

redacted 11(2)

From: redacted 11(2)
Sent: 26 September 2019 09:02
To: redacted 11(2)
Cc:
Subject: RE: Swallow Roundabout, Dundee
Attachments: 264007-01 Dundee Western Gateway - Swallow Hotel and Trip Generation Rev....pdf; Agenda for Meeting 021019.docx

Morning redacted

In advance of next weeks meeting, we have amended the ARUP report as requested - attached.

From our side, the following people will be attending:

redacted 11(2) (Springfield - MD)
redacted 11(2) Springfield - Civils Director)
redacted (ARUP – Senior Engineer)
And myself

I have attached a proposed agenda.

Look forward to seeing you at Dundee House next week.

Kind regards

redacted
d 11(2)

redacted 11(2)



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From: redacted 11(2)
Sent: 10 September 2019 12:30
To: redacted 11(2)
Cc: redacted 11(2)
redacted 11(2)
Subject: RE: Swallow Roundabout, Dundee

out of scope

Thanks,

redacted
11(2)

redacted 11(2)

Senior Planning Officer
Planning Team
City Development Department
Dundee City Council
50 North Lindsay Street
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DD1 1LS

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Corporate Web Site: www.dundee.gov.uk

----- redacted 11(2)

wrote: -----

To: redacted 11(2)
redacted 11(2)
From: redacted 11(2)
Date: 10/9/2019 11:18
Cc: redacted 11(2)
redacted 11(2)

Subject: RE: Swallow Roundabout, Dundee

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11(2)

out of scope

Kind regards

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From: redacted 11(2)

Sent: 10 September 2019 10:29

To: redacted 11(2)

Cc: redacted 11(2)

redacted 11(2)

Subject: RE: Swallow Roundabout, Dundee

redacted 11(2)

out of scope

Regards,

redact
ed

redacted 11(2)

Quality Manager

Development Management
Network Operations
Roads Directorate

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Transport Scotland, the national transport agency

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From redacted 11(2)
Sent: 05 September 2019 12:29
To: redacted 11(2)
Cc:
redacted 11(2)

Subject: RE: Swallow Roundabout, Dundee

redacted
11(2)

Thank you for your email. We would be pleased to host a meeting w/c 30th September. I am currently available any time Monday to Thursday of that week.

It would be beneficial to hear what progress has been made since you brought the land ownership issue to our attention in June this year and to understand what the anticipated timescales are for resolving the land ownership issue.

We note the comments made by Transport Scotland and share their concerns regarding the risk that without some certainty that there will be a timely resolution to the current land matter or, if there is additional delay, that a further approach for another relaxation will not be sought.

Similarly Dundee City Council could only consider a relaxation if there was certainty that the land ownership matter can be resolved timeously and certainty that an appropriate mechanism was in place to secure the delivery of the upgrade. Given the increase in risk we don't consider that the current mechanism (the exchange of letters to comply with the relevant planning condition/s) is appropriate unless it is supported by some kind of road bond. Conclusion of the agreement / bond with Transport Scotland may offer a solution in this respect.

In the absence of these two key assurances we would be unable to consider a relaxation. The meeting will be an opportunity for you to comment on how these concerns can be addressed.

Regards,

redacted
11(2)

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City Development Department
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wrote: -----

To: redacted 11(2)
redacted 11(2)
From: redacted 11(2)
Date: 3/9/2019 16:20
Cc: redacted 11(2)
redacted 11(2)

Subject: RE: Swallow Roundabout, Dundee

Afternoon redacted 11(2)

out of scope

out of scope

Kind regards

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From: redacted 11(2)
Sent: 30 August 2019 14:22
To: redacted 11(2)
Cc:
redacted 11(2)

Subject: RE: Swallow Roundabout, Dundee

Hi redacted

Thank you for your emails and related technical assessment regarding the requested deferment in the delivery of the A90 Swallow Roundabout mitigation works associated with the Western Gateway development area in Dundee. This has been the subject of review of both the technical aspects and associated risk for Transport Scotland.

I note the conclusion drawn from the supporting report by Arup is that the difference in impact between 270 and 370 houses is not considered significant as it would only represent an extra 50 or so peak hour vehicles through an already very busy junction. Whilst the difference between the two modelled scenarios is shown to be relatively modest, in terms of additional queuing and slightly longer travel times, it cannot be avoided that the results do represent a further deterioration in network performance with the additional houses. This has to be considered not just in the context of the difference between 270 and 370 units but in terms of how this compares to the network performance prior to development occurring, which is not something considered by Arup.

It is unfortunate that the land ownership complications have only been brought to light at such a late stage and Springfield Developments feel compelled to seek an amendment to the current development obligations. It is noted that you expect to conclude related 3rd party negotiations before the end of 2019. It is also noted that the company anticipates completion of the 270th house in December 2019. I am advised, however, that the Minute of Agreement for the works remains incomplete. This compounds our concerns regarding the risk to Transport Scotland without some certainty that there will be a timely resolution to the current land matter or, if there is additional delay, that a further approach for another relaxation will not be sought.

Whilst Transport Scotland would seek to be as flexible as possible, in order to manage any future risk, I would wish to obtain more certainty that the issues of land ownership are able to be resolved (whether that be through a private commercial agreement or Dundee City Council exercising CPO powers) before formally agreeing to such a relaxation. Once that has been resolved, the issue of permitting house building to proceed beyond the currently agreed limits in parallel with the delivery of the junction improvements can be considered.

I would invite your further comment on how Transport Scotland's concerns may be allayed and risks contained to an acceptable degree.

Please note I am on annual leave for one week from tonight.

