders	Paul Basham Associates (PBA)
APP/21/01351	South of Saltmarsh Lane	Up to 60	Hayling Island Builders	Paul Basham Associates (PBA)
APP/21/01434	Rook Farm	Up to 300	Gladman	Prime Transport Planning (Prime)
APP/22/00001	Fathom's Reach	51 (demolition of 5)	Taylor Wimpey	Hydrock

1.1.3 A previous version of the microsimulation model, produced by Systra using Paramics software, was used in the Hayling Island Transport Assessment (HITA) (2019) to support the previous version of the Havant Local Plan which was withdrawn in early 2022 following Examination in Public in summer 2021. One of the reasons for the withdrawal was to allow HBC to undertake additional modelling work to consider the impact of the Local Plan developments during the summertime period, with the Island being a popular tourist destination in the summer months.

1.1.4 This Modelling Brief has been prepared by Prime Transport Planning with input from Hydrock and Paul Basham Associates. It is the intention to provide Systra with a methodology agreed with the following three key parties:

- Havant Borough Council (HBC) as owners of the model and local planning authority;
- Hampshire County Council (HCC) as local highway authority; and
- National Highways (NH) as trunk road authority responsible locally for the A27.

1.1.5 We consider this to be the final version of the Modelling Brief, subject to any additional comments from the three key parties who have been consulted on draft versions on this note. Comments from the three key parties have been incorporated into this final version.

1.1.6 Following this introduction, Section 2 presents model parameters for use in the assessment.

1.2 Summary of Recent Discussions

HCC

1.2.1 The three transport consultants listed in Table 1.1 met with HCC via Teams on 17th April 2023. HCC called the meeting following a meeting they held with HBC to discuss how the live applications on Hayling Island should be considered, particularly as timescales for the potential adoption of the emerging Local Plan are such that they do not align with the aspirations of the developers with live applications on the Island.

1.2.2 HCC is aware of the seasonal assessment modelling work being undertaken and an update of the neutral month model. HBC have shared some of their 2022 traffic data with HCC, and HCC have observed that there has been little change in traffic flow volumes on the Island between the updated data and that used in the 2019 model. As such, HCC is content that the 2019 neutral month model remains fit for continued use, and advised HBC that their summer model should be prioritised so that both models could be used to assess the impact of the live applications. HCC were informed that the summer model would be ready for use in a few weeks.

1.2.3 The three consultants were content with the approach suggested and it was provisionally agreed, on HCC's recommendation, that there would be benefit to a degree of collaboration between the three applicants and their consultants.

1.2.4 HCC also reiterated that whilst the microsimulation models should be used to consider impact on journey times on the Island, this work should be supplemented by traditional standalone junction capacity assessments at key junctions, with those mentioned being:

- A3023 Havant Road/Church Road (Mill Rythe Roundabout);
- A3023 Langstone Road/Northney Lane; and
- A27/Langstone Road/Park Road South (Langstone Roundabout).

1.2.5 It was agreed that the mitigation package assessed in the HITA would form a reasonable starting point for mitigation, however HCC expressed concerns with the proposed signalisation scheme for the first two junctions listed above, noting that whilst signals might show beneficial modelling results in the peak hours, they would introduce delay outside of the peaks. Other junctions that may require standalone capacity assessments may be unique to individual applications such as the individual site accesses and St Mary's Road/Church Road/Tournerbury Lane for Rook Farm.

1.2.6 Systra will need to provide existing and forecast year turning counts, and queue lengths if possible, to each consultant for each junction identified for capacity assessment.

Systra

- 1.2.7 Prime met with Systra via Teams on 5th May 2023 to outline the initial brief.
- 1.2.8 Systra advised that the timescales quoted by HCC were correct, however the 2023 neutral month model was being progressed at the same time as the summer model and both would be ready at the same time. Prime agreed that it would be sensible to use the 2023 neutral month model rather than the 2019 version.
- 1.2.9 Following the meeting, Systra provided an outline methodology and indicative cost for the modelling work, both of which have been shared with Hydrock and PBA.

National Highways

- 1.2.10 Prime met with NH and Jacobs, their consultant, via Teams on 17th May 2023. The purpose of the meeting was to update NH with the preferred methodology and also seek clarification on NH's stance on the modelling work as HBC and HCC appear to be under the impression that NH are content with the modelling work to date.
- 1.2.11 NH affirmed that it is content with the principle of the microsimulation modelling supplemented by standalone capacity assessment at Langstone Roundabout. However NH is not currently in a position to agree that the model is fit for purpose. NH requests further detailed modelling reports such as a baseline data report, calibration/validation report and forecast methodology information.
- 1.2.12 Prime queried NH's stance on traffic growth and use of TEMPro. NH are content that growth on the Island will be associated with the proposed developments and background growth should not need to be applied, however this cannot be said of movements to and from the A27. As such, TEMPro growth should be applied to A27 movements i.e. trips to and from the A27 via the slip roads at Langstone Roundabout. NH feel that this is also particularly important for the emerging Local Plan as HBC will need to demonstrate that the impact on all local strategic road network junctions is acceptable. Proposed TEMPro factors are presented in the following section.
- 1.2.13 **Action: HBC/Systra to provide NH with model reports and methodology information when ready. Information should also be shared with HCC.**

2 MODELLING PARAMETERS

2.1 Baseline

- 2.1.1 The 2022 Baseline traffic flows from the neutral month and summer microsimulation models will be used as the base year with capacity assessments undertaken at key junctions as identified by HCC. Observed queues should also be provided to aid capacity assessment calibration.

2.1.2 Prime constructed capacity assessment models using Junctions 9 and LinSig 3 as appropriate for the following junctions as part of the 2017 application at Rook Farm (APP/17/00007):

- A27/A3023 Langstone Road/Park Road South (Langstone Roundabout) – grade separated signal controlled roundabout;
- A3023 Langstone Road/Langstone Technology Park Access/Southbrook Road – staggered crossroads with ghost island right turns;
- A3023 Havant Road/Church Road (Mill Rythe Roundabout) – 3 arm roundabout;
- A3023 Manor Road/St Mary's Road/Station Road – 4 arm staggered crossroads with ghost island right turn to St Mary's Road;
- Elm Grove/Cherrywood Gardens – 3 arm priority;
- St Mary's Road/Cherrywood Gardens – 3 arm split priority; and
- Church Road/Tournerbury Lane/Elm Grove/St Mary's Road – staggered crossroads with ghost island right turns.

2.1.3 The models will be reviewed and recalibrated using the 2022 data and updated to Junctions 10. The models can be shared with the other consultants.

2.2 Background Traffic Growth

2.2.1 Two forecast years will be assessed, the first being 2025. This will act as the year of opening for the four development proposals. Whilst only a small proportion of the Rook Farm will be occupied in this year, full build-out will be assessed in line with NH recommendations. A second forecast year of 2035 will be assessed, this representing the year of opening (2025) plus 10 years in line with HCC's preference.

2.2.2 As stated in the Introduction, the development proposals will likely account for local traffic growth on the Island, therefore no traffic growth will be applied to local movements i.e. Island to Island, Island to mainland local roads and mainland local road to Island trips. Whilst NH in the meeting on 17th May 2023 expressed a preference for TEMPro to be applied to movements to/from the A27, trips associated with the live applications will be assigned to the A27 slip roads and will likely account for all island to A27 growth and vice versa. TEMPro growth will however be applied to A27 to mainland and mainland to A27 trips.

2.2.3 HBC have provided Systra with completions to April 2022 which will be included as committed developments. HBC have provided Prime with updated data for residential and commercial completions up to April 2023 which will be shared with Systra for inclusion in the model.

2.2.4 It should be noted that the emerging allocations from the withdrawn Local Plan, not including the live applications, will not be included in the model as they do not currently have any planning status as confirmed with HCC during the meeting on 17th April 2023.

- 2.2.5 We are aware of a live outline application by Persimmon for 65 dwellings on land south of The Mallards and west of Langstone Road north of the Island (APP/21/00647), however HCC informed us that whilst Persimmon have been invited to take part in this modelling process, they have yet to respond to the invitation, as such we will proceed with this process and exclude Persimmon as a committed development. The highway authorities have confirmed acceptance of this with HBC to defer to HCC advice.
- 2.2.6 TEMPro (core) (V8.1) growth should be applied to light vehicles (cars and vans) and National Road Traffic Projections (N RTP) (core) for HGVs and trunk roads should be applied to heavy vehicles (HGVs, buses and coaches) for movements to and from the A27 slip roads at Langstone Roundabout from and to mainland Havant. The middle layer super output areas in Havant which may add traffic to the A27 at the Langstone Roundabout have been identified and the associated growth factors are shown in Table 2.1 along with the N RTP based growth factors. Following the release of TEMPro V8.1, the 'A road' NTM adjustment has been applied given the importance of the A3023 to the assessment. Details of the N RTP calculation are provided in Appendix I.

Table 2.1: Traffic Growth Factors to be applied to Mainland Movements

Area Description		Peak	
Level	Name	AM	PM
2022-2025			
E02004769	Havant 008	1.0264	1.0245
E02004770	Havant 009	1.0153	1.0153
E02004771	Havant 010	1.0254	1.0225
E02004775	Havant 014	1.0139	1.0127
E02006822	Havant 018	1.0175	1.0148
Average		1.0197	1.0180
2022-2035			
E02004769	Havant 008	1.1300	1.1274
E02004770	Havant 009	1.1089	1.1085
E02004771	Havant 010	1.1305	1.1241
E02004775	Havant 014	1.0981	1.0951
E02006822	Havant 018	1.1055	1.1008
Average		1.1146	1.1112

- 2.2.7 The A27 mainline is included in the Paramics model and at the request of NH, TEMPro and N RTP growth will be applied to mainline movements. We suggest that an average of the TEMPro growth for Hampshire and East Sussex should be applied, that latter included given that the A27 passes through the county. The 'trunk road' NTM adjustment has been applied to the authority level as this growth is applied to A27 movements. N RTP growth for the South East will also be applied. These factors are summarised in Table 2.2.

Table 2.2: Traffic Growth Factors to be applied to A27 Mainline Movements

Area Description		Peak	
Level	Name	AM	PM
2022-2025			
County	East Sussex	1.0293	1.0280
County	Hampshire	1.0243	1.0230
Average		1.0268	1.0255
2022-2035			
County	East Sussex	1.1542	1.1520
County	Hampshire	1.1292	1.1271
Average		1.1417	1.1396

2.3 Assessment Periods

Neutral Month Model

- 2.3.1 The focus of the neutral month model will be on the weekday network peak hours to be identified by Systra from the 2022 traffic surveys. The school PM peak should also be considered for the following junctions:

- A3023 Havant Road/Church Road (Mill Rythe Roundabout); and
- Church Road/Tournerbury Lane/Elm Grove/St Mary's Road.

- 2.3.2 HCC's request that the school PM peak assessment should be based on raw flow data rather than use of the Paramics model is noted. Paramics model outputs will however be provided for all time periods which will allow the development and committed development trips to be added to the raw data.

Summer Model

- 2.3.3 The focus of the seasonal model will be on the traditional AM and PM peak hours, to be confirmed from review of trip generation survey data, and on the summertime AM peak which we understand to be 11am-12pm. We further understand that the summertime PM peak aligns with the traditional residential PM peak.
- 2.3.4 Whilst HCC have stated that they do not expect to see the full results of both the neutral month model and the seasonal model, as they would be willing to accept the worst case scenario in terms of cumulative impact, given that seasonal impact was a considerable issue raised at Examination in Public, and as neutral assessments are standard practice, we feel it is pertinent to proceed with both versions of the model.

2.4 Development Trip Generation

- 2.4.1 Systra have undertaken trip generation surveys of recent residential developments on the Island during both the August peak and November neutral month programs on behalf of HBC in 2022. Prime

have also undertaken surveys in September/October 2022 on behalf of Gladman at the same locations which are summarised as follows:

- Barratt Homes off Station Road (junction of Billy Road/Station Road) 77 dwellings; and
- Bellway Homes off Beech Grove (junction of St Benedict Road/Beech Grove) 131 dwellings.

2.4.2 The surveys instructed by Prime were undertaken by 360TSL, an independent traffic survey specialist. From review of the data provided by Systra, it also appears to have been undertaken by a traffic survey specialist. The surveys were primarily undertaken by manual classified count (MCC) and one automatic traffic counter (ATC). A summary of these surveys is provided in Table 2.3.

Table 2.3: Trip Generation Survey Data Sources

Location	Survey Type	Instructing Organisation	Date
Neutral Month Model			
Billy Road/Station Road	MCC	Prime	Thurs 29th Sept 2022
St Benedict Rd south of Beech Gr/Hawthorne Gr	ATC	Prime	Wed 28th Sept - Tue 4th Oct 2022
Billy Road/Station Road	MCC	Systra	Thurs 17th Nov 2022
St Benedict Rd/Beech Gr/Hawthorne Gr	MCC	Systra	Thurs 17th Nov 2022
Summer Model			
Billy Road/Station Road	MCC	Systra	Fri 5th Aug 2022
St Benedict Rd/Beech Gr/Hawthorne Gr	MCC	Systra	Fri 5th Aug 2022

2.4.3 Average trip rates have been derived from the above. Only the Tuesday, Wednesday and Thursday data from the ATC was used given that Mondays and Friday are not considered to be fully neutral.

2.4.4 A site-by-site results summary is provided in Appendix II. The raw survey data can be provided in Excel form to all parties on request.

Neutral Month Model Trip Rates

2.4.5 A summary of the neutral month model trip rates which are an average of all sources is provided in Table 2.4. The network peak and school PM peak hours are highlighted in bold font.

Table 2.4: Local Trip Rate Summary – Neutral Month Model

TIME	ARRIVALS	DEPARTURES	TOTAL
0700 - 0800	0.058	0.269	0.327
0800 - 0900	0.211	0.446	0.657
0900 - 1000	0.112	0.172	0.283
1000 - 1100	0.150	0.181	0.331
1100 - 1200	0.137	0.157	0.294
1200 - 1300	0.176	0.157	0.334
1300 - 1400	0.163	0.175	0.338
1400 - 1500	0.211	0.179	0.391
1500 - 1600	0.307	0.216	0.524
1600 - 1700	0.322	0.202	0.524
1700 - 1800	0.396	0.265	0.661
1800 - 1900	0.224	0.154	0.378
12-HOUR	2.469	2.572	5.041

- 2.4.6 The network peak hour trip rates are notably higher than what average TRICS based rates would show, as the total rates would typically be circa 0.500. The above rates are more in line with TRICS 85th percentile rates and should be considered to be particularly robust.

Summer Model Trip Rates

- 2.4.7 A summary of the summer model trip rates which are an average of both sources is provided in Table 2.5. The traditional residential/network peaks and summer peak hours are highlighted in bold font.

Table 2.5: Local Trip Rate Summary – Summer Model

TIME	ARRIVALS	DEPARTURES	TOTAL
0700 - 0800	0.049	0.123	0.172
0800 - 0900	0.054	0.194	0.248
0900 - 1000	0.096	0.203	0.299
1000 - 1100	0.149	0.196	0.346
1100 - 1200	0.129	0.157	0.285
1200 - 1300	0.235	0.185	0.420
1300 - 1400	0.158	0.158	0.317
1400 - 1500	0.211	0.197	0.408
1500 - 1600	0.176	0.150	0.326
1600 - 1700	0.243	0.140	0.383
1700 - 1800	0.283	0.167	0.451
1800 - 1900	0.237	0.217	0.455
1900 - 2000	0.147	0.107	0.254
13-HOUR	2.167	2.195	4.362

- 2.4.8 The above rates are much lower than the neutral month model rates and as such the development impact is likely to be lesser. However given that the baseline traffic flows could be higher, there is potential for the cumulative impact to be greater in the summer model. This will be subject to further investigations. The trip rates have been accepted by HCC and NH following review.

2.5 Development Trip Distribution

- 2.5.1 We are content for the distribution used in the 2019 model to be re-used. This was based on the use of observed distributions from appropriate neighbouring areas (proxy zones).

2.6 Assessment Scenarios

- 2.6.1 It is likely that the following assessment scenarios will be required for each of the assessment years (2025 and 2035) subject to further investigation regarding the summer model:

Future Year Reference Case Model Development:

- a. A Summer scenario representing the AM and PM residential peak periods and the AM summer period (assumed to be 1100-1200).
- b. A Neutral Month model scenario representing the AM and PM peak periods and the school PM peak period (assumed to be 1500-1600).
- c. Both Summer and Neutral Month scenarios will account for committed developments identified by HBC that are beyond the 4 specified developments for testing.
- d. Both Summer and Neutral Month models should include TEMPro and NRTP growth for non-island movement as detailed in Section 2.2.
- e. Both Summer and Neutral Month scenarios will include network coding changes required to represent future year changes associated with committed developments and infrastructure.

Development Scenario Testing:

- 2.6.2 Using the Reference Case models (2025 and 2035) as a start point, for both Summer and Neutral Month, and each forecast year:
- a. A Development scenario model will be developed to include the Rook Farm development
 - b. A Development scenario model will be developed to include the Fathom's Reach development
 - c. A Development scenario model will be developed to include the 2x Hayling Builder's developments
 - d. A Development scenario model will be developed to include all 4 development sites.
- 2.6.3 Using the Reference Case + All Developments scenarios as a start point, both Summer and Neutral Month and each forecast year:
- a. A single mitigation scenario will be developed representing the preferred Hayling Island LDP mitigation package. The details of the package will be agreed with HBC/HCC.

Model Runs & Analysis (Deliverables):

- a. All model runs will be conducted for the full 12hr (neutral month) and 13hr (summer) modelled periods.
- b. Model outputs will be collected for journey times, turn counts, and queue lengths at core locations, and collated by hour, with the peak hour results highlighted/extracted.
- c. A model development and scenario testing report will be developed summarising method and results.

3 NEXT STEPS

- 3.1.1 Systra have now been instructed to commence the work.
- 3.1.2 Model Development Report to be shared with HCC and NH following release by HBC.
- 3.1.3 The three authorities will be updated at appropriate times.