Regards,

redacted
d 11(2)

redacted 11(2)

Quality Manager

Development Management
Network Operations
Roads Directorate

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From: redacted 11(2)
Sent: 26 August 2019 09:50
To: redacted 11(2)
Cc: redacted 11(2)
redacted 11(2)

Subject: RE: Swallow Roundabout, Dundee

redacted
11(2)

Are you able to confirm whether a revised threshold for completion of the Swallow Roundabout upgrades would be acceptable to Transport Scotland?

Kind regards

redacted
11(2)

redacted
11(2)

Land and Planning Manager

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From: redacted 11(2)
Sent: 15 August 2019 09:00
To: redacted 11(2)
Cc:
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Subject: RE: Swallow Roundabout, Dundee

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To clarify the current situation, a neighbouring land owner contacted Springfield Properties PLC in relation to the latest planning application for the Swallow Roundabout upgrades. The owner believed part of the works proposed may require land owned by them. Based on Dundee City Council's original title report, this did not appear to be the case.

Through discussions with the land owner they have demonstrated that their title now extends further than was set out in the original title report and some of that land may be required for the consented layout.

The land owner has said they would look to work with Springfield Properties PLC. We have therefore commenced a review of the current designs with our consultant, Arup, and have continued to discuss this matter with the neighbouring land owner to allow the upgrades to be completed timeously.

Those discussions / review are currently expected to conclude before the end of 2019 to allow work to then commence asap after that point

I trust that this is of assistance as you review the Arup Report that supports our request to extend the agreed threshold for completing the upgrade works from 270 homes to 370 homes.

Kind regards

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ed

redacted

Land and Planning Manager

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From redacted 11(2)
Sent: 13 August 2019 09:56
To: redacted 11(2)
Cc:
redacted 11(2)
Subject: RE: Swallow Roundabout, Dundee

redact
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I refer to your email of 30 July below regarding the delivery of Swallow Roundabout improvement works and would provide the following update.

The technical aspects are presently being reviewed. However, you highlight in your email that Springfield have, so far, been unable to progress the works in the anticipated timescale '*due to matters out with our control*'. Transport Scotland would clearly wish to avoid a scenario where, after agreeing to extend the trigger point beyond the current limit, we find ourselves in a potential situation where there continues to be unresolved issues affecting delivery. In this regard, and prior to drawing any conclusions on the technical implications of relaxing the current trigger point for completion of the works from 270 to 370 dwellings as set out in the supporting Arup report, I would be grateful if you could outline what these 'matters' are. In addition, we would be keen to understand whether or not they have now been satisfactorily resolved to the extent that they no longer pose an impediment to the subsequent delivery of the scheme or, if not, what steps are being taken to seek to resolve them.

I have copied redacted 11(2) into this email due to the Council's mutual interests in this matter.

Regards,

redacted
11(2)

redacted 11(2)

Quality Manager

Development Management
Network Operations
Roads Directorate

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From: redacted 11(2)
Sent: 30 July 2019 14:01
To: redacted 11(2)
Cc:
Subject: Swallow Roundabout, Dundee

redacted
d 11(2)

As you are aware, Springfield Properties PLC is in the process of seeking to deliver the new Western Gateway / Dykes of Gray village at Dundee (under 3 separate planning permissions). As part of that we are obligated (through the Dundee City Local Development Plan and planning conditions) to contribute to the future construction of junction improvements at the Swallow Roundabout (A90 / A85 junction), Dundee.

Through discussions progressed in 2015, a scheme for improvements to the Swallow Roundabout was agreed with Dundee City Council and Transport Scotland and planning permission secured for those works. That planning permission was renewed in 2018 together with a further planning application to Perth & Kinross Council for works within the PKC element of the junction.

In 2016 we agreed an approach to undertake the upgrades to the Swallow Roundabout by the date of issue by Dundee City Council of the Notice of Acceptance of Completion issued by the verifier relating to the two hundred and seventieth completion of a residential unit within the planning application sites we had secured at the Western Gateway / Dykes of Gray village (see attached letter that was agreed between Springfield Properties PLC, Dundee City Council and Transport Scotland).

However, due to matters out with our control, we have been unable to progress the works at the Swallow Roundabout in the timescales we had anticipated in 2016 (and 2018). In simple terms, we had expected to have been able to have

commenced works earlier this year and to have concluded those works by November 2019 (with our 270th house completion expected to arise in December 2019).

We anticipate that the resultant delay in completion of the upgrades to the Swallow Roundabout as we address outstanding matters will be c12 months which would equate to us having completed 370 homes at the Western Gateway / Dykes of Gray village. In light of this, we instructed Arups to undertake an assessment of the junction to consider the effect of an additional 100 homes at the Western Gateway / Dykes of Gray village prior to the upgrades being completed. Their report (plus the background modelling info for 270 homes and 370 homes) is attached.

The advice from Arups is that *"an additional 100 homes will not result in any noticeable impact on the overall operation of the Swallow Hotel roundabout (in its current configuration)."*

In order for the delivery of the Western Gateway / Dykes of Gray village development to proceed without adverse impact, we would require the threshold for completions of the Swallow Roundabout upgrades to be increased from 270 completions to 370 completions. Ensuring that there is no interruption to delivery of the Western Gateway / Dykes of Gray village is an important factor in delivering the strategic development expectations set out in the TAYplan Strategic Development Plan and the recently Adopted Dundee City Local Development Plan. The approach outlined would allow this to happen without creating additional net detriment to the trunk road network.

The mechanism to then allow this to progress is for our letter of August 2016 to be updated and agreed; a draft is attached for your consideration. I would therefore be grateful if you could confirm that the revised letter is satisfactory to Transport Scotland and we can formalise this agreement with Dundee City Council in due course.

Kind regards

redact
ed

redacted 11(2)

Land and Planning Manager

redacted 11(2)



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Springfield Properties plc
Dundee Western Gateway
Comparative Traffic Generation and
Swallow Hotel Roundabout Review

001

Final v5.0 | 25 September 2019

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 264007-01

Ove Arup & Partners Ltd
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South Queensferry
Edinburgh EH30 9SE
United Kingdom
www.arup.com

ARUP

Document verification



Job title		Dundee Western Gateway		Job number		264007-01	
Document title		Comparative Traffic Generation and Swallow Hotel Roundabout Review		File reference		4-05	
Document ref		001					
Revision	Date	Filename	264007-01 Dundee Western Gateway – Swallow Hotel and Trip Generation Review DRAFT v1.1.docx				
Draft 1	3 Jul 2019	Description	First draft. Issued for client review				
			Prepared by	Checked by	Approved by		
		Name	redacted 11(2)	redacted 11(2)	redacted 11(2)		
		Signature	-	-	-		
Issue	11 Jul 2019	Filename	264007-01 Dundee Western Gateway - Swallow Hotel and Trip Generation Review FINAL v2.0.docx				
		Description	Incorporation of client comments. Issue as final				
			Prepared by	Checked by	Approved by		
		Name	redacted 11(2)	redacted 11(2)	redacted 11(2)		
Signature	-	-	-				
Issue v2.1	17 Jul 2019	Filename	264007-01 Dundee Western Gateway - Swallow Hotel and Trip Generation Review FINAL v2.1.docx				
		Description	Minor text edits following client comments. Issued in draft for review				
			Prepared by	Checked by	Approved by		
		Name	redacted 11(2)	redacted 11(2)	redacted 11(2)		
Signature	-	-	-				
Issue v3.0	18 Jul 2019	Filename	264007-01 Dundee Western Gateway - Swallow Hotel and Trip Generation Review FINAL 3.0.docx				
		Description	Final issue				
			Prepared by	Checked by	Approved by		
		Name	redacted 11(2)	redacted 11(2)	redacted 11(2)		

		Signature			
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Issue Document verification with document



Document Verification

Page 2 of 2

Job title		Dundee Western Gateway		Job number		264007-01	
Document title		Comparative Traffic Generation and Swallow Hotel Roundabout Review		File reference		4-05	
Document ref		001					
Revision	Date	Filename	264007-01 Dundee Western Gateway - Swallow Hotel and Trip				
Draft v4.0	13 Sep 2019	Description	Updated to reflect DCC comments and amended modelling (incl. com dev trips). For internal review.				
			Prepared by	Checked by	Approved by		
		Name	redacted 11(2)	redacted 11(2)	redacted 11(2)		
		Signature	-	-	-		
Draft v4.1	16 Sep 2019	Filename	264007-01 Dundee Western Gateway - Swallow Hotel and Trip				
		Description	Minor edits following internal review. Draft issue.				
			Prepared by	Checked by	Approved by		
		Name	redacted 11(2)	redacted 11(2)	redacted 11(2)		
	Signature	-	-	-			
Final v5.0	25 Sep 2019	Filename	264007-01 Dundee Western Gateway - Swallow Hotel and Trip				
		Description	Final edits following client review.				
			Prepared by	Checked by	Approved by		
		Name	redacted 11(2)	redacted 11(2)	redacted 11(2)		
	Signature	-	-	-			
		Filename					
		Description					
			Prepared by	Checked by	Approved by		
		Name					
		Signature					

Issue Document Verification with Document



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1 Introduction

1.1 Background

1.1.1 Local Development Plan and Western Gateway

Dundee City Council's 2019-2029 Local Development Plan (adopted February 2019) identifies a series of residential and mixed-use development sites which combine to form a strategic development area which is referred to as the Dundee 'Western Gateway'. The development area is located north of the A90(T) on the west side of Dundee and is accessed off Dykes of Gray Road (**Diagram 1.1**).



Diagram 1.1: Western Gateway development area

Source: DCC LDP (2019 – 2029)

Within the context of the current LDP, the main sites which comprise the Western Gateway development area, and which are under control of Springfield Properties plc, are summarised in **Table 1.1**.

Table 1.1: Dundee City Council LDP (2019), Western Gateway Springfield sites

LDP Site Ref	Developer	No. of Homes	Note	Planning Status
HP01	Springfield Properties plc	230	134 homes exchanged as of September 2018 *	Consented
HP02	Springfield Properties plc	371		Consented
H69	Springfield Properties plc	100	n/a	Consented
H43	Springfield Properties plc	218	n/a	Awaiting decision
H42	Springfield Properties plc	30	n/a	Application not yet submitted
H41	Springfield Properties plc	250	n/a	Application not yet submitted

* 134 homes were exchanged at the same time as the traffic surveys (13th September 2018). Refer to **section 2.4** for further details.

In addition to the ‘Springfield’ sites identified above, **Table 1.2** summarises two additional, smaller sites which, while not forming part of the 2019 LDP / Western Gateway, are still of relevance due to their proximity to the Western Gateway area. Further details on these sites and how they have been accounted for within the following assessment are provided in **chapter 2**.

Table 1.2: Additional sites at Liff Hospital / West Green Park

LDP Site Ref	Developer	No. of Homes	Note	Planning Status
n/a	Kirkwood Homes	18	12 homes constructed as of April 2019.	Under construction (completion assumed by 2020) *.
n/a	Miller Homes	54 (west site = 26 homes; east site = 28 homes)	DCC noted (by email, 29/08/19) that a small number of homes are expected to have been constructed by 2020, however, the specific number is currently unknown	Consented (construction assumed to start 2019/2020) *.