APPENDIX I

NRTP CALCULATIONS

Table 2a: Road traffic projections (billion vehicle miles, bvm) from 2015 to 2060

Vehicle Type	Road Type	Country	Region	Traffic - Billion Vehicle miles (bvm)								
				2015	2020	2025	2030	2035	2040	2045	2050	2055
south east	trunk	hgv	South East	0.4554		0.4811	0.4945	0.5046	0.5199	0.5320	0.5407	0.5486
HGV												
				Year	5 Year Value	5 Year Diff	Linear Diff	Increment	1 Year Value	Check	Factor	
				2015	0.4554	0.0257	0.0026		0.4554			
				2016				1	0.4580			
				2017				2	0.4606			
				2018				3	0.4631			
				2019				4	0.4657			
				2020	0.0000			5	0.4683			
				2021				6	0.4708			
				2022				7	0.4734			
				2023				8	0.4760			
				2024				9	0.4786		22-25	
				2025	0.4811	0.0134	0.0027	10	0.4811	0.0000	1.0163	
				2026				1	0.4838			
				2027				2	0.4865			
				2028				3	0.4892			
				2029				4	0.4919			
				2030	0.4945	0.0101	0.0020	5	0.4945	0.0000		
				2031				1	0.4966		22-32	
				2032				2	0.4986		1.0531	
				2033				3	0.5006			
				2034				4	0.5026			
				2035	0.5046	0.0153	0.0031	5	0.5046	0.0000		
				2036				1	0.5077			
				2037				2	0.5108			
				2038				3	0.5138			
				2039				4	0.5169			
				2040	0.5199	0.0120	0.0024	5	0.5199	0.0000		
				2041				1	0.5223			
				2042				2	0.5247			
				2043				3	0.5272			
				2044				4	0.5296			
				2045	0.5320	0.0087	0.0017	5	0.5320	0.0000		
				2046				1	0.5337			
				2047				2	0.5355			
				2048				3	0.5372			
				2049				4	0.5389			
				2050	0.5407	0.0079	0.0016	5	0.5407	0.0000		

APPENDIX II

LOCAL TRIP RATE SITE SUMMARY

NEUTRAL MONTH TRIP RATES

Location Billy Road
Date Thursday 29th September 2022
Source Prime MCC

TIME	ARRIVALS	DEPARTURE	TOTAL
0700 - 0800	0.039	0.312	0.351
0800 - 0900	0.273	0.455	0.727
0900 - 1000	0.130	0.169	0.299
1000 - 1100	0.104	0.104	0.208
1100 - 1200	0.091	0.130	0.221
1200 - 1300	0.117	0.130	0.247
1300 - 1400	0.182	0.130	0.312
1400 - 1500	0.156	0.169	0.325
1500 - 1600	0.273	0.234	0.506
1600 - 1700	0.286	0.195	0.481
1700 - 1800	0.377	0.286	0.662
1800 - 1900	0.195	0.169	0.364
12-HOUR	2.221	2.481	4.701

Location Billy Road
Date Thursday 17th November 2022
Source Systra Turning Count

TIME	ARRIVALS	DEPARTURE	TOTAL
0700 - 0800	0.052	0.247	0.299
0800 - 0900	0.247	0.442	0.688
0900 - 1000	0.091	0.143	0.234
1000 - 1100	0.156	0.247	0.403
1100 - 1200	0.143	0.156	0.299
1200 - 1300	0.208	0.104	0.312
1300 - 1400	0.156	0.195	0.351
1400 - 1500	0.182	0.182	0.364
1500 - 1600	0.351	0.247	0.597
1600 - 1700	0.364	0.299	0.662
1700 - 1800	0.429	0.325	0.753
1800 - 1900	0.273	0.182	0.455
12-HOUR	2.649	2.766	5.416

Location St Benedict Road
Date Wed 28th Sept 2022
Source Prime ATC

TIME	ARRIVALS	DEPARTURE	TOTAL
0700 - 0800	0.046	0.282	0.328
0800 - 0900	0.183	0.435	0.618
0900 - 1000	0.107	0.198	0.305
1000 - 1100	0.183	0.214	0.397
1100 - 1200	0.168	0.176	0.344
1200 - 1300	0.206	0.168	0.374
1300 - 1400	0.130	0.214	0.344
1400 - 1500	0.221	0.130	0.351
1500 - 1600	0.290	0.183	0.473
1600 - 1700	0.359	0.198	0.557
1700 - 1800	0.397	0.282	0.679
1800 - 1900	0.267	0.145	0.412
12-HOUR	2.557	2.626	5.183

Location St Benedict Road
Date Thur 29th Sept 2022
Source Prime ATC

TIME	ARRIVALS	DEPARTURE	TOTAL
0700 - 0800	0.076	0.275	0.351
0800 - 0900	0.176	0.435	0.611
0900 - 1000	0.137	0.198	0.336
1000 - 1100	0.168	0.229	0.397
1100 - 1200	0.229	0.160	0.389
1200 - 1300	0.176	0.168	0.344
1300 - 1400	0.130	0.191	0.321
1400 - 1500	0.275	0.176	0.450
1500 - 1600	0.282	0.198	0.481
1600 - 1700	0.252	0.183	0.435
1700 - 1800	0.397	0.214	0.611
1800 - 1900	0.198	0.176	0.374
12-HOUR	2.496	2.603	5.099

Location St Benedict Road
Date Tue 4th Oct 2022
Source Prime ATC

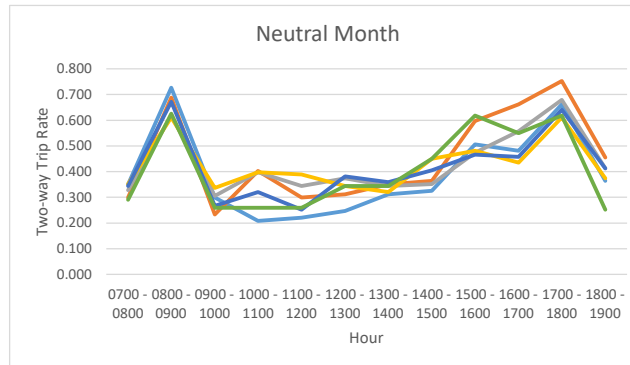
TIME	ARRIVALS	DEPARTURE	TOTAL
0700 - 0800	0.053	0.290	0.344
0800 - 0900	0.198	0.473	0.672
0900 - 1000	0.099	0.168	0.267
1000 - 1100	0.168	0.153	0.321
1100 - 1200	0.107	0.145	0.252
1200 - 1300	0.176	0.206	0.382
1300 - 1400	0.191	0.168	0.359
1400 - 1500	0.214	0.191	0.405
1500 - 1600	0.298	0.168	0.466
1600 - 1700	0.328	0.130	0.458
1700 - 1800	0.374	0.267	0.641
1800 - 1900	0.244	0.168	0.412
12-HOUR	2.450	2.527	4.977

Location St Benedict Road
Date Thursday 17th November 2022
Source Systra Turning Count

TIME	ARRIVALS	DEPARTURE	TOTAL
0700 - 0800	0.084	0.206	0.290
0800 - 0900	0.191	0.435	0.626
0900 - 1000	0.107	0.153	0.260
1000 - 1100	0.122	0.137	0.260
1100 - 1200	0.084	0.176	0.260
1200 - 1300	0.176	0.168	0.344
1300 - 1400	0.191	0.153	0.344
1400 - 1500	0.221	0.229	0.450
1500 - 1600	0.351	0.267	0.618
1600 - 1700	0.344	0.206	0.550
1700 - 1800	0.405	0.214	0.618
1800 - 1900	0.168	0.084	0.252
12-HOUR	2.443	2.427	4.870

Location Both Averaged
Date Various
Source Various

TIME	ARRIVALS	DEPARTURE	TOTAL
0700 - 0800	0.058	0.269	0.327
0800 - 0900	0.211	0.446	0.657
0900 - 1000	0.112	0.172	0.283
1000 - 1100	0.150	0.181	0.331
1100 - 1200	0.137	0.157	0.294
1200 - 1300	0.176	0.157	0.334
1300 - 1400	0.163	0.175	0.338
1400 - 1500	0.211	0.179	0.391
1500 - 1600	0.307	0.216	0.524
1600 - 1700	0.322	0.202	0.524
1700 - 1800	0.396	0.265	0.661
1800 - 1900	0.224	0.154	0.378
12-HOUR	2.469	2.572	5.041



Location Billy Road
 Date Fri 5th August
 Source Systra Turning Count

TIME	ARRIVALS	DEPARTURES	TOTAL
0700 - 0800	0.052	0.117	0.169
0800 - 0900	0.039	0.182	0.221
0900 - 1000	0.039	0.169	0.208
1000 - 1100	0.169	0.156	0.325
1100 - 1200	0.143	0.130	0.273
1200 - 1300	0.195	0.156	0.351
1300 - 1400	0.156	0.195	0.351
1400 - 1500	0.247	0.234	0.481
1500 - 1600	0.130	0.156	0.286
1600 - 1700	0.273	0.143	0.416
1700 - 1800	0.338	0.182	0.519
1800 - 1900	0.208	0.221	0.429
1900 - 2000	0.156	0.130	0.286
13-HOUR	2.143	2.169	4.312

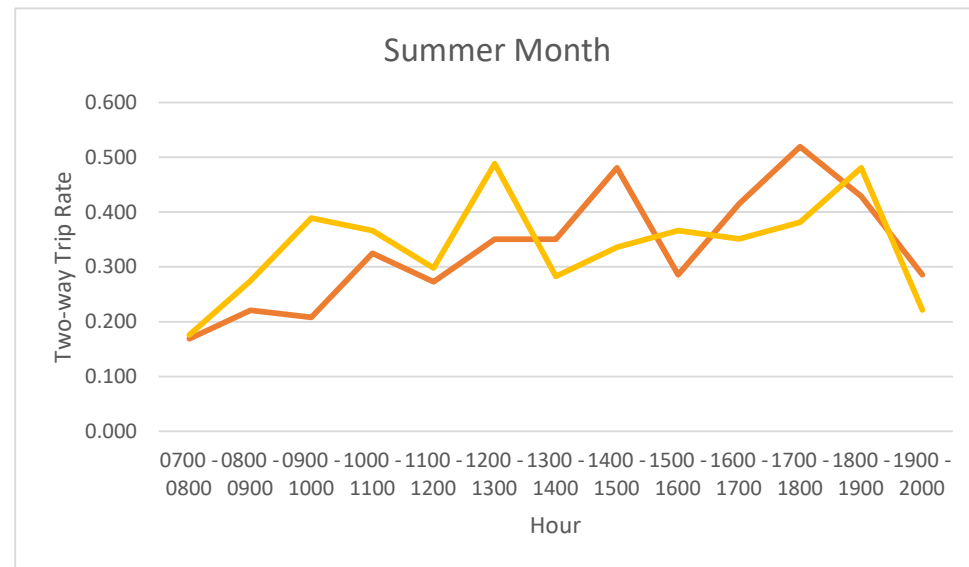
SUMMER TRIP RATES

Location St Benedict Road
 Date Fri 5th August
 Source Systra Turning Count

TIME	ARRIVALS	DEPARTURES	TOTAL
0700 - 0800	0.046	0.130	0.176
0800 - 0900	0.069	0.206	0.275
0900 - 1000	0.153	0.237	0.389
1000 - 1100	0.130	0.237	0.366
1100 - 1200	0.115	0.183	0.298
1200 - 1300	0.275	0.214	0.489
1300 - 1400	0.160	0.122	0.282
1400 - 1500	0.176	0.160	0.336
1500 - 1600	0.221	0.145	0.366
1600 - 1700	0.214	0.137	0.351
1700 - 1800	0.229	0.153	0.382
1800 - 1900	0.267	0.214	0.481
1900 - 2000	0.137	0.084	0.221
13-HOUR	2.191	2.221	4.412

Location Both Averaged
 Date Various
 Source Various

TIME	ARRIVALS	DEPARTURES	TOTAL
0700 - 0800	0.049	0.123	0.172
0800 - 0900	0.054	0.194	0.248
0900 - 1000	0.096	0.203	0.299
1000 - 1100	0.149	0.196	0.346
1100 - 1200	0.129	0.157	0.285
1200 - 1300	0.235	0.185	0.420
1300 - 1400	0.158	0.158	0.317
1400 - 1500	0.211	0.197	0.408
1500 - 1600	0.176	0.150	0.326
1600 - 1700	0.243	0.140	0.383
1700 - 1800	0.283	0.167	0.451
1800 - 1900	0.237	0.217	0.455
1900 - 2000	0.147	0.107	0.254
13-HOUR	2.167	2.195	4.362



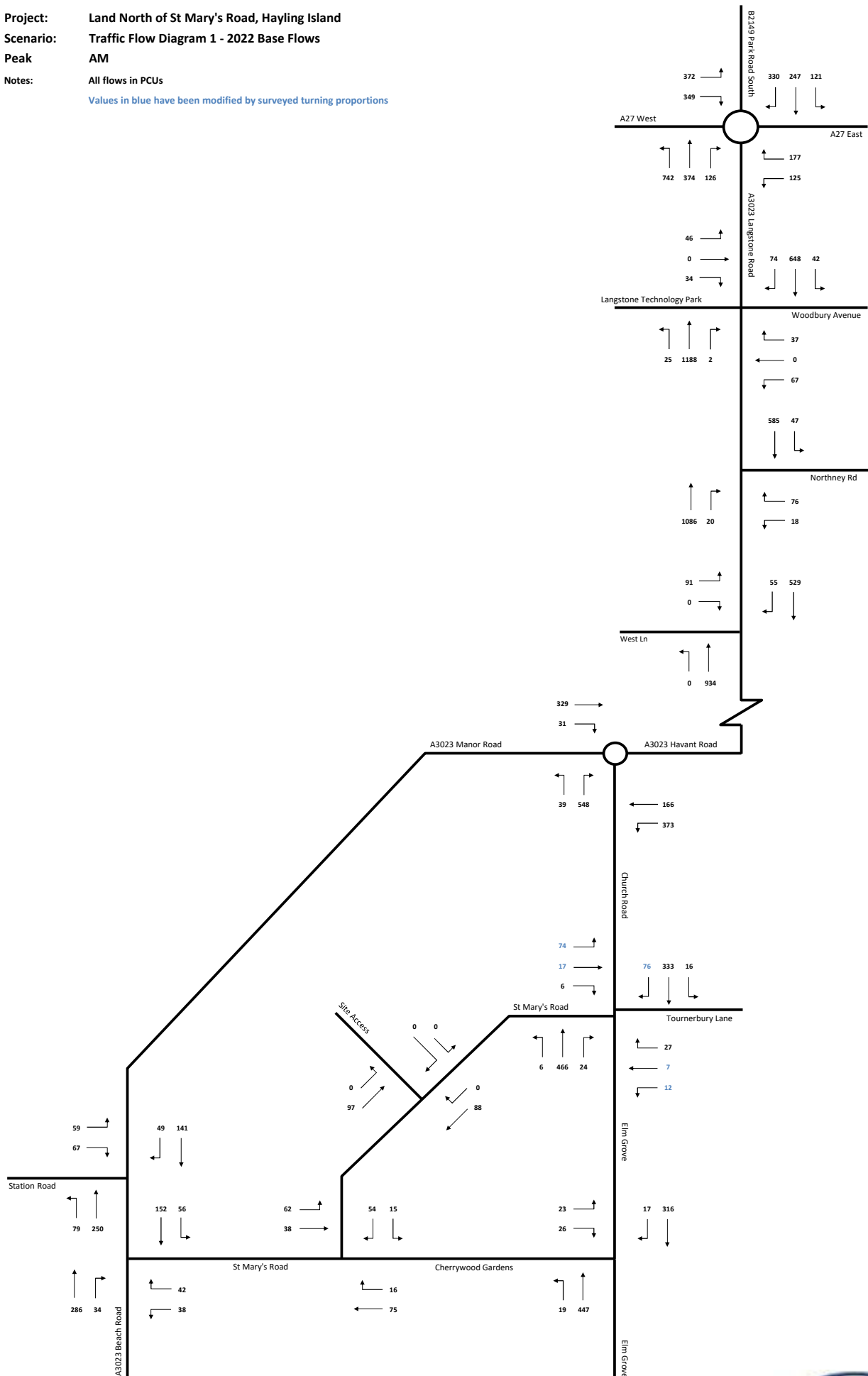
APPENDIX I

TRAFFIC FLOW DIAGRAMS

Traffic Flow Diagrams			
Reference	Scenario	Peak	Derivation
1	Traffic Flow Diagram 1 - 2022 Base Flows	AM	Microsim Surveys
2	Traffic Flow Diagram 2 - 2022 Base Flows	IP	Microsim Surveys
3	Traffic Flow Diagram 3 - 2022 Base Flows	PM	Microsim Surveys
4	Traffic Flow Diagram 4 - 2035 Reference Case Flows	AM	Microsim+TEMPro
5	Traffic Flow Diagram 5 - 2035 Reference Case Flows	IP	Microsim+TEMPro
6	Traffic Flow Diagram 6 - 2035 Reference Case Flows	PM	Microsim+TEMPro
7	Traffic Flow Diagram 7 - 2035 With Dev Flows (Scenario 1)	AM	Microsim+TEMPro+Rook Farm
8	Traffic Flow Diagram 8 - 2035 With Dev Flows (Scenario 1)	IP	Microsim+TEMPro+Rook Farm
9	Traffic Flow Diagram 9 - 2035 With Dev Flows (Scenario 1)	PM	Microsim+TEMPro+Rook Farm
10	Traffic Flow Diagram 10 - 2035 Cumulative Flows (Scenario 4)	AM	Microsim+TEMPro+LiveApps
11	Traffic Flow Diagram 11 - 2035 Cumulative Flows (Scenario 4)	IP	Microsim+TEMPro+LiveApps
12	Traffic Flow Diagram 12 - 2035 Cumulative Flows (Scenario 4)	PM	Microsim+TEMPro+LiveApps
13	Traffic Flow Diagram X1 - 2022 Observed Flows	AM	Surveys
14	Traffic Flow Diagram X2 - 2022 Observed Flows	IP	Surveys
15	Traffic Flow Diagram X3 - 2022 Observed Flows	PM	Surveys
16	Traffic Flow Diagram X4 - 2022 Observed Flows PCUs	AM	13
17	Traffic Flow Diagram X5 - 2022 Observed Flows PCUs	IP	14
18	Traffic Flow Diagram X6 - 2022 Observed Flows PCUs	PM	15
19	Traffic Flow Diagram X7 - 2035 Growth Only for Sensitivity Test	AM	10-1
20	Traffic Flow Diagram X8 - 2035 Growth Only for Sensitivity Test	IP	11-2
21	Traffic Flow Diagram X9 - 2035 Growth Only for Sensitivity Test	PM	13-3
22	Traffic Flow Diagram X10 - 2035 With Development Sensitivity Test	AM	13+19
23	Traffic Flow Diagram X11 - 2035 With Development Sensitivity Test	IP	14+20
24	Traffic Flow Diagram X12 - 2035 With Development Sensitivity Test	PM	15+21

Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram 1 - 2022 Base Flows
Peak AM

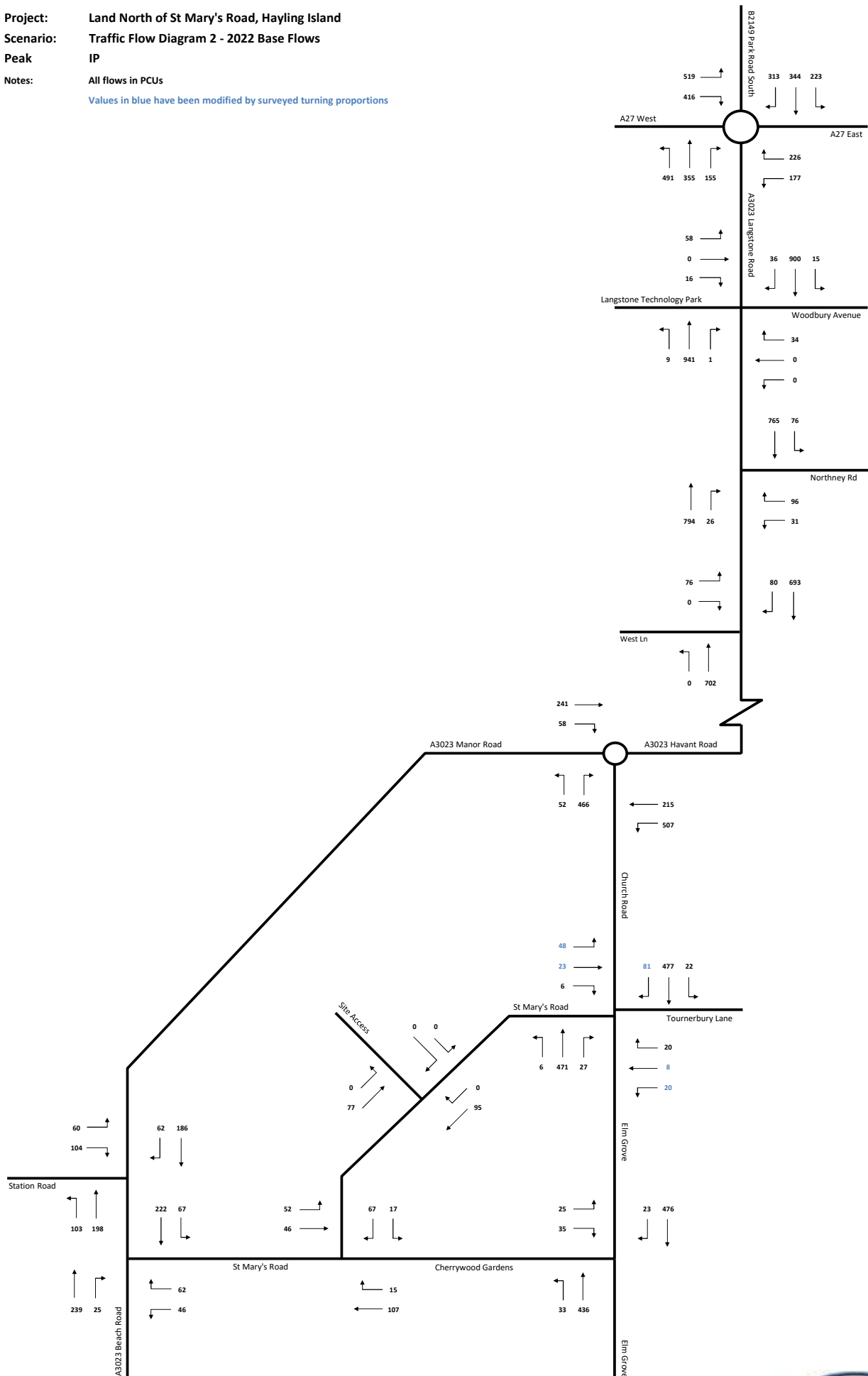
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram 2 - 2022 Base Flows
Peak IP

Notes: All flows in PCUs

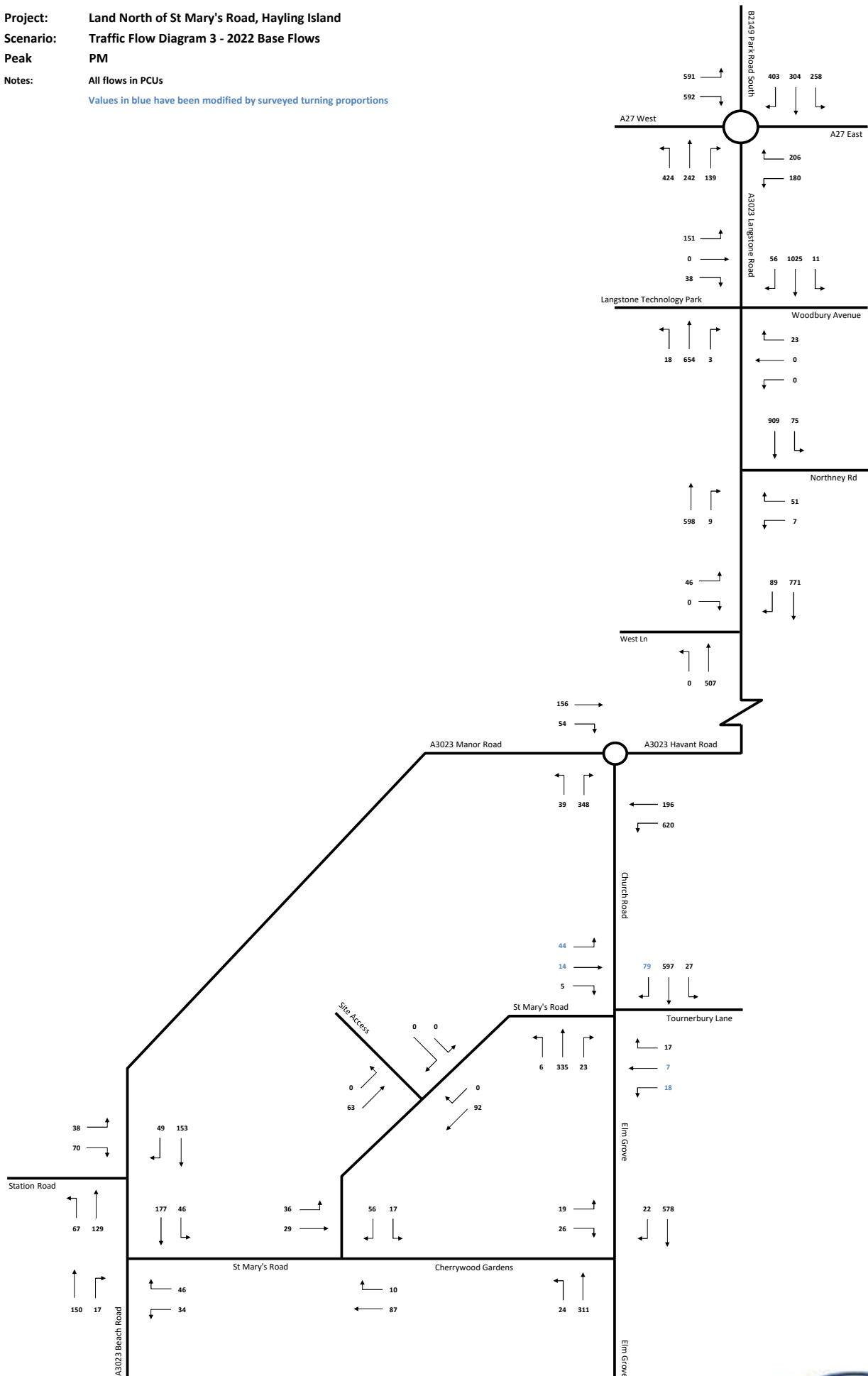
Values in blue have been modified by surveyed turning proportions



Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram 3 - 2022 Base Flows
Peak PM

Notes: All flows in PCUs

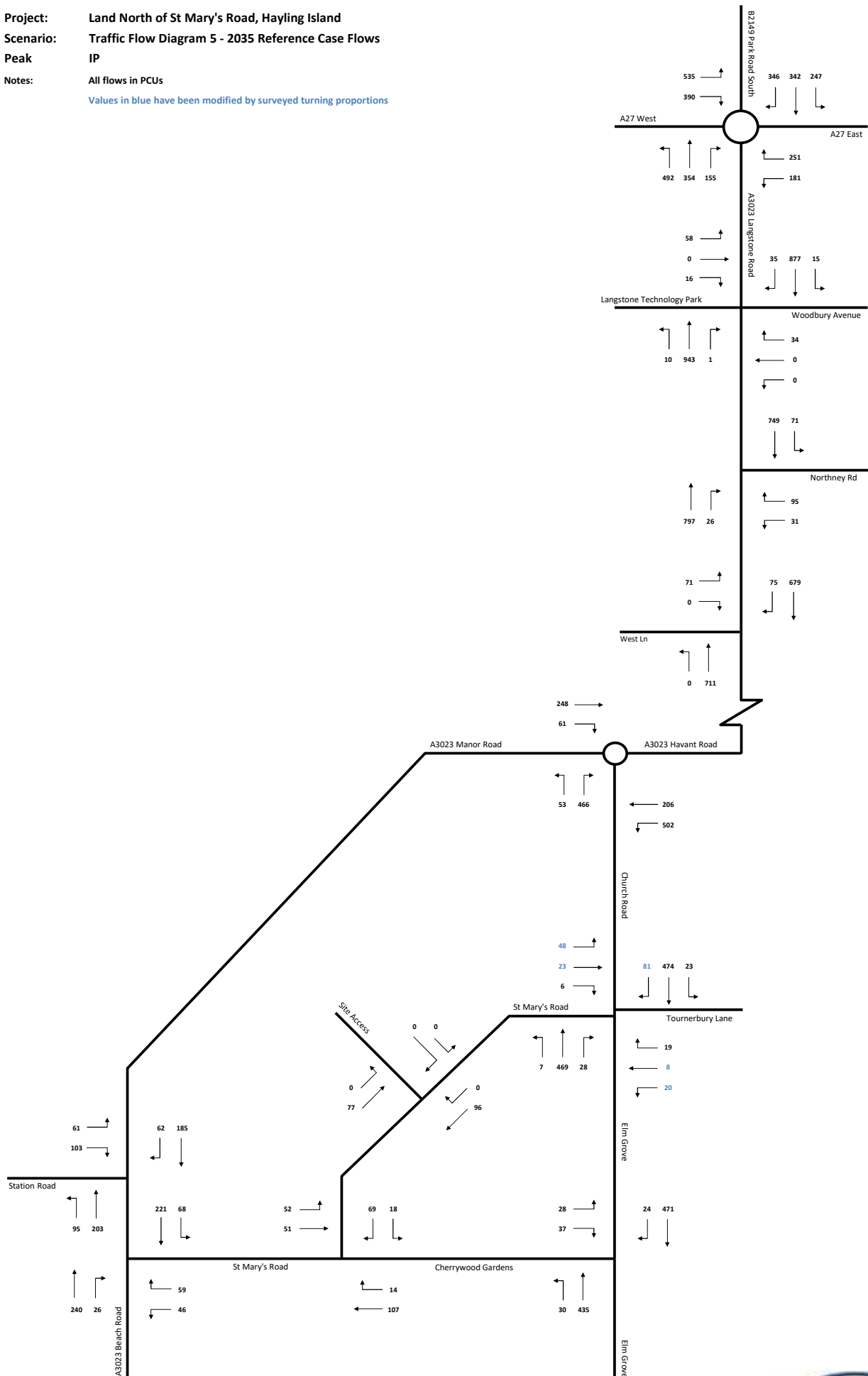
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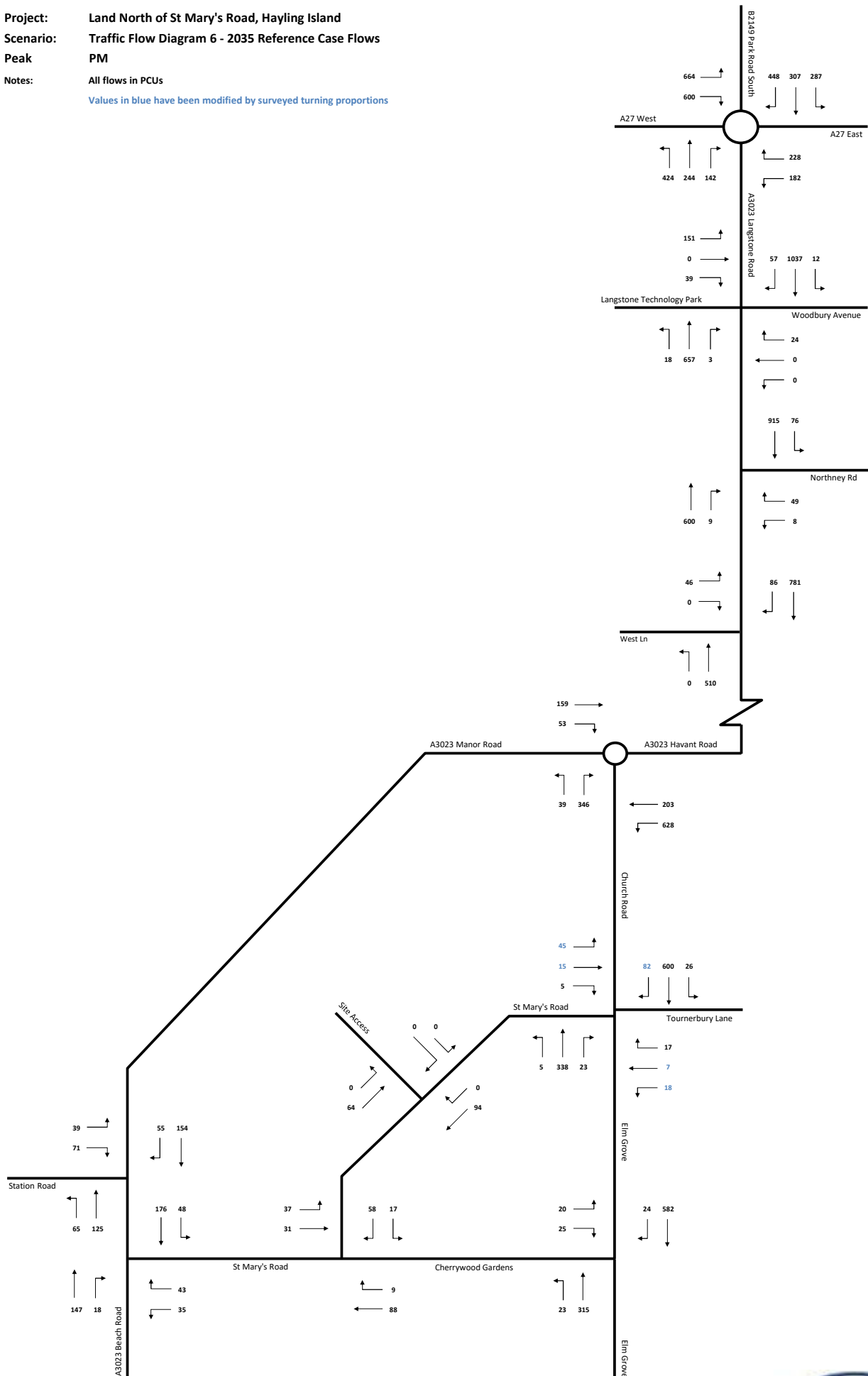
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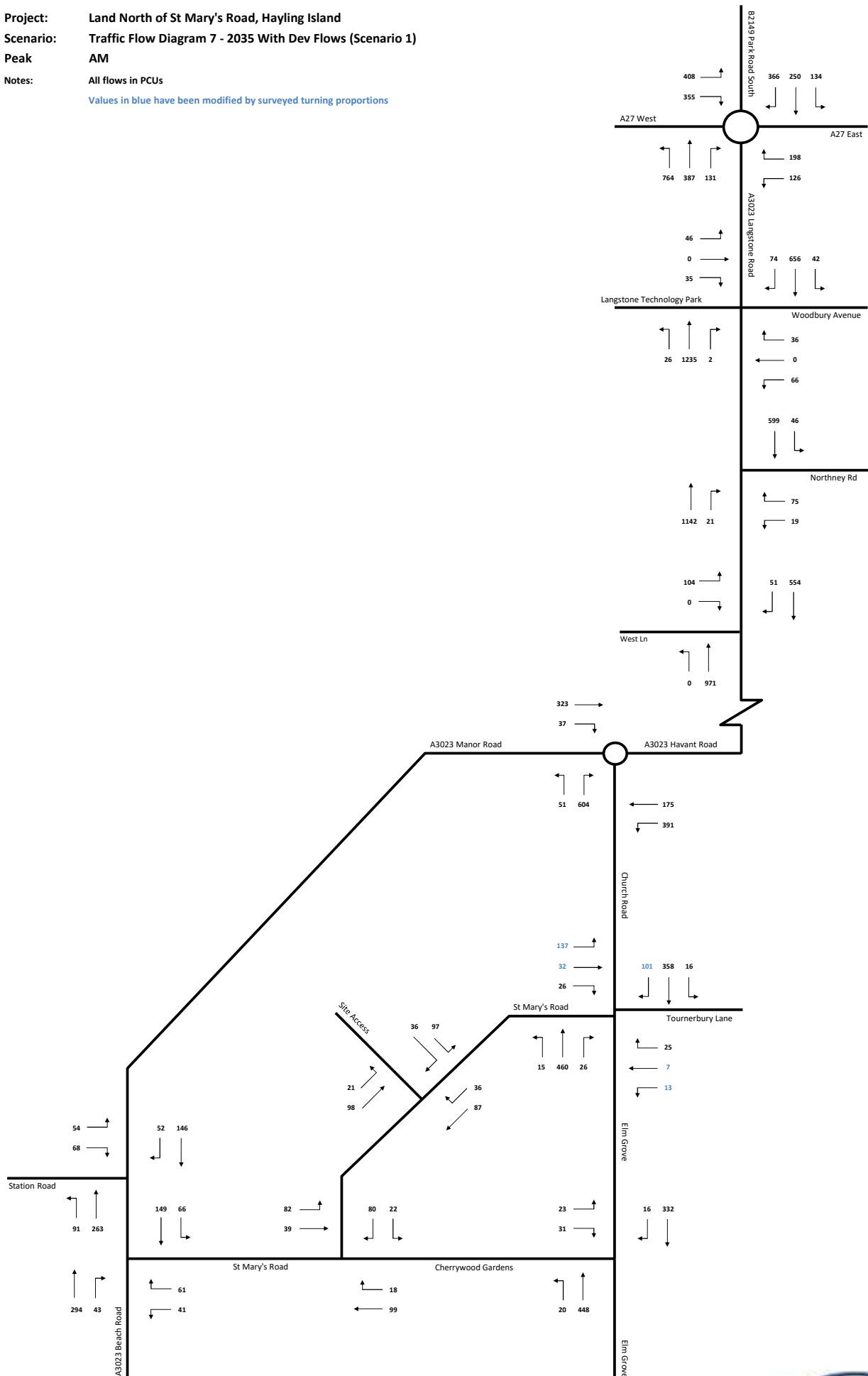
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram 5 - 2035 Reference Case Flows
Peak IP
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



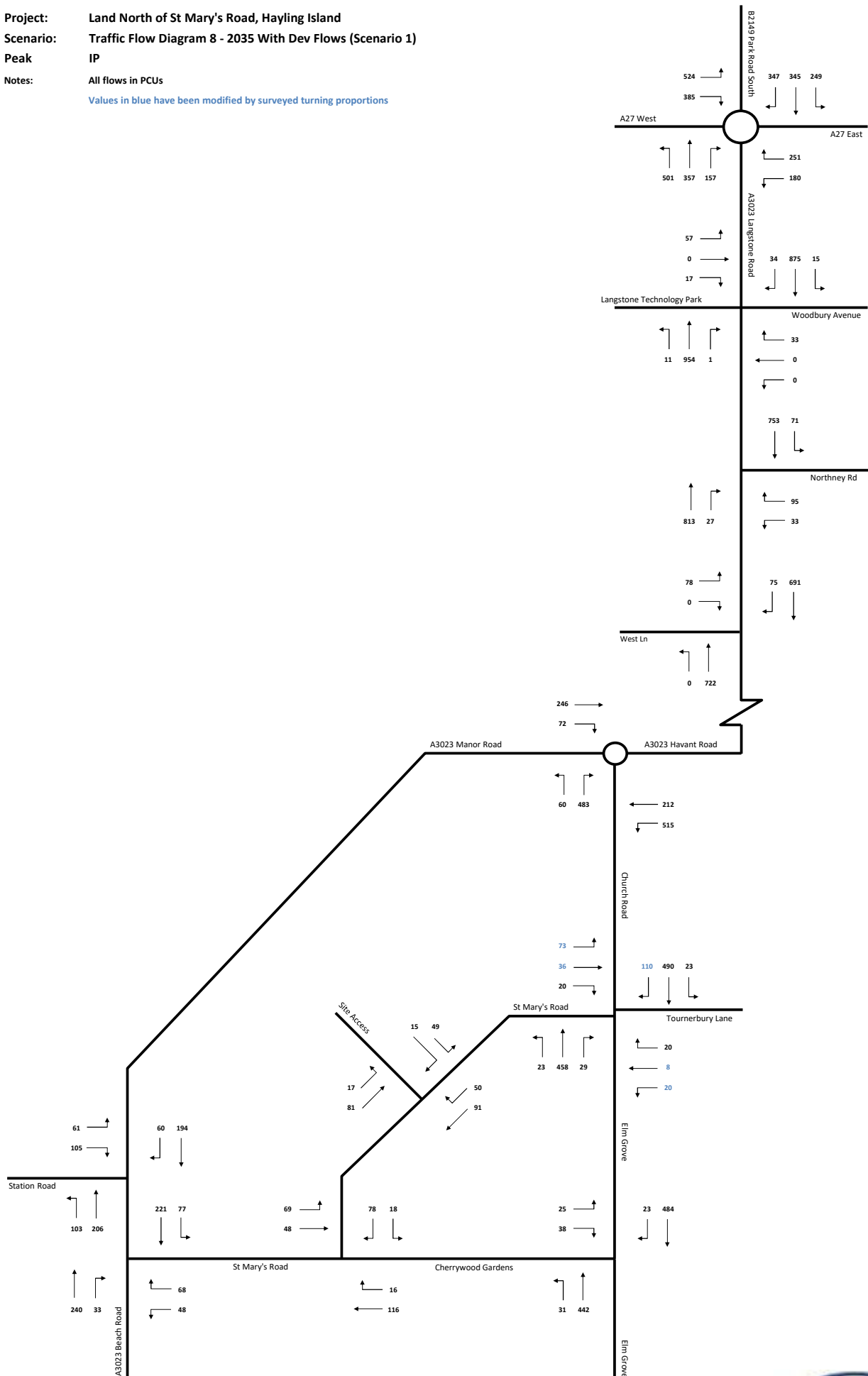
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram 6 - 2035 Reference Case Flows
Peak: PM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



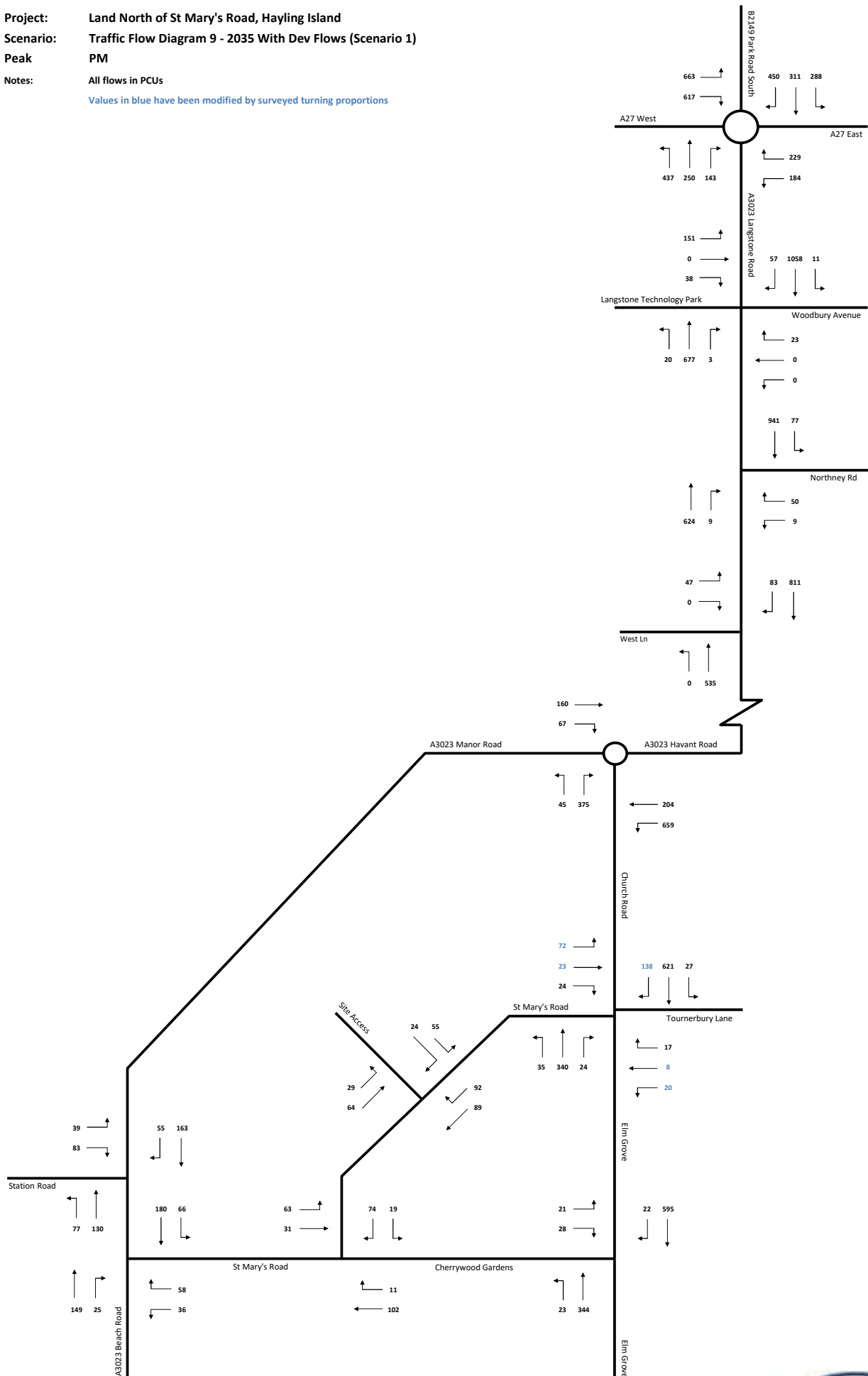
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram 7 - 2035 With Dev Flows (Scenario 1)
Peak AM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