* assumptions made in the absence of any relevant information and in accordance with DCC comments (refer to **section 2.3.4** for further details).

1.1.2 Swallow Hotel Roundabout

Proposals are currently being progressed for the upgrade of the Swallow Hotel roundabout. This junction currently operates as a standard 4-arm roundabout, providing links to/from Dundee City Centre, Liff, Western Gateway and the A90(T) strategic road link.

The proposed upgrade to the roundabout, which is currently going through the Road Construction Consent (RCC) and technical approval processes, includes full signalisation on all arms, re-configuration of the circulatory carriageway and the introduction of signalised

pedestrian/cycle crossings to provide safe, direct links between Dykes of Gray Road, the east side of the A90(T), and onwards to Dundee City Centre and Invergowrie.

Through the purification of planning conditions, agreement was reached with Transport Scotland (TS) and Dundee City Council (DCC) that the improvements to the Swallow Hotel roundabout would be completed by Springfield Properties plc either at, or before, the time the 270th home at the Western Gateway was built. With planning permission already in place for 701 homes, 196 have exchanged as of June 2019.

The layout of the upgraded Swallow Hotel roundabout is illustrated in **Diagram 1.2**.

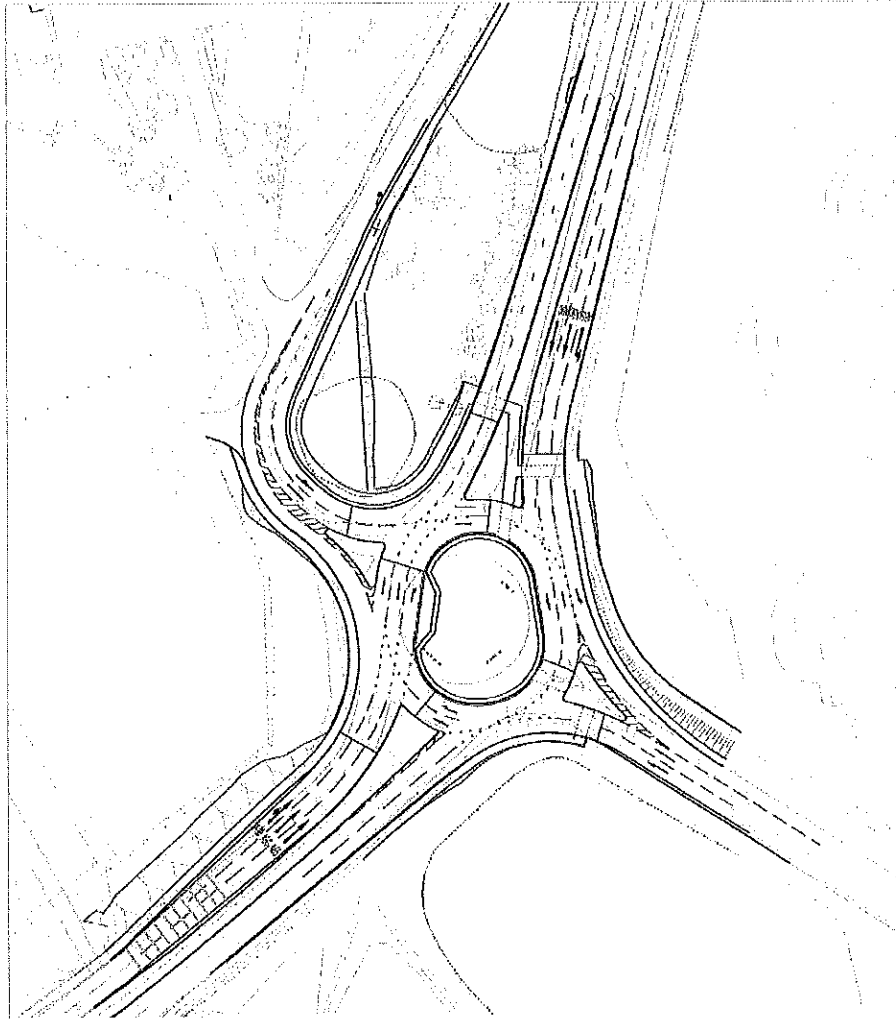


Diagram 1.2: Proposed (indicative) Swallow Hotel roundabout infrastructure works

1.2 Purpose of Report

Ove Arup and Partners Ltd (Arup) have subsequently been commissioned by Springfield Properties plc (Springfield) to undertake a review of the potential traffic impacts on the operation of the Swallow Hotel roundabout as a direct result of increasing the number of homes that were agreed would be built before the infrastructure upgrade works at the roundabout are to be implemented.

It is acknowledged that the following assessment has been undertaken to reflect a request on 29/08/19 from DCC planning officers that two non-Western Gateway sites should be included as part of the following assessment (further details are provided in **chapter 2**).

1.3 Report Structure

Following this chapter, the report proceeds as follows:

- Chapter 2: junction analysis; and
- Chapter 3: summary and conclusions.

2 Junction Analysis

2.1 Introduction

The purpose of this chapter is to provide an overview of the methodology which has been used to determine the potential impacts on the operation of the Swallow Hotel roundabout following the introduction of traffic associated with 270 and 370 homes. This is based on the current roundabout configuration (i.e. non-signalised).

This chapter also provides full details of the assessment exercise and resulting queue length and journey time outputs.

2.2 Proposal for an Amended Threshold

It is proposed that the traffic associated with a revised upper limit of 370 homes can be accommodated before the roundabout improvements works commence. The following analysis provides an evidence-based assessment in support of this proposal.