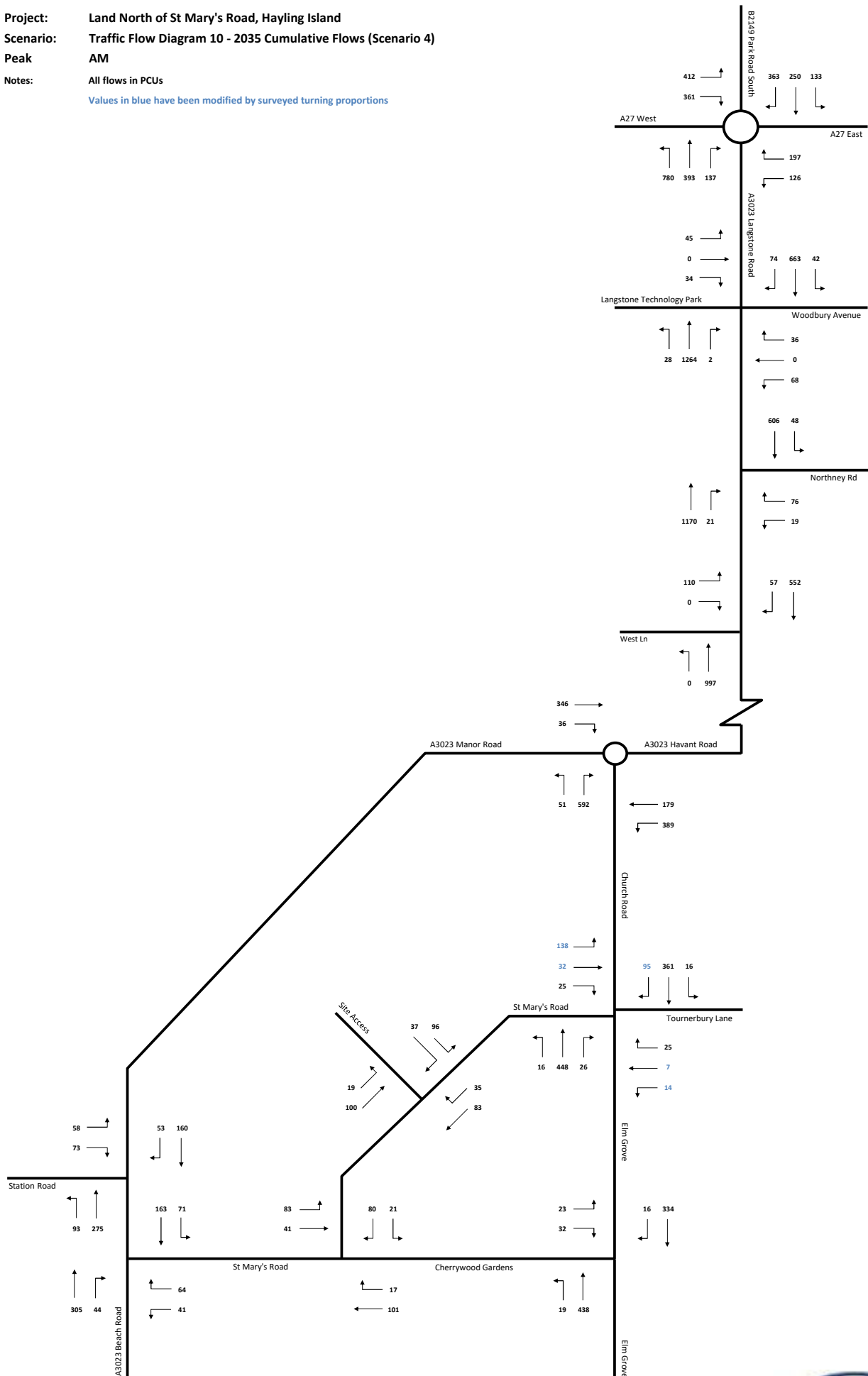
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram 8 - 2035 With Dev Flows (Scenario 1)
Peak IP
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



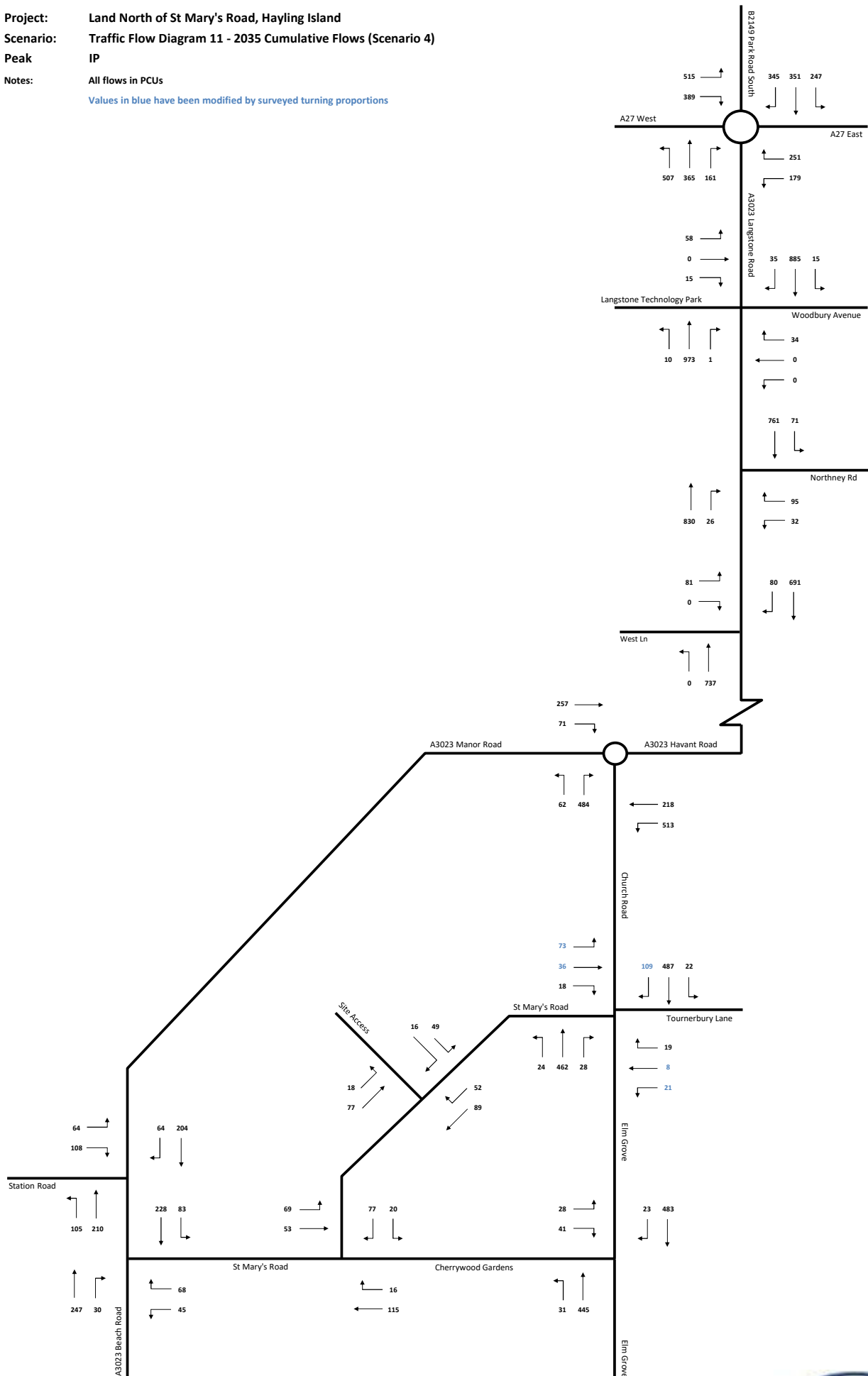
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram 9 - 2035 With Dev Flows (Scenario 1)
Peak: PM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



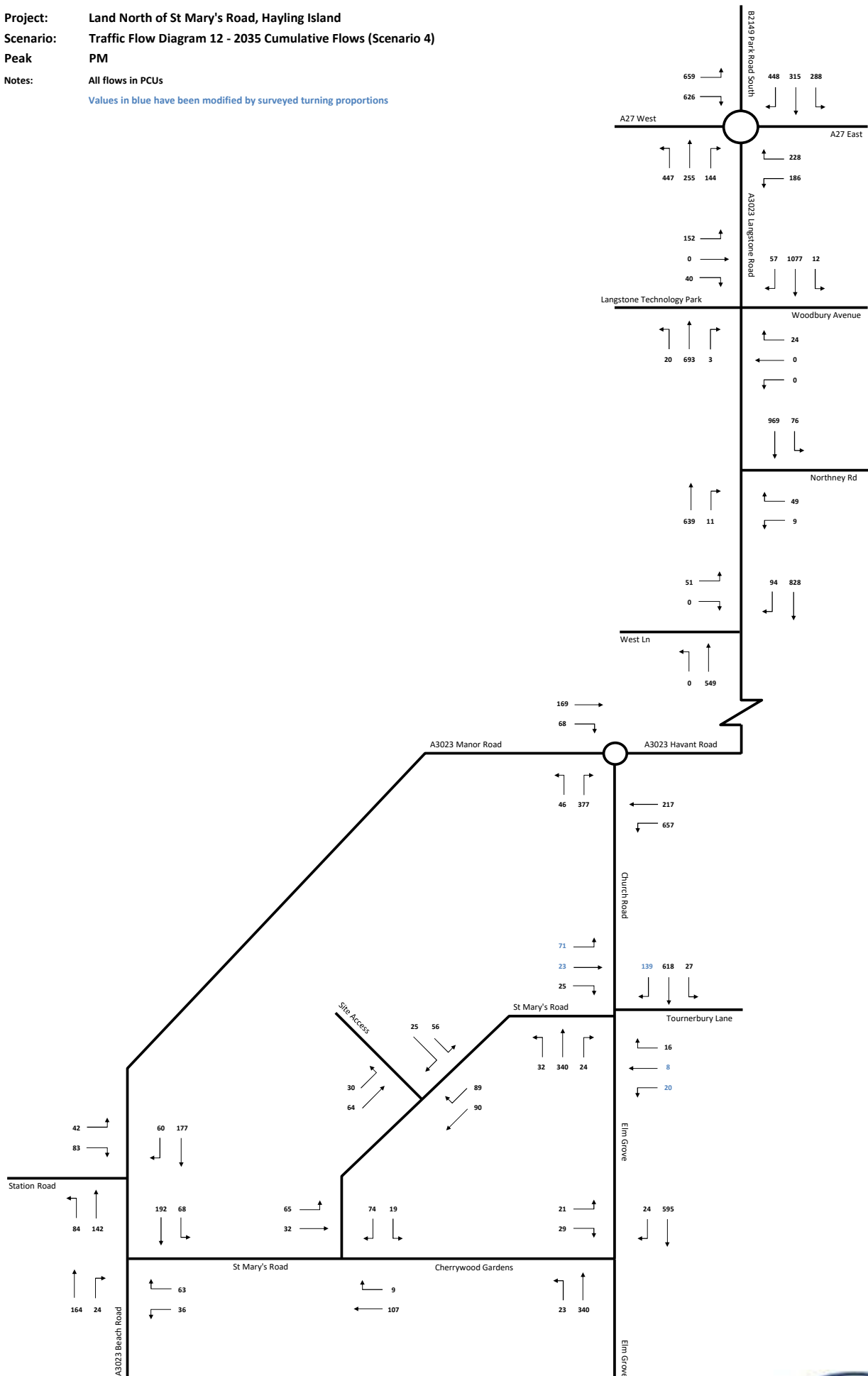
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram 10 - 2035 Cumulative Flows (Scenario 4)
Peak AM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



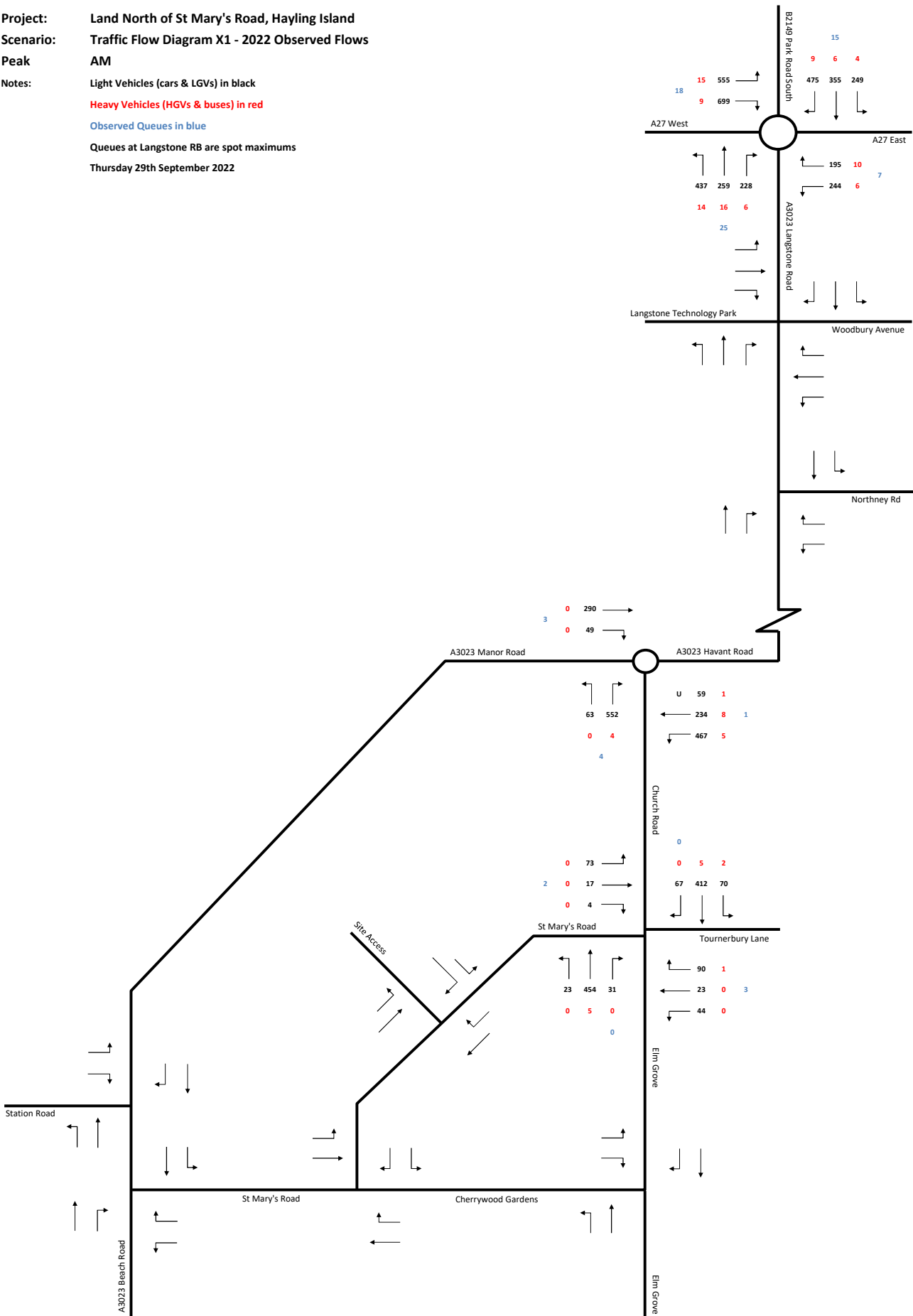
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram 11 - 2035 Cumulative Flows (Scenario 4)
Peak IP
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



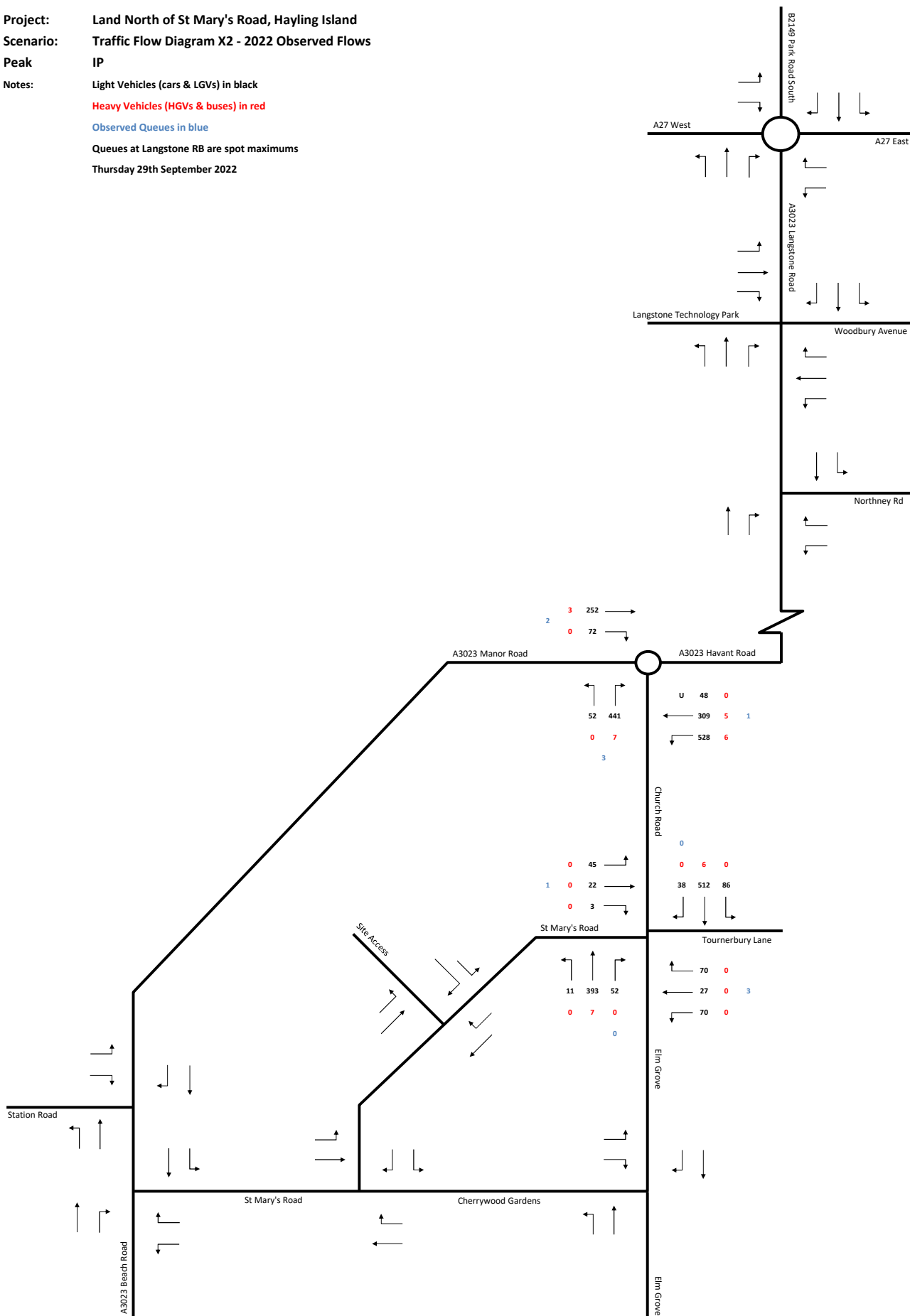
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram 12 - 2035 Cumulative Flows (Scenario 4)
Peak: PM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram X1 - 2022 Observed Flows
Peak AM
Notes: Light Vehicles (cars & LGVs) in black
Heavy Vehicles (HGVs & buses) in red
Observed Queues in blue
Queues at Langstone RB are spot maximums
Thursday 29th September 2022



Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram X2 - 2022 Observed Flows
Peak IP
Notes: Light Vehicles (cars & LGVs) in black
 Heavy Vehicles (HGVs & buses) in red
 Observed Queues in blue
 Queues at Langstone RB are spot maximums
 Thursday 29th September 2022



Project: Land North of St Mary's Road, Hayling Island

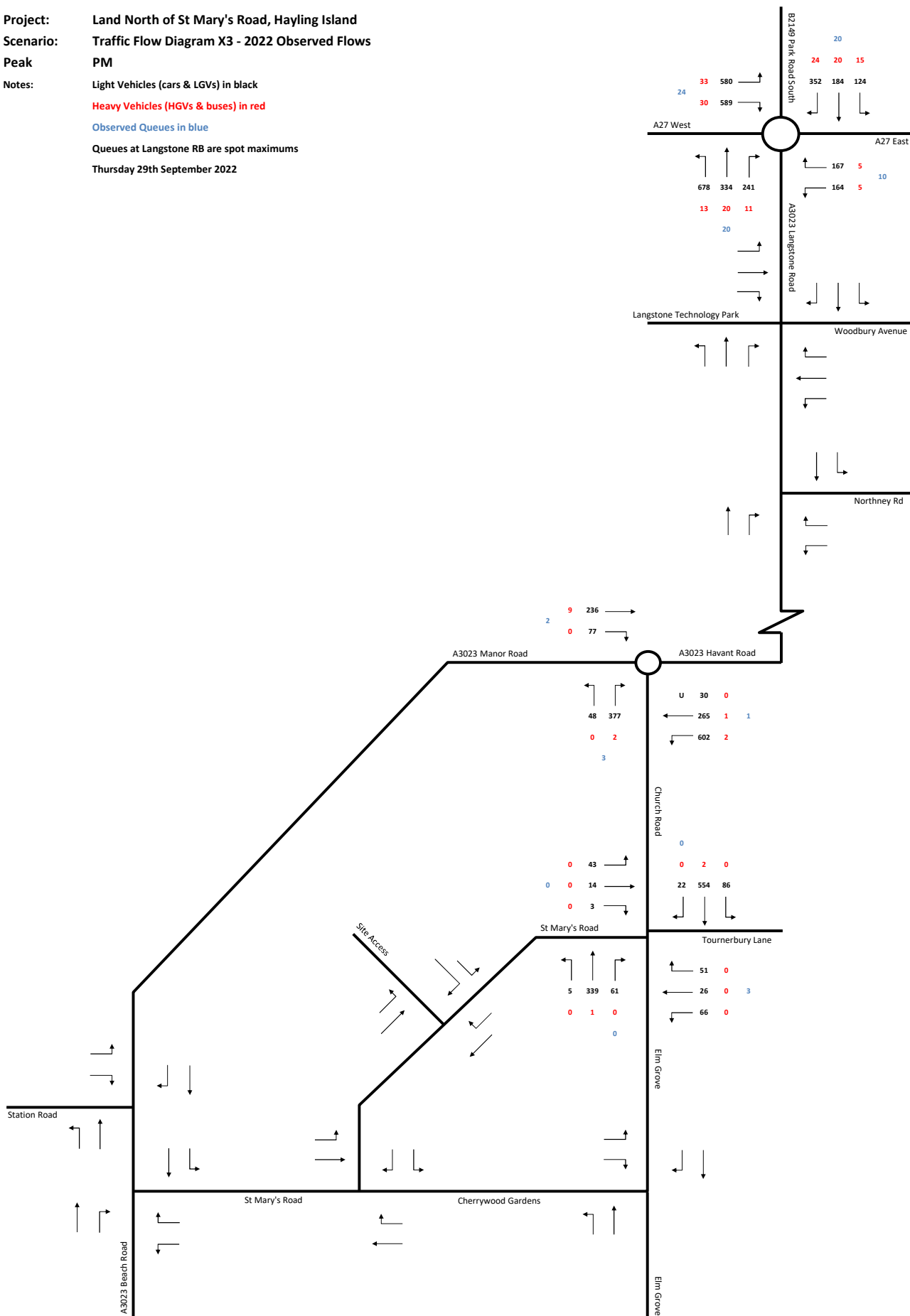
Scenario: Traffic Flow Diagram X3 - 2022 Observed Flows

Peak: PM

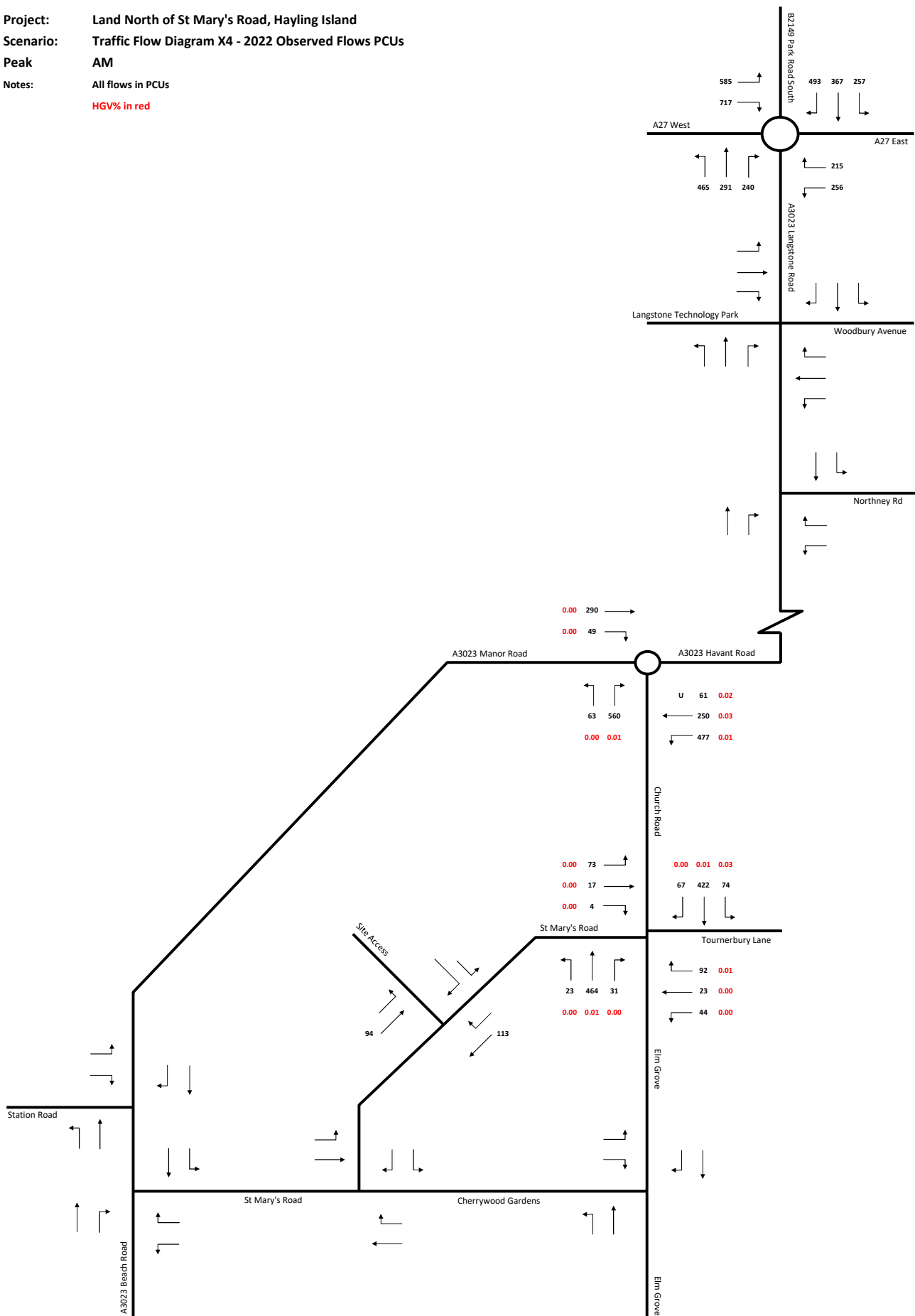
Notes: Light Vehicles (cars & LGVs) in black
Heavy Vehicles (HGVs & buses) in red
Observed Queues in blue

Queues at Langstone RB are spot maximums

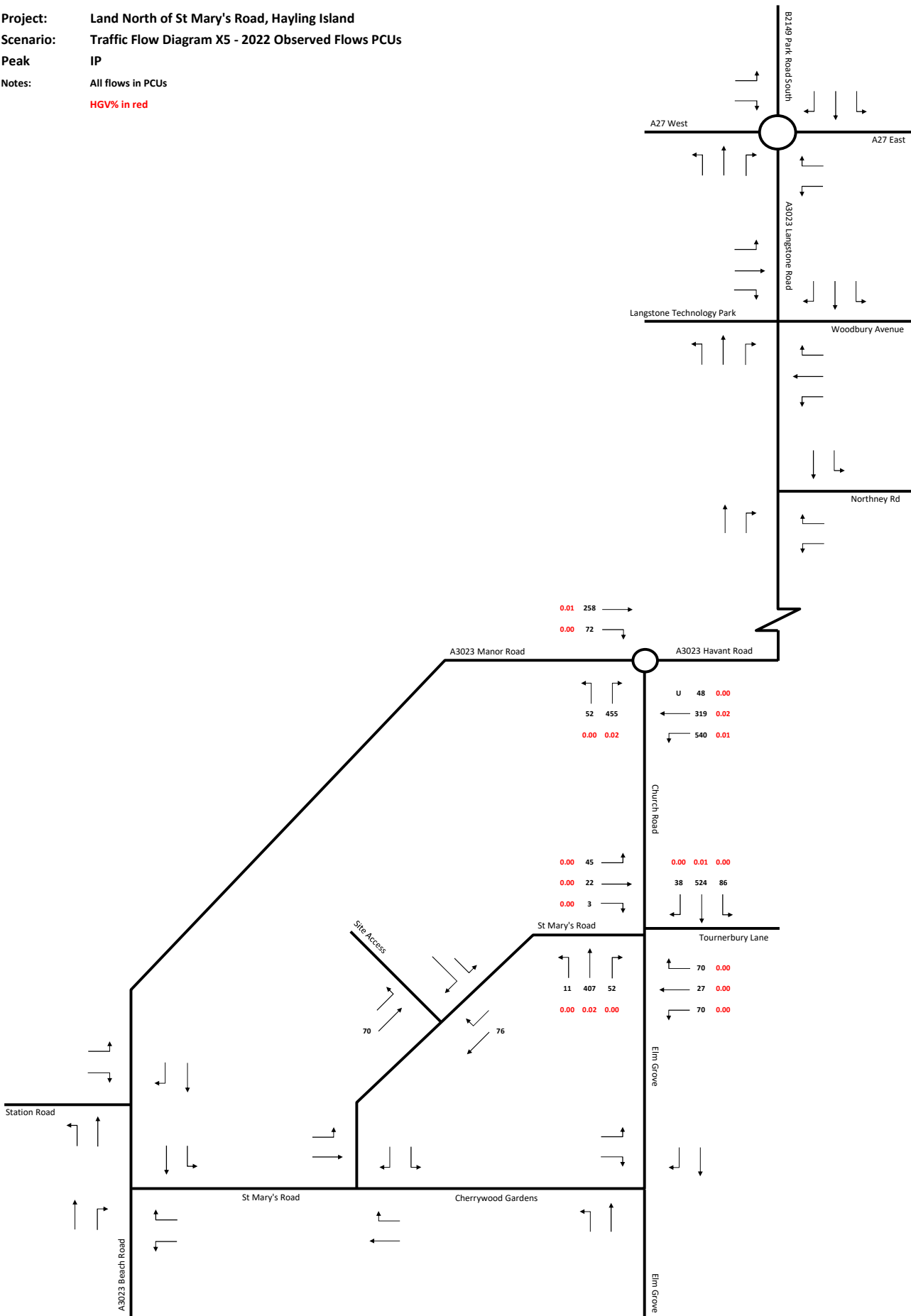
Thursday 29th September 2022



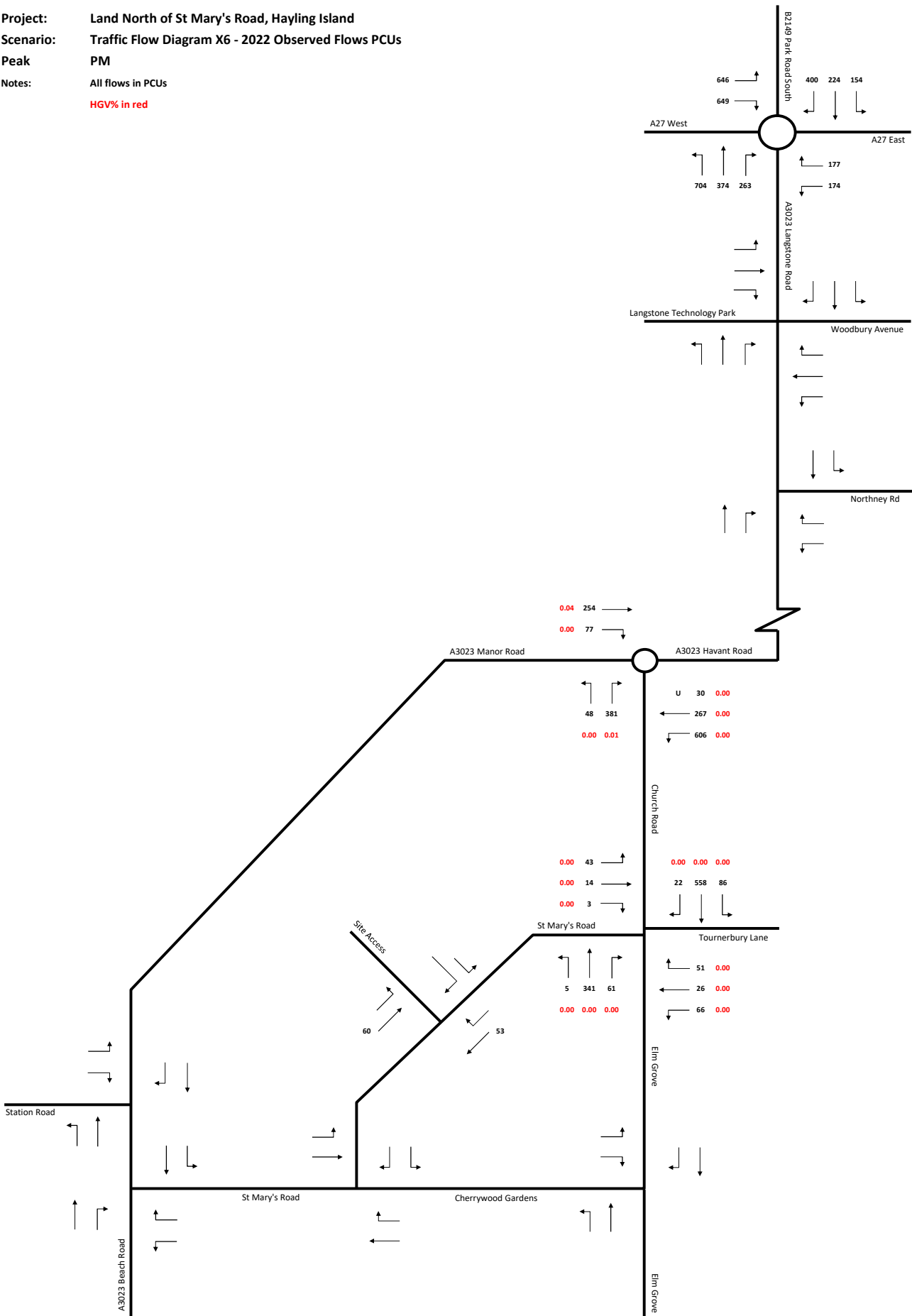
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram X4 - 2022 Observed Flows PCUs
Peak: AM
Notes: All flows in PCUs
 HGV% in red



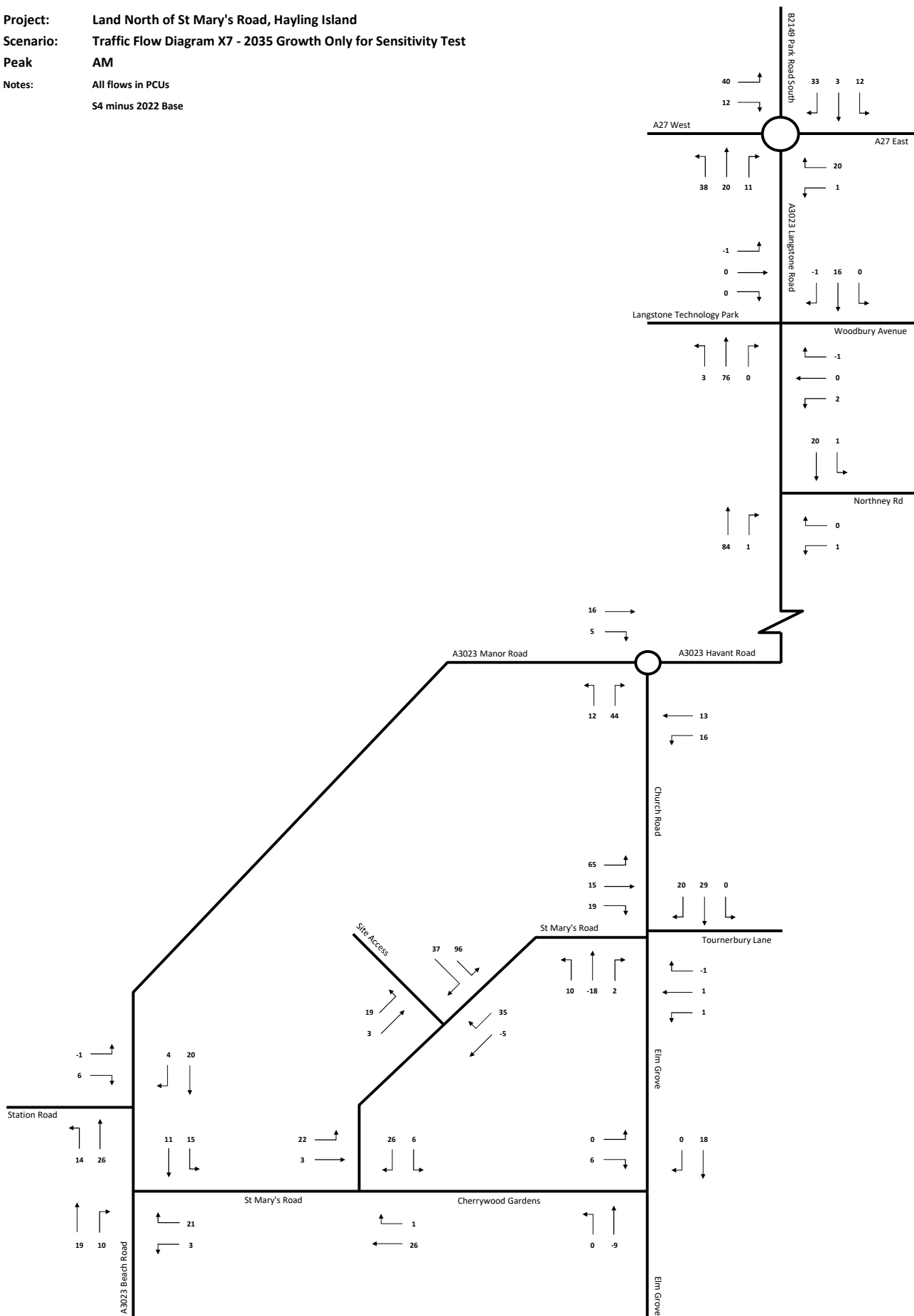
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram X5 - 2022 Observed Flows PCUs
Peak IP
Notes: All flows in PCUs
HGV% in red