2.3 Methodology

2.3.1 Modelling Platform

As part of a Transport Assessment (TA) which was prepared in support of a planning application for a residential development on site 'H43' (refer to **Table 1.1**), a S-Paramics (Paramics) microsimulation model has been developed and used as the basis of assessing the potential effects of the development proposals on the operation of the surrounding road network. As part of this process, a 2018 calibrated/validated Base model was developed which, following an extensive dialogue period with DCC and TS, was approved for use in support of the 'H43' TA.

While the above Paramics model was confirmed as suitable for use in support of the 'H43' TA, it is believed that it is also suitable for use in this latest assessment, not least due to the fact that it is based upon contemporary survey data and that it incorporates trips to/from the Western Gateway homes which are already occupied (refer to **Table 1.1**). All previous Paramics models, as built by third parties, are based upon older survey data which does not account for the ongoing build-out of the Western Gateway development area.

2.3.2 Scenario Testing

Using the 2018 Base model, two scenarios have been assessed, namely:

- Scenario 1: 2018 Base + traffic associated with 270 homes; and
- Scenario 2: 2018 Base + traffic associated with 370 homes.

Both scenarios also include the traffic associated with two, smaller, non-Springfield sites, details of which are provided in **section 2.3.4**.

Although the following assessment is effectively looking at a future year scenario, whereby either 270 or 370 homes will have been constructed and occupied, the Base model which represents a 2018 year of assessment has been used. This reflects the 'H43' TA whereby it

was agreed with DCC that there would be no background traffic growth applied to the 2018 Base flows. Any increase in traffic volumes across the surrounding road network would come solely from the individual Western Gateway development sites.

All scenarios have been assessed for the AM (0700 – 1000) and PM (1500 – 1900) weekday periods.

2.3.3 Development Trip Generation (Springfield Sites)

To determine the predicted traffic generation associated with the above scenarios, the agreed trip rates which were used as part of the ‘H43’ TA have been applied to the *remaining homes* which have not yet been constructed/occupied (i.e. the consented total *minus* the number of homes built and exchanged at the time of the 2018 traffic surveys).

Table 2.1 summarises the trip rates used as part of the ‘H43’ TA.

Table 2.1: H43 residential vehicular trip rates and trip generation

Time Period	H43 Final Transport Assessment Trip Rates	
	In	Out
0700 – 0800	0.070	0.287
0800 – 0900	0.107	0.469
0900 – 1000	0.122	0.153
1500 – 1600	0.329	0.166
1600 – 1700	0.264	0.149
1700 – 1800	0.303	0.148
1800 – 1900	0.246	0.143

The trip rates identified above have been calculated using a methodology which was agreed with DCC/TS. At the time of the TA scoping exercise, it was assumed that the development proposals included 225 homes. The number of homes which form the ‘H43’ TA subsequently decreased to 218. The result is that the vehicular trip rates identified in **Table 2.1** (above) vary slightly from those identified during the scoping process. However, the difference is negligible. The assessment discussed in the remainder of this chapter is therefore based upon the values presented in the table above. **Table 2.2** subsequently summarises the predicted trip generation of the remaining homes yet to be built.

Table 2.2: Vehicular trip rates and trip generation associated with the remaining homes which are yet to be constructed/exchanged (134 homes exchanged at time of 2018 traffic surveys)

Time Period	H43 TA Trip Rates		Scenario 1 – 270 homes		Scenario 2 – 370 homes	
			Trip Generation (270 – 134 = +136 homes)		Trip Generation (370 – 134 = +236 homes)	
	In	Out	In	Out	In	Out
0700 – 0800	0.070	0.287	10	39	17	68
0800 – 0900	0.107	0.469	15	64	25	111
0900 – 1000	0.122	0.153	17	21	29	36
1500 – 1600	0.329	0.166	45	23	78	39
1600 – 1700	0.264	0.149	36	20	62	35
1700 – 1800	0.303	0.148	41	20	72	35
1800 – 1900	0.246	0.143	33	19	58	34

The proposed Origin-Destination (OD) trip distribution utilises the same agreed values as identified in the 'H43' TA. Assignment of these trips throughout the surrounding road network is influenced via the re-assignment function within the Paramics modelling platform. This re-assignment will occur due to factors such as congestion and changing travel time/costs.

2.3.4 Other Related Residential Development Sites

While this assessment focuses on the potential impact of the traffic associated with 270 vs. 370 homes on the operation of the Swallow Hotel roundabout, DCC planning officers have requested that consideration should also be given to two additional sites located adjacent to the Western Gateway strategic development area. These sites are identified in **Table 1.2** and are under control of Kirkwood Homes and Miller Homes.

Crucially, both sites were excluded from the 'H43' TA for the following reasons:

- The small size of both developments is such that no/inadequate traffic generation/distribution information was submitted as part of their associated planning application(s);
- Any traffic generation information that *was* submitted was representative of a single AM and PM peak hour. The assessment presented as part of this report represents a three-hour AM period and a four-hour PM period;
- Neither of the sites form part of the Western Gateway strategic development area; and
- Construction programmes and year of completion are unknown.

Despite the above, on 29/08/19 DCC planning officers requested that the traffic associated with both sites should be included as part of the following assessment. As limited/no traffic information was submitted as part of the relevant planning applications, the following assumptions have been applied:

- Traffic generated by both sites have been assigned in accordance with the trip distribution used within the 'H43' TA;
- The traffic generated outwith the AM and PM peak *hours* has been calculated based upon the three and four-hour trip profiles used within the 'H43' TA;
- The trip generation associated with the Miller Homes site has been based upon the trip rates and mode share values used within its supporting Transport Statement, '*Former Liff Hospital, Dundee Proposed Residential Development Transport Statement*' (September 2018);
- The trip generation associated with the Kirkwood Homes site has been based upon the trip rates used within the 'H43' TA, as no traffic data was submitted as part of the Kirkwood planning application (refer to **Table 2.1**); and
- DCC requested that the trips associated with the Miller Homes site are included as part of the following assessment. It was noted that the site is "*currently clearing planning conditions so it is likely that a small number will be occupied in 2020*" (29/08/19). In the absence of any further information, it has been assumed that 20 homes will have been constructed and occupied by 2020.