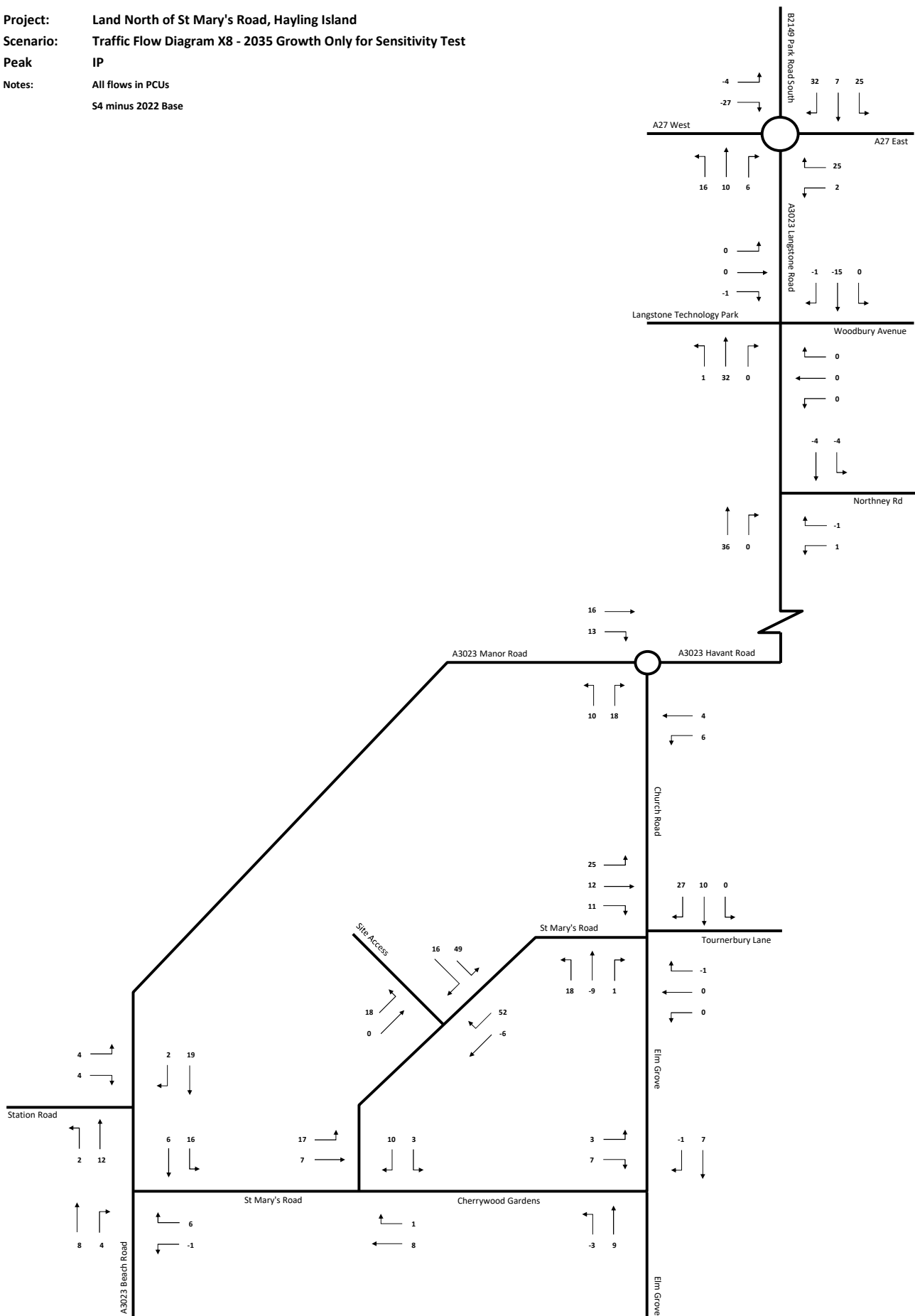
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram X6 - 2022 Observed Flows PCUs
Peak PM
Notes: All flows in PCUs
HGV% in red



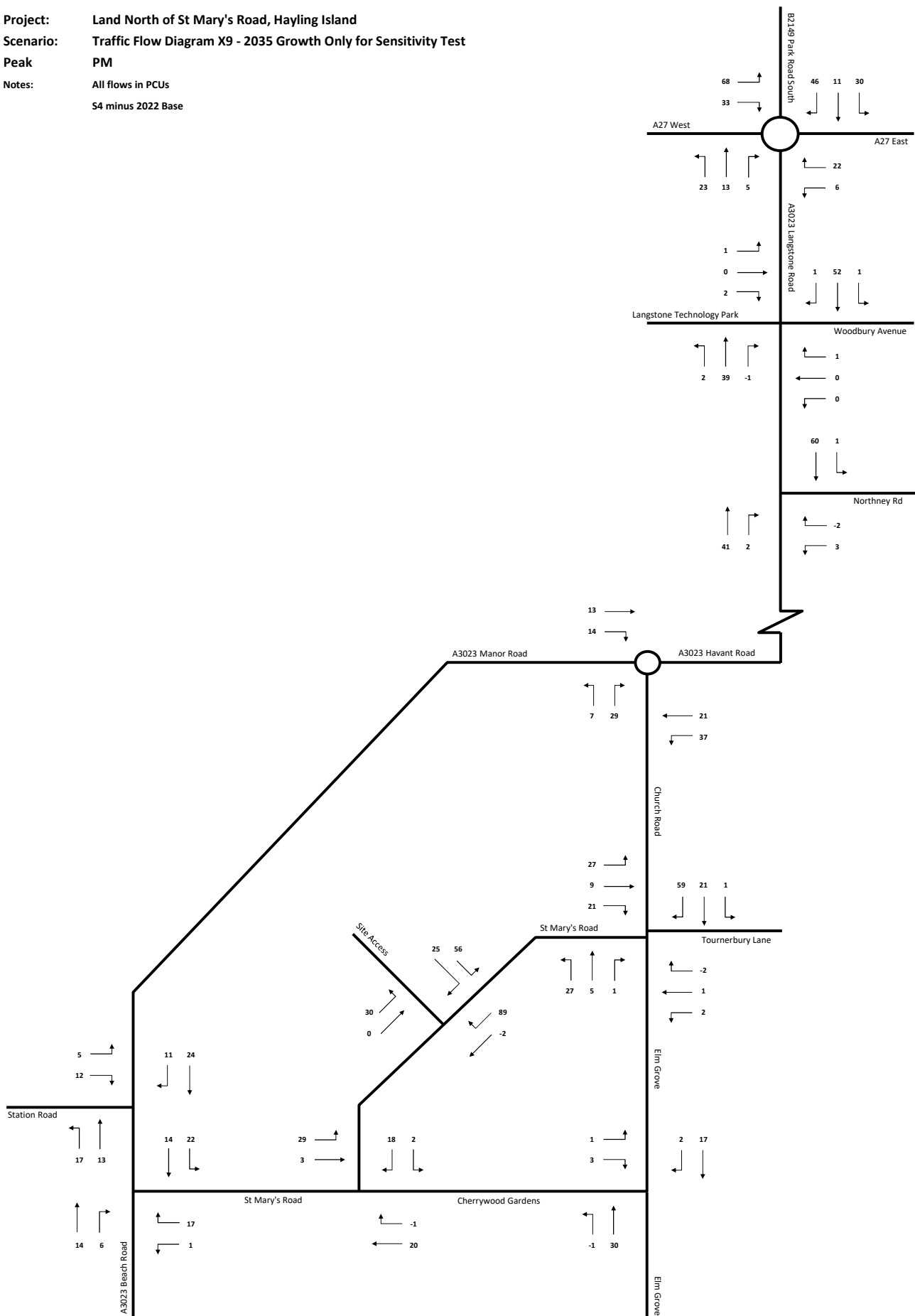
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram X7 - 2035 Growth Only for Sensitivity Test
Peak AM
Notes: All flows in PCUs
 S4 minus 2022 Base



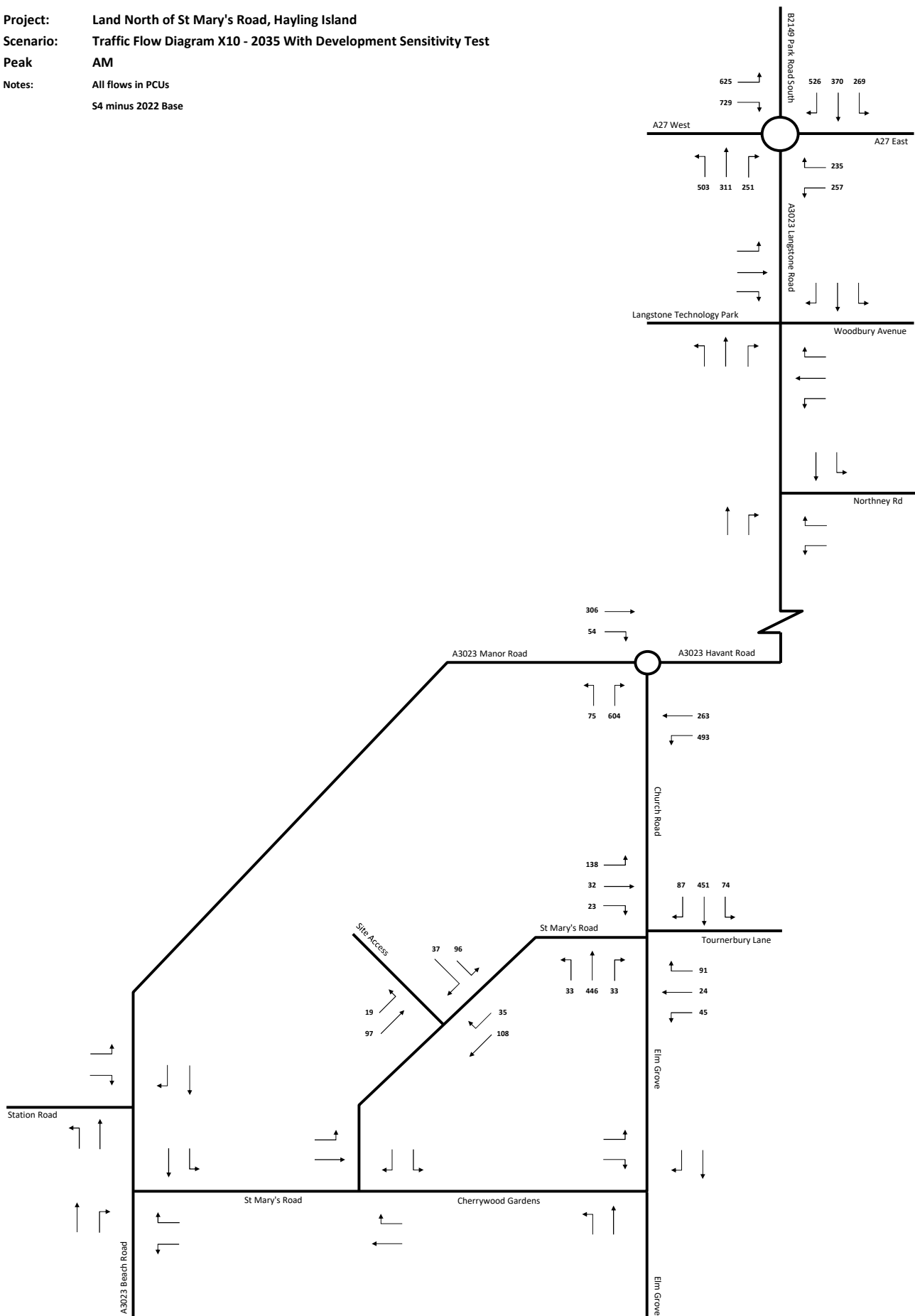
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram X8 - 2035 Growth Only for Sensitivity Test
Peak IP
Notes: All flows in PCUs
 S4 minus 2022 Base



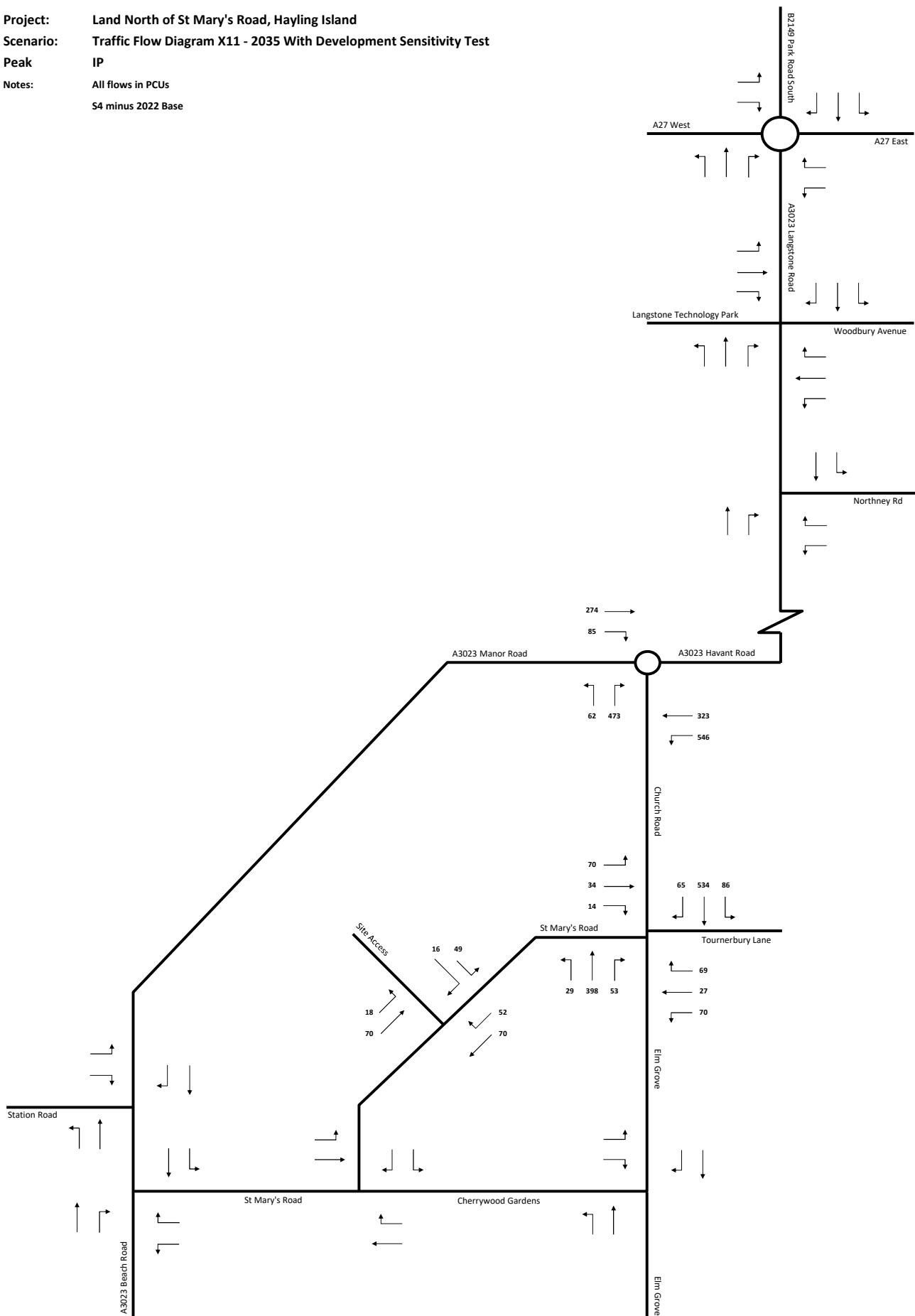
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram X9 - 2035 Growth Only for Sensitivity Test
Peak: PM
Notes: All flows in PCUs
 S4 minus 2022 Base



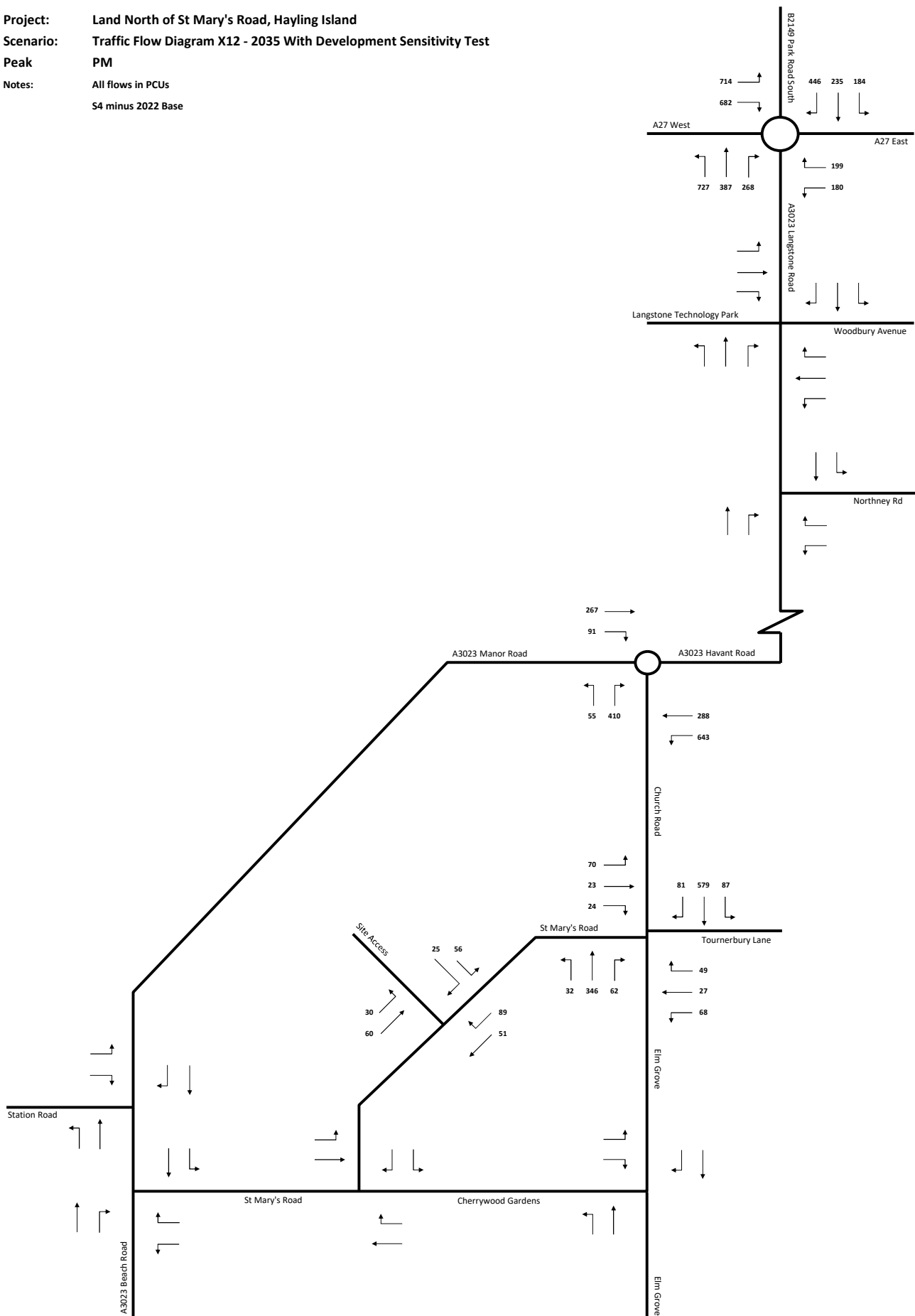
Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram X10 - 2035 With Development Sensitivity Test
Peak: AM
Notes: All flows in PCUs
 S4 minus 2022 Base



Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram X11 - 2035 With Development Sensitivity Test
Peak IP
Notes: All flows in PCUs
 S4 minus 2022 Base

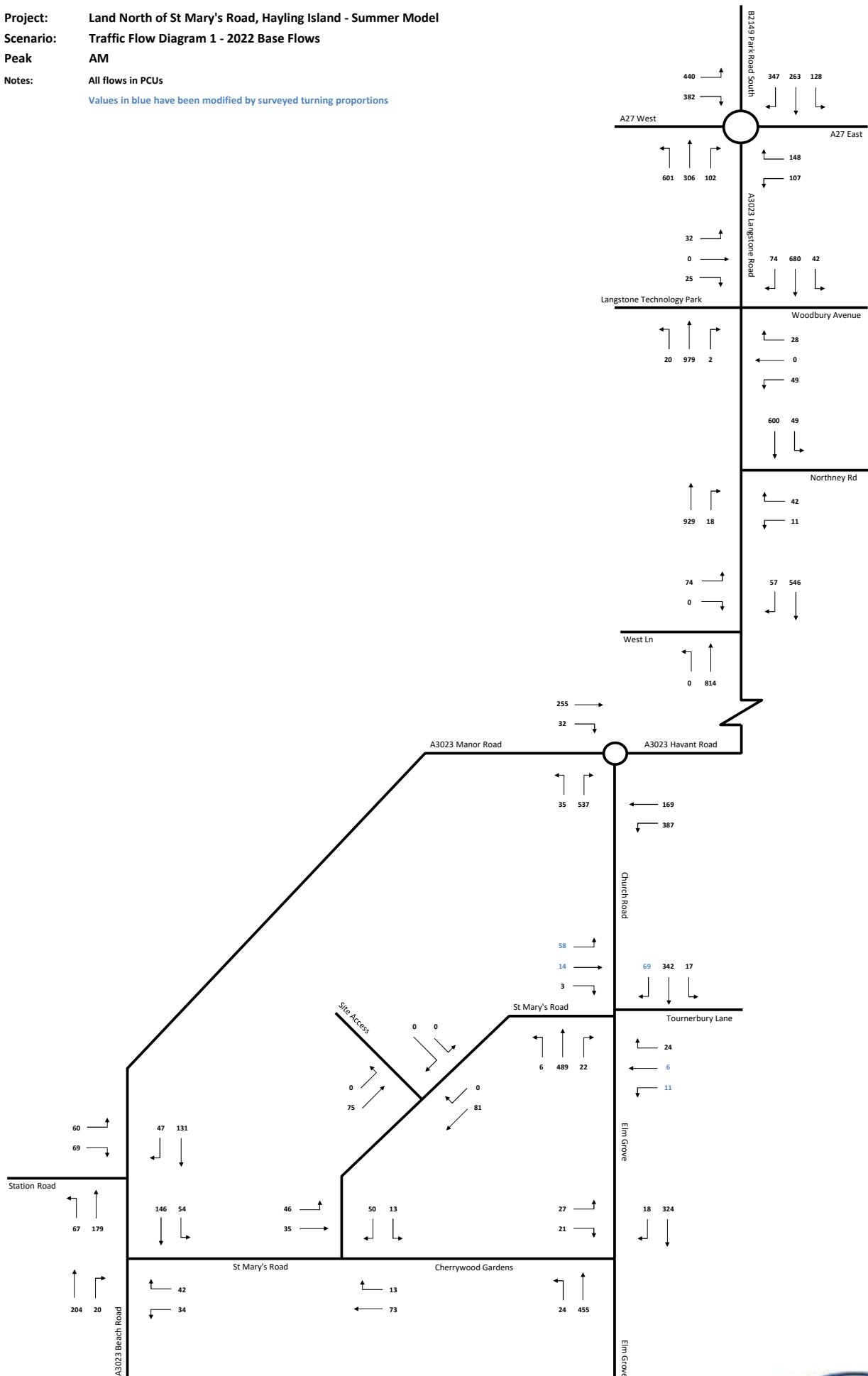


Project: Land North of St Mary's Road, Hayling Island
Scenario: Traffic Flow Diagram X12 - 2035 With Development Sensitivity Test
Peak: PM
Notes: All flows in PCUs
 S4 minus 2022 Base