It is important to acknowledge that, while a Transport Statement (TS) was submitted in support of the Miller Homes development, the document did not include any junction capacity assessments. This suggests that, at the time of the planning application, DCC may have considered the level of traffic generation from the site to be sufficiently low that any impact(s) would be negligible. The same applies to the Kirkwood Homes site where neither a TS or TA were submitted in support of the application.

Nonetheless, and in accordance with DCC's request, **Table 2.3** summarises the assumed trip generation associated with both the Kirkwood Homes and Miller Homes sites.

Table 2.3: Trip generation associated with additional residential development sites (no. of homes expected to be complete by 2020 identified in brackets)

Time Period	Kirkwood Homes (18 homes)		Miller Homes (20 homes)	
	In	Out	In	Out
0700 – 0800	1	5	2	7
0800 – 0900	2	8	3	11
0900 – 1000	2	3	4	4
1500 – 1600	6	3	9	5
1600 – 1700	5	3	7	5
1700 – 1800	5	3	8	5
1800 – 1900	4	3	6	5

2.4 Survey Data

Five main data types were used during the development, calibration and validation of the 2018 Base model, namely:

- **Network data:** road network information, including the positioning of all kerb lines, stop lines, carriageway alignment, as derived from CAD-based ‘overlays’ and the use of aerial photos;
- **Manual classified count data:** traffic counts and queue lengths as derived from surveys undertaken on 13 September 2018. The traffic counts comprise of manual classified turning counts in 5-minute intervals along with queue length observations, also recorded in 5-minute intervals;
- **Directional journey time surveys:** these surveys were derived using the ‘Moving Car Observer’ (MCO) method, collecting a minimum of 10 journey times per direction. The surveys were undertaken during the same time periods as those covered by the manual classified counts to ensure data consistency; and
- **Automatic Traffic Counter (ATC) count data:** directional, 24-hour, classified traffic flows on 13 September 2018. This data was captured in 5-minute intervals.

The specific purpose of the ATC data collection was to support the Paramics validation process and not for identifying any long-term traffic growth or weekly variations.

Full details of the observed survey data are presented in the Local Model Validation Report (LMVR). The LMVR has since been signed off by both DCC and TS.

2.5 Analysis

2.5.1 Overview

This section presents the results from an assessment on the predicted impact of the development traffic on the operation of the Swallow Hotel roundabout.

2.5.2 Model Stability

A key feature of this model (and indeed, all microsimulation models), is in its ability to reflect the natural daily variation in vehicle flows and driver behaviour which would be expected under ‘real-world’ conditions. For this reason, and because each model run is based on a random ‘seed’ value (refer to section 2.6.4), it is necessary to run each time period a minimum number of times to ensure model stability.

Paragraph 3.3.1 of TAG Unit M3.1 notes that, “*before the results of any traffic assignment are used to influence decisions, the stability (or degree of convergence) of the assignment must be confirmed at the appropriate level*”. A particular level of model stability is therefore required to ensure consistent and robust model results.

The model was subsequently run 10 times for both the AM and PM periods and the outputs (log runs) were reviewed to identify any outlying and unusual model runs. As shown in **Diagrams 2.1** and **2.2**, the results from the model stability test for both the AM and PM periods under scenario 1 indicate that all 10 runs in the AM period were deemed to be sufficiently stable for inclusion in the following assessment. However, during the PM period,

only 9 runs were identified as being sufficiently stable. Indeed, one of the 10 runs shows a rapid increase in the number of vehicles present in the modelled network from approximately 18:15hrs onwards. This suggests that a single vehicle may have become ‘stuck’, resulting in a gradual network-wide gridlock situation. It is important to note that this is a feature of the model itself, and not an issue with the network representation, where in reality vehicles would not be ‘stuck’ and unable to clear a decision point. For this reason, the results from this model run have been excluded from the remainder of the assessment process.

Diagrams 2.3 and **2.4** illustrate similar outputs but for scenario 2. Here, all 10 runs in each time period were deemed to be sufficiently stable for inclusion in the following assessment.

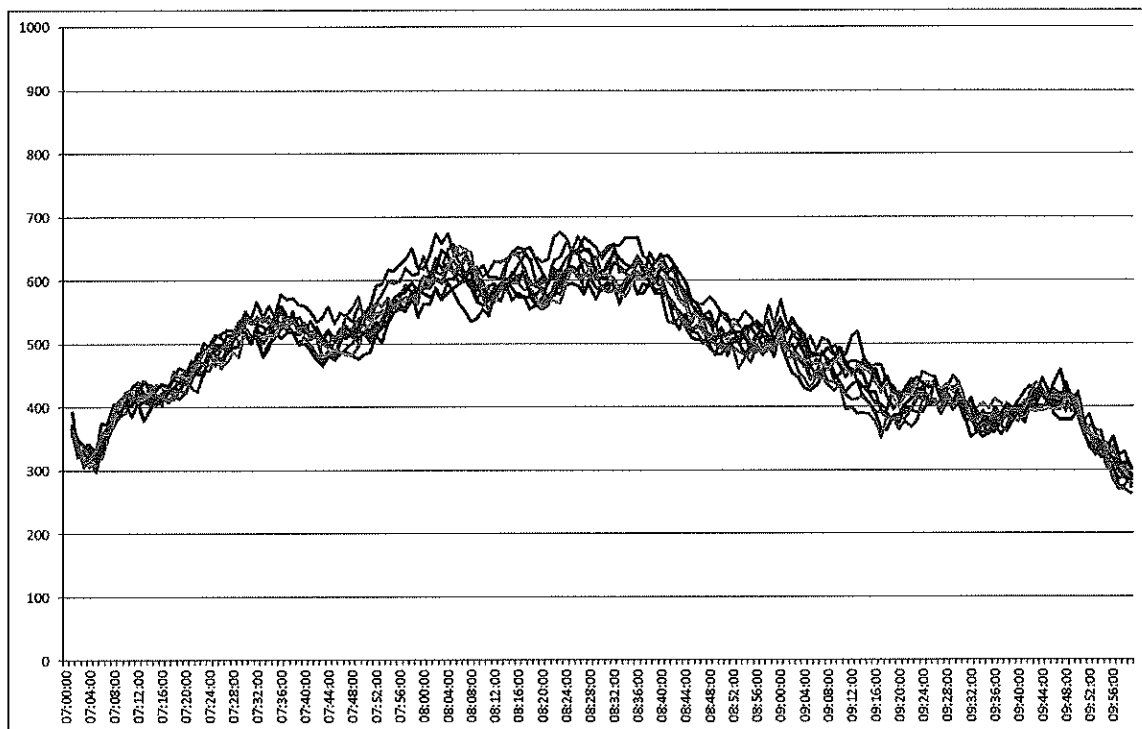


Diagram 2.1: Model stability, 10 runs, Scenario no. 1 (AM)

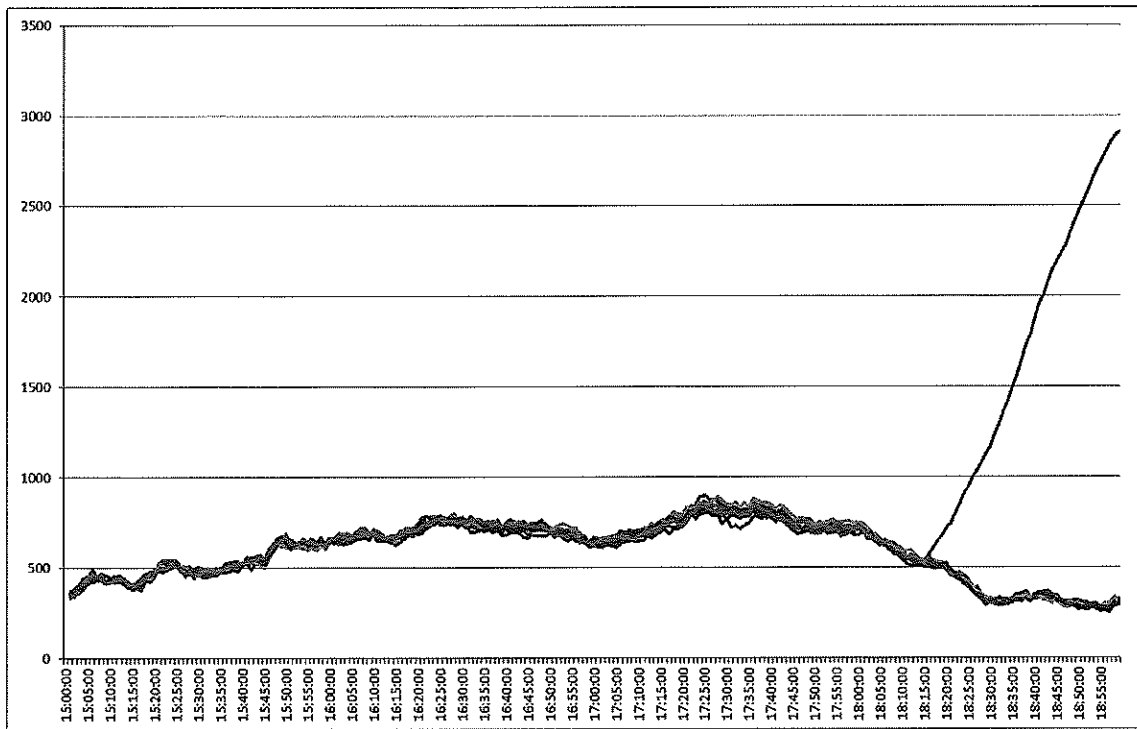


Diagram 2.2: Model stability, 10 runs, Scenario no. 1 (PM)