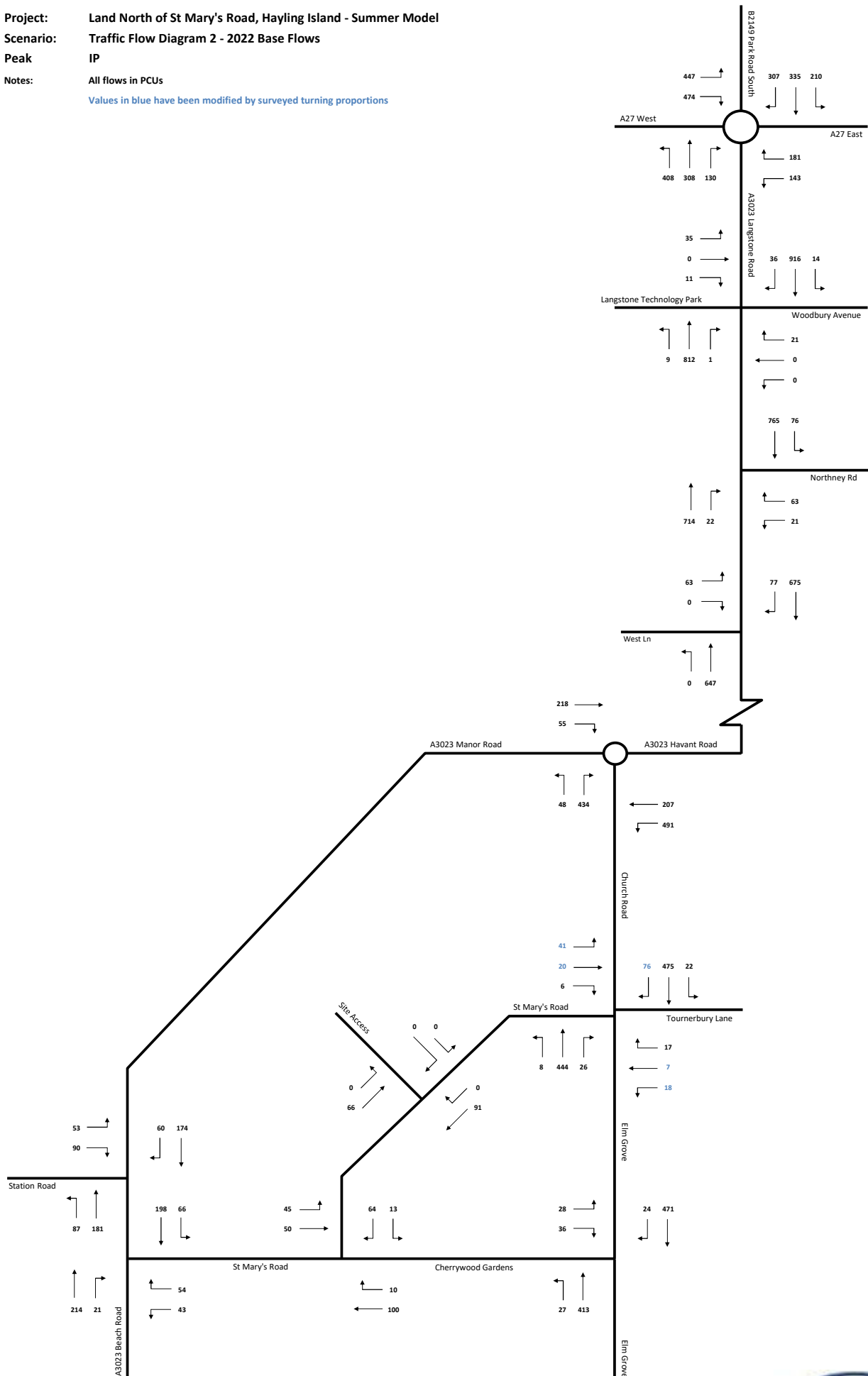


Summer Month Traffic Flow Diagrams			
Reference	Scenario	Peak	Derivation
1	Traffic Flow Diagram 1 - 2022 Base Flows	AM	Microsim Surveys
2	Traffic Flow Diagram 2 - 2022 Base Flows	IP	Microsim Surveys
3	Traffic Flow Diagram 3 - 2022 Base Flows	PM	Microsim Surveys
4	Traffic Flow Diagram 4 - 2035 Reference Case Flows	AM	Microsim+TEMPro
5	Traffic Flow Diagram 5 - 2035 Reference Case Flows	IP	Microsim+TEMPro
6	Traffic Flow Diagram 6 - 2035 Reference Case Flows	PM	Microsim+TEMPro
7	Traffic Flow Diagram 7 - 2035 With Dev Flows (Scenario 1)	AM	Microsim+TEMPro+Rook Farm
8	Traffic Flow Diagram 8 - 2035 With Dev Flows (Scenario 1)	IP	Microsim+TEMPro+Rook Farm
9	Traffic Flow Diagram 9 - 2035 With Dev Flows (Scenario 1)	PM	Microsim+TEMPro+Rook Farm
10	Traffic Flow Diagram 10 - 2035 Cumulative Flows (Scenario 4)	AM	Microsim+TEMPro+LiveApps
11	Traffic Flow Diagram 11 - 2035 Cumulative Flows (Scenario 4)	IP	Microsim+TEMPro+LiveApps
12	Traffic Flow Diagram 12 - 2035 Cumulative Flows (Scenario 4)	PM	Microsim+TEMPro+LiveApps

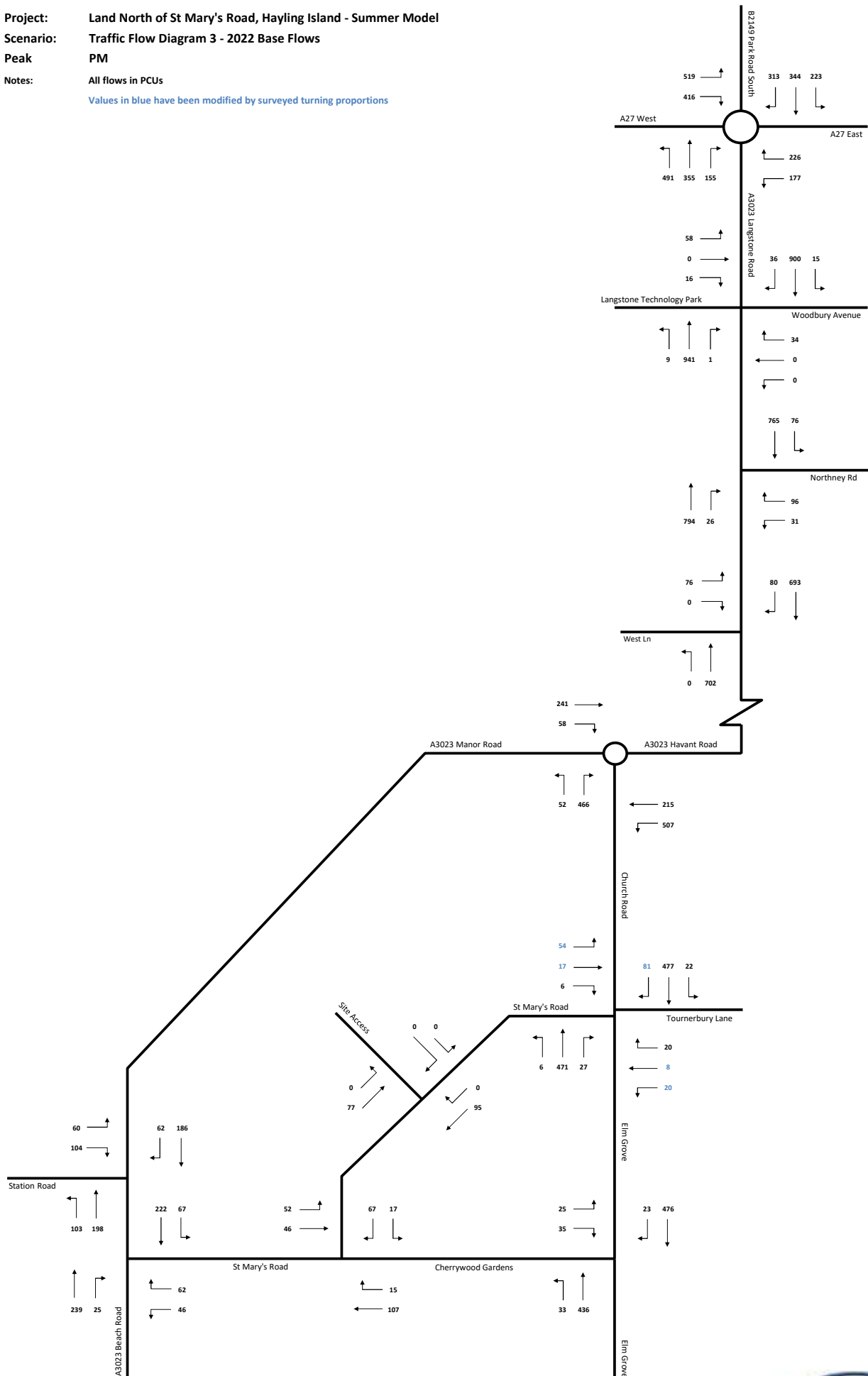
Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 1 - 2022 Base Flows
Peak: AM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 2 - 2022 Base Flows
Peak: IP
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



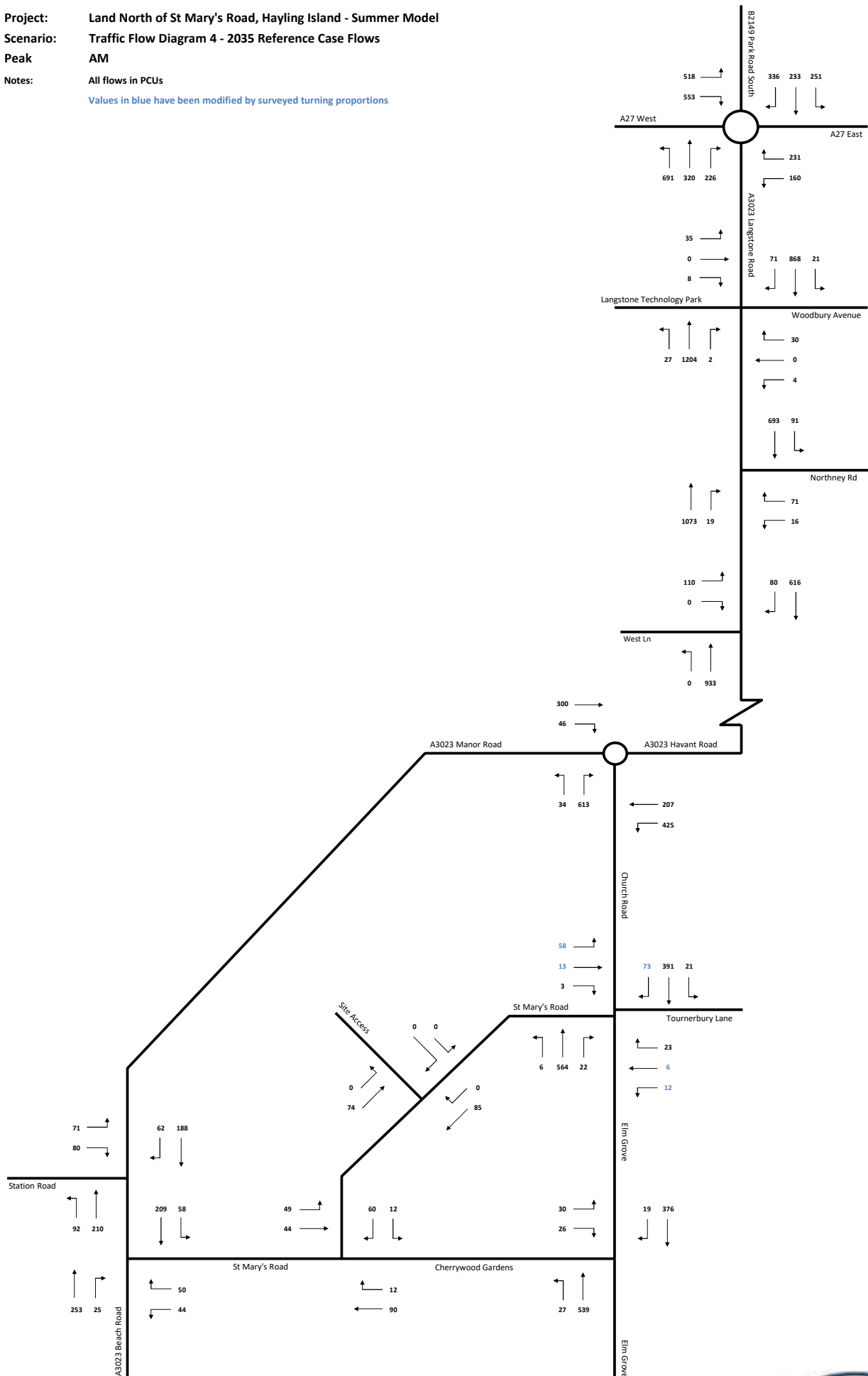
Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 3 - 2022 Base Flows
Peak: PM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



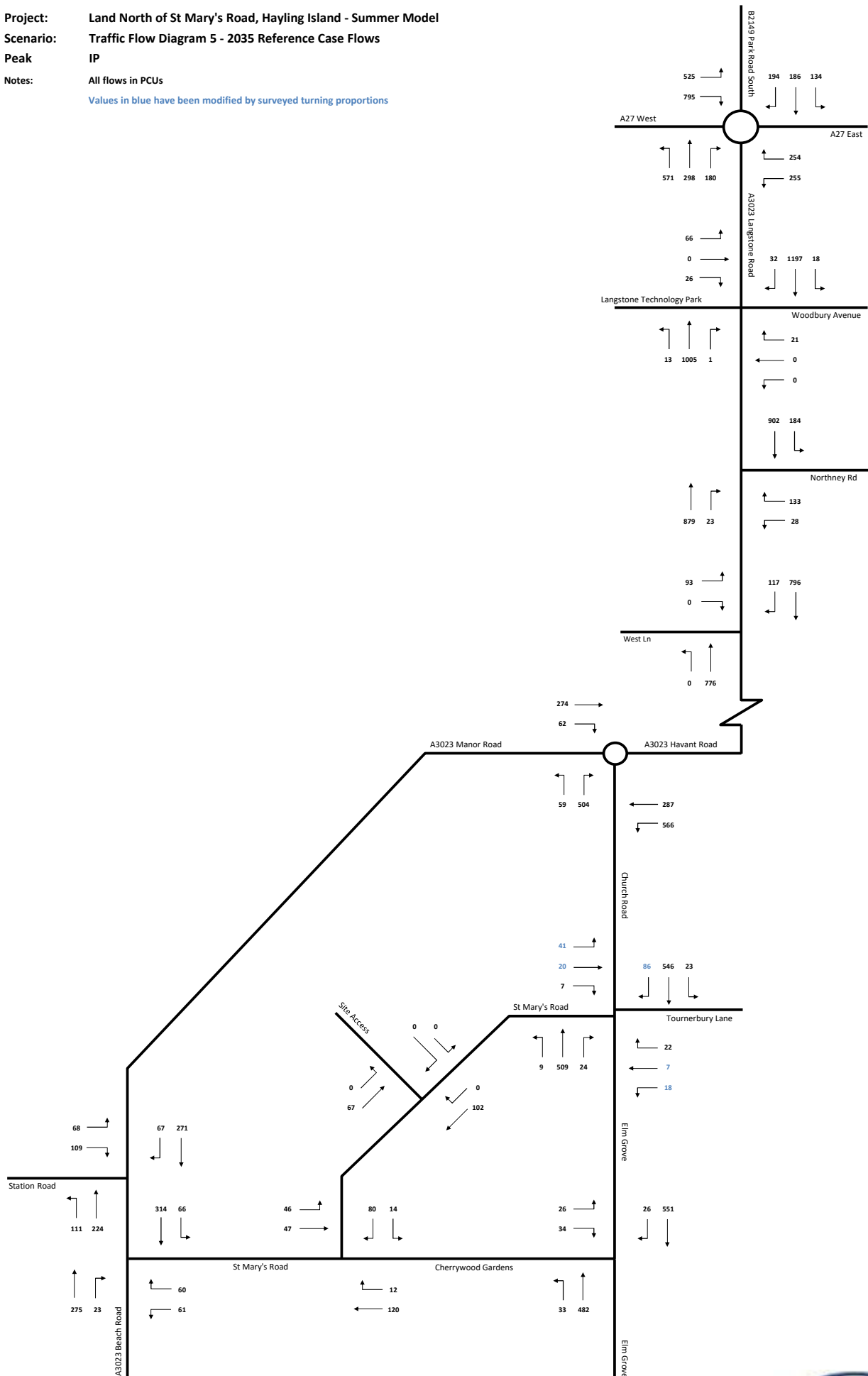
Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 4 - 2035 Reference Case Flows
Peak AM

Notes: All flows in PCUs

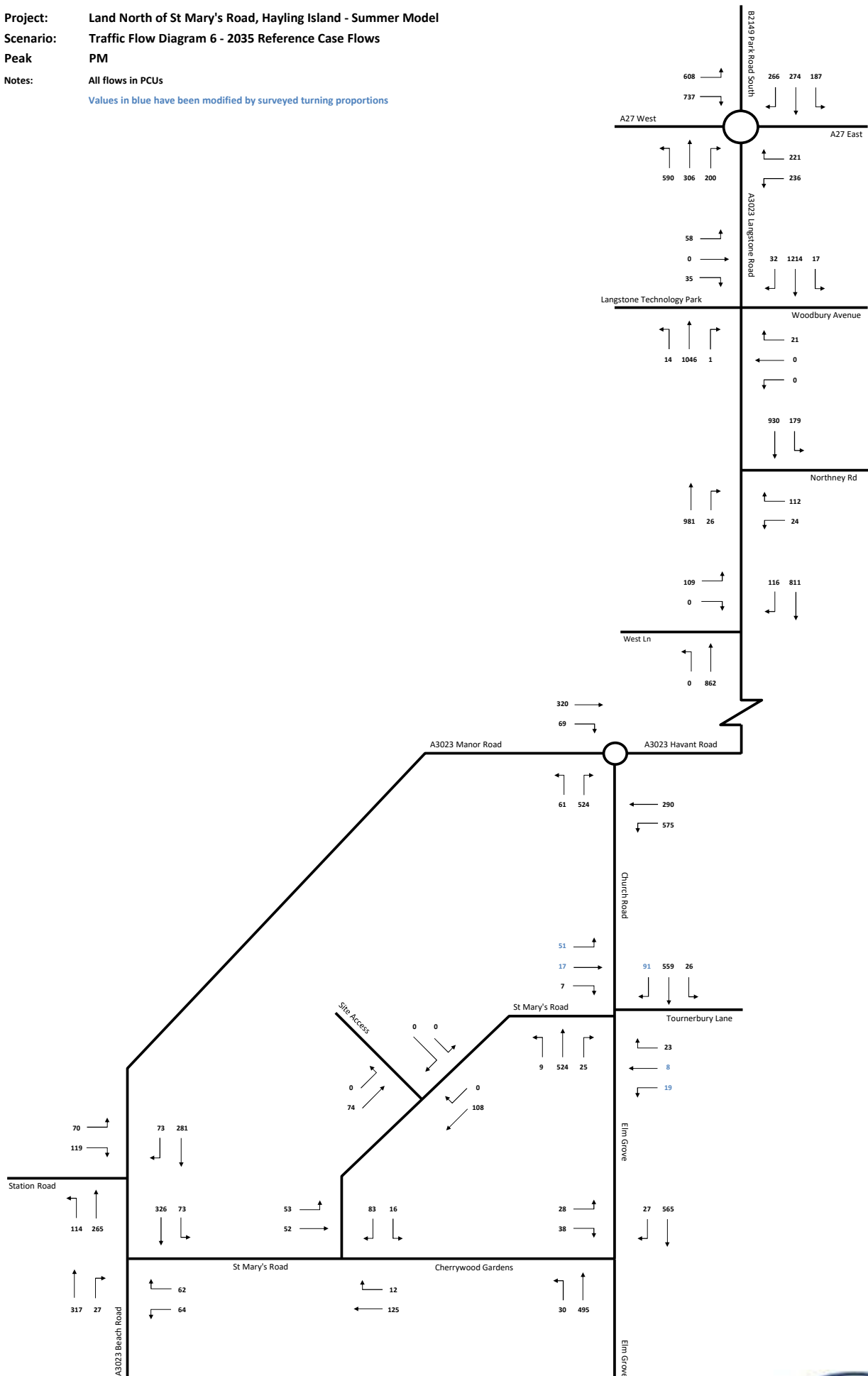
Values in blue have been modified by surveyed turning proportions



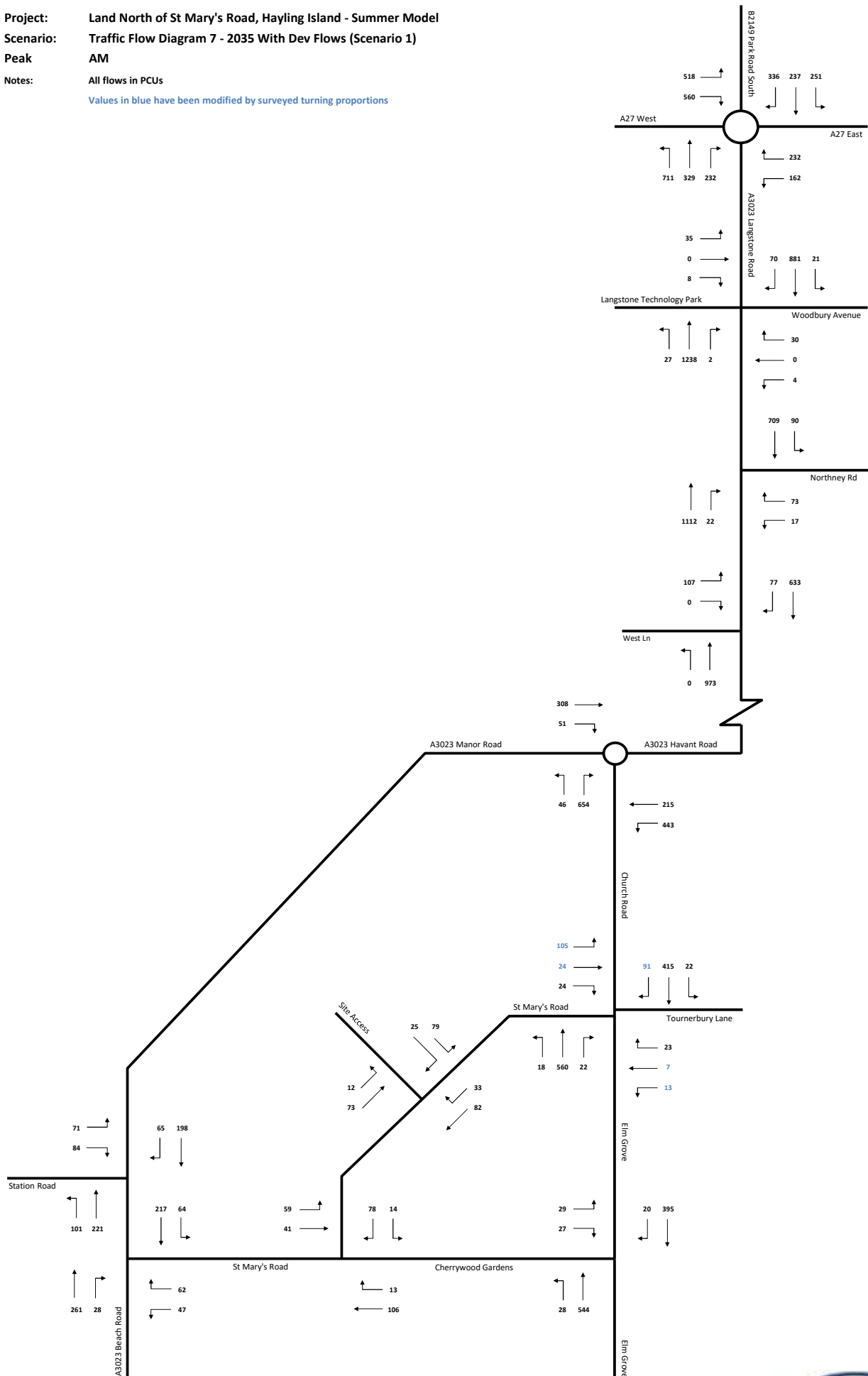
Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 5 - 2035 Reference Case Flows
Peak: IP
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



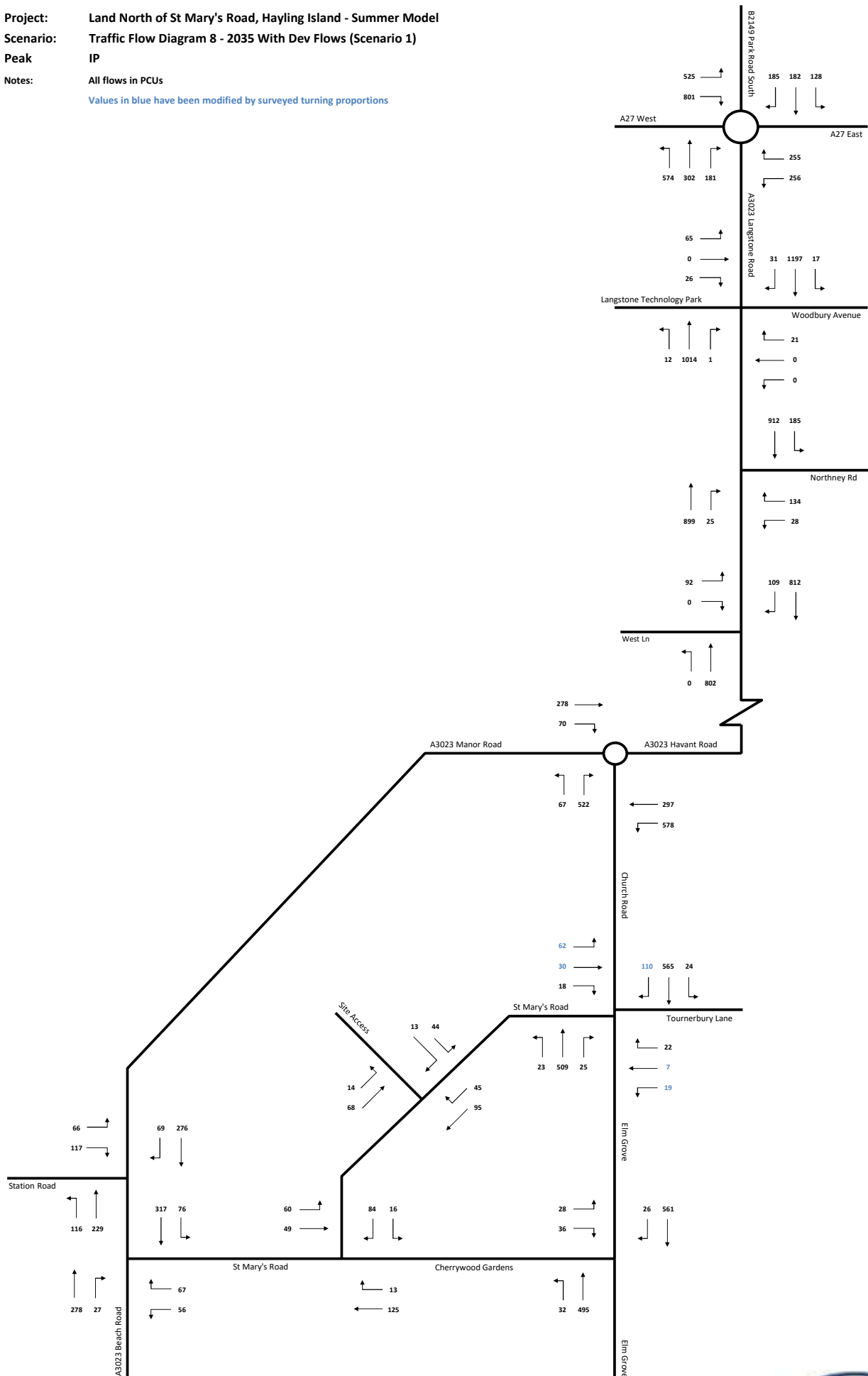
Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 6 - 2035 Reference Case Flows
Peak: PM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



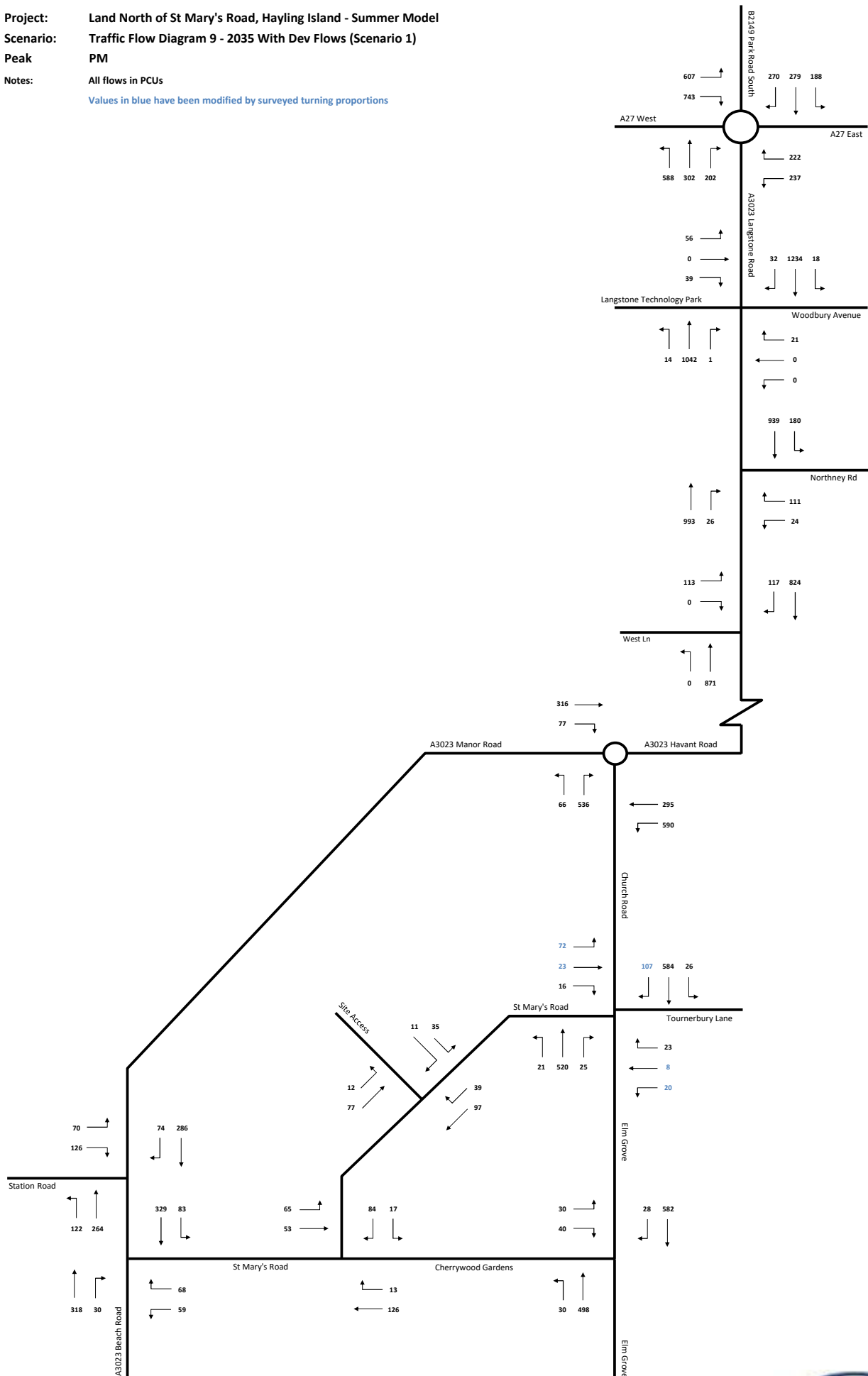
Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 7 - 2035 With Dev Flows (Scenario 1)
Peak: AM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



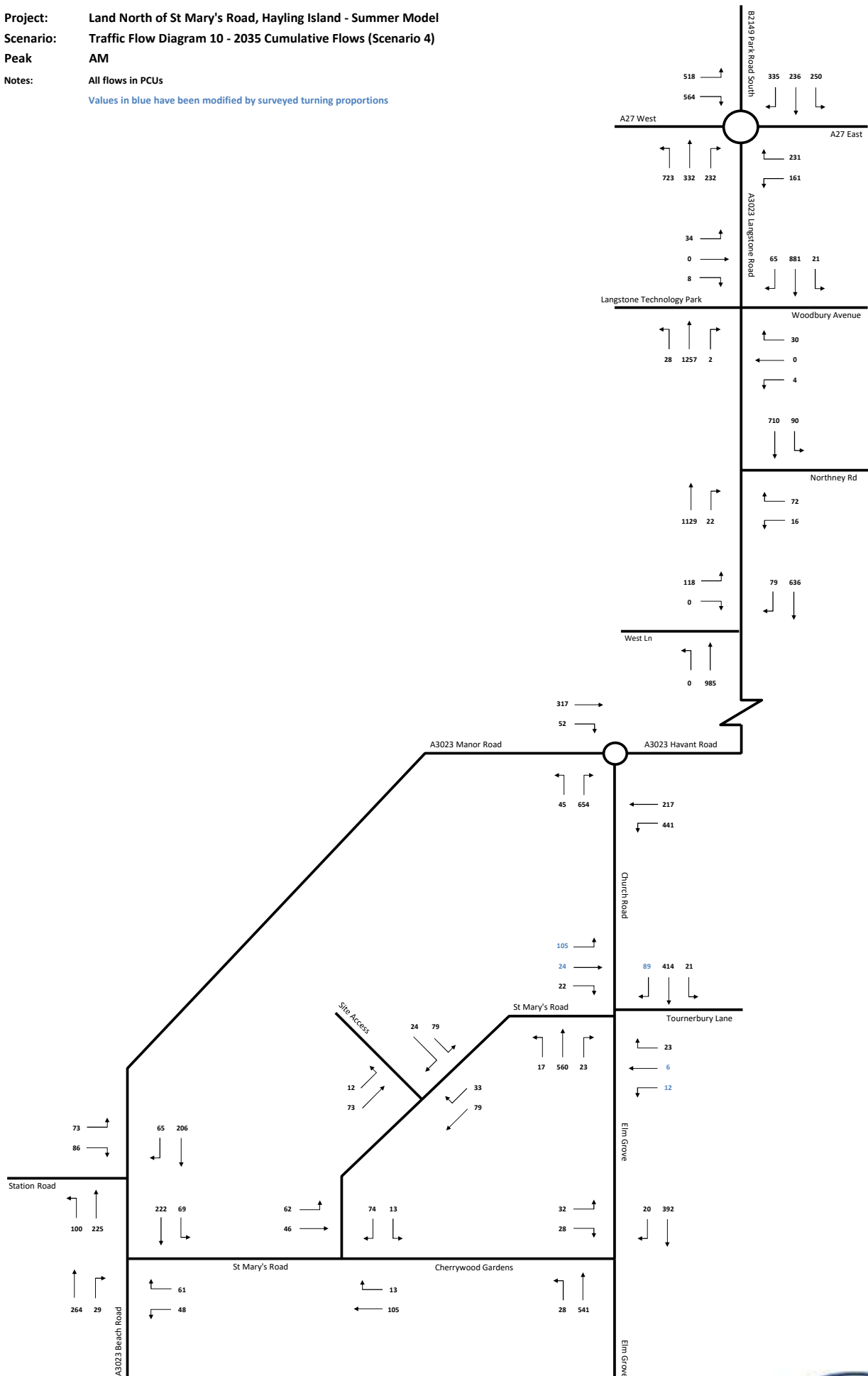
Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 8 - 2035 With Dev Flows (Scenario 1)
Peak: IP
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



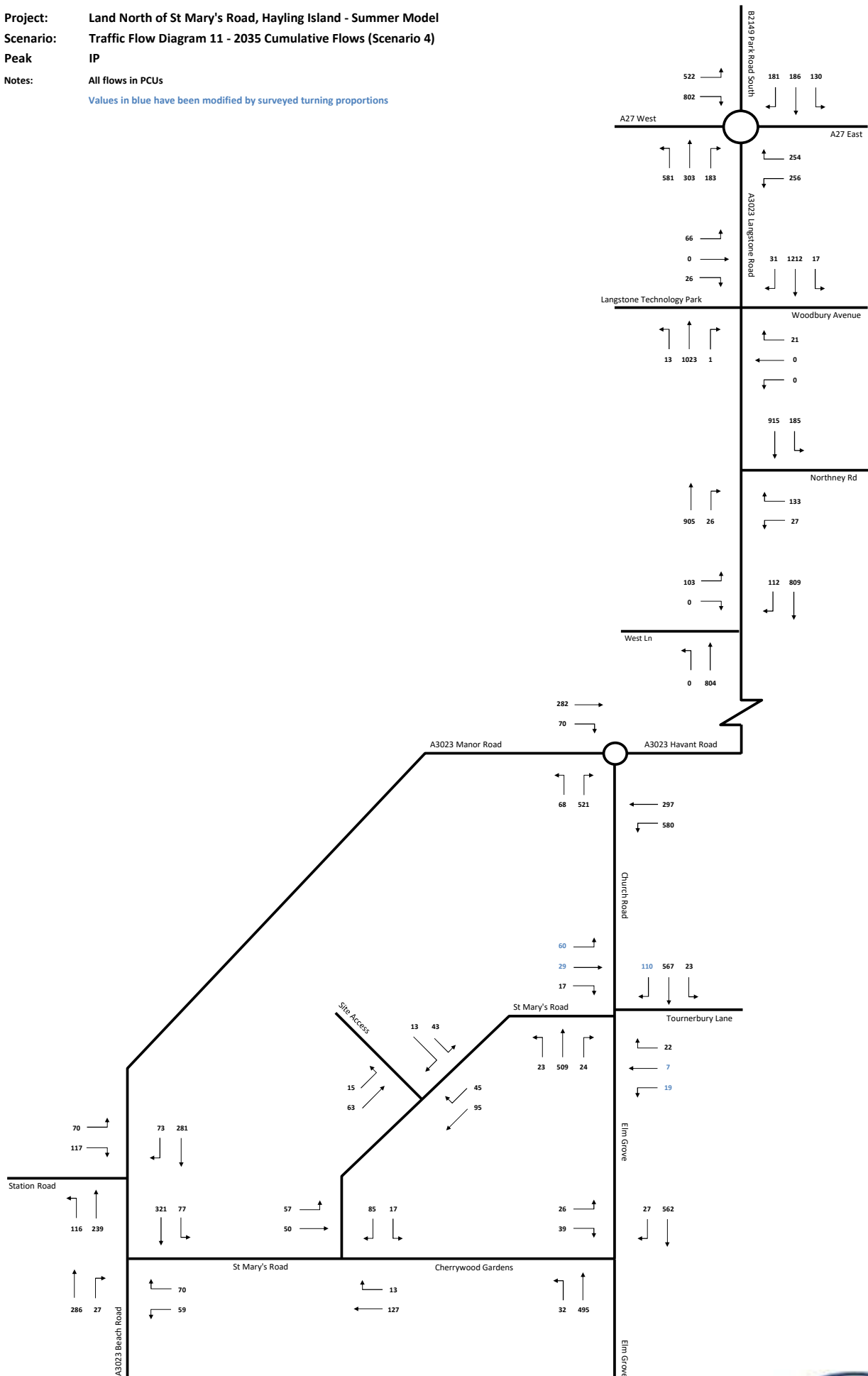
Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 9 - 2035 With Dev Flows (Scenario 1)
Peak: PM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 10 - 2035 Cumulative Flows (Scenario 4)
Peak: AM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 11 - 2035 Cumulative Flows (Scenario 4)
Peak: IP
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions



Project: Land North of St Mary's Road, Hayling Island - Summer Model
Scenario: Traffic Flow Diagram 12 - 2035 Cumulative Flows (Scenario 4)
Peak PM
Notes: All flows in PCUs
 Values in blue have been modified by surveyed turning proportions