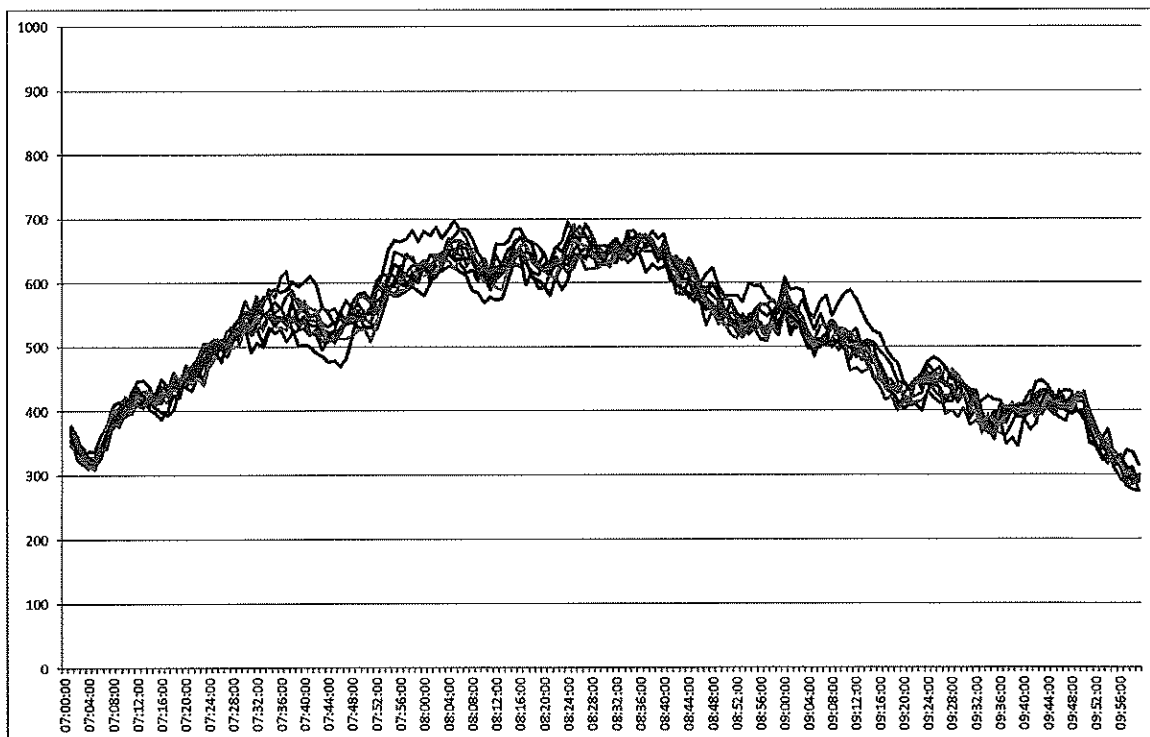


Diagram 2.3: Model stability, 10 runs, Scenario no. 2 (AM)

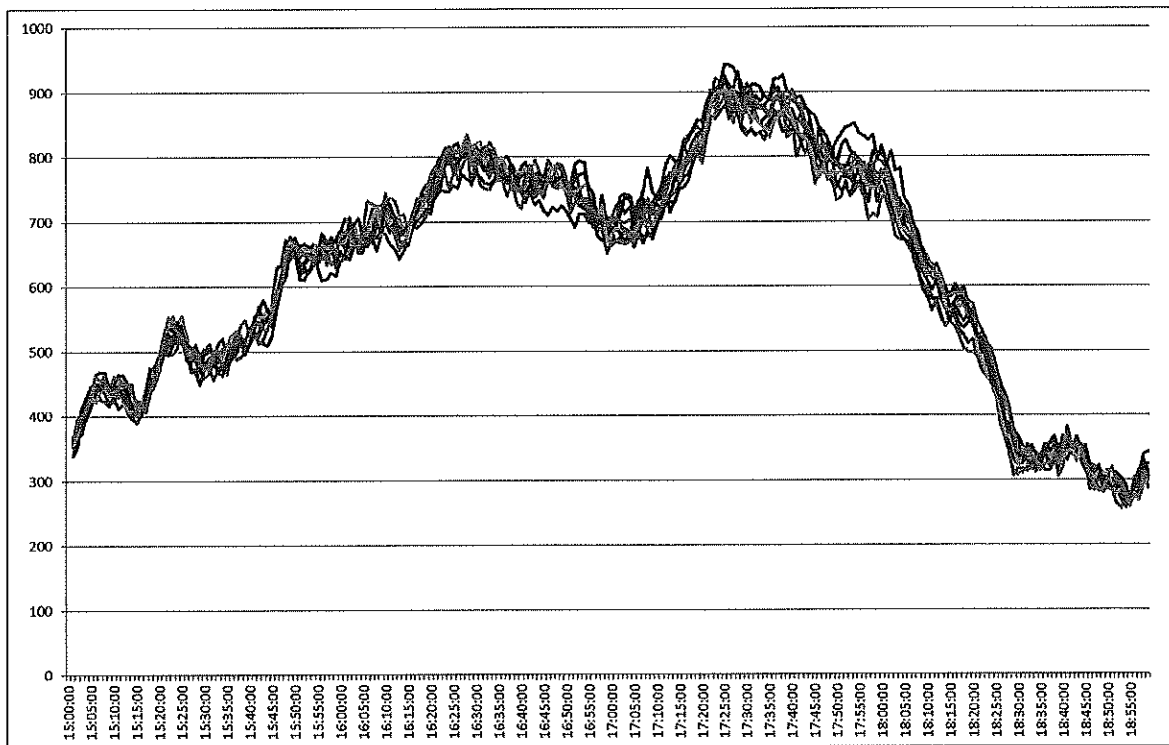


Diagram 2.4: Model stability, 10 runs, Scenario no. 2 (PM)

All queuing and journey time results are based upon the routes illustrated in **Diagram 2.5**. In all diagrams, the results for scenario no. 1 (i.e. 270 home threshold) are shown in **red**, while the results for scenario no. 2 (i.e. 370 home threshold) are shown in **blue**.

The same y-axis scale has been applied across all junctions and approach arms to maintain consistency of reporting and allowing a clearer comparative exercise to be undertaken. For queuing, the y-axis scale has been set at 120 vehicles, while the y-axis for journey times has been set at 600 seconds.



Diagram 2.5: Queuing and journey time routes

Source: Google Maps

2.5.3 Junction Performance Results

2.5.3.1 Queueing

Diagrams 2.6 to 2.9 summaries the mean max queue lengths for the AM period, while Diagrams 2.10 to 2.13 provides the same but for the PM period.

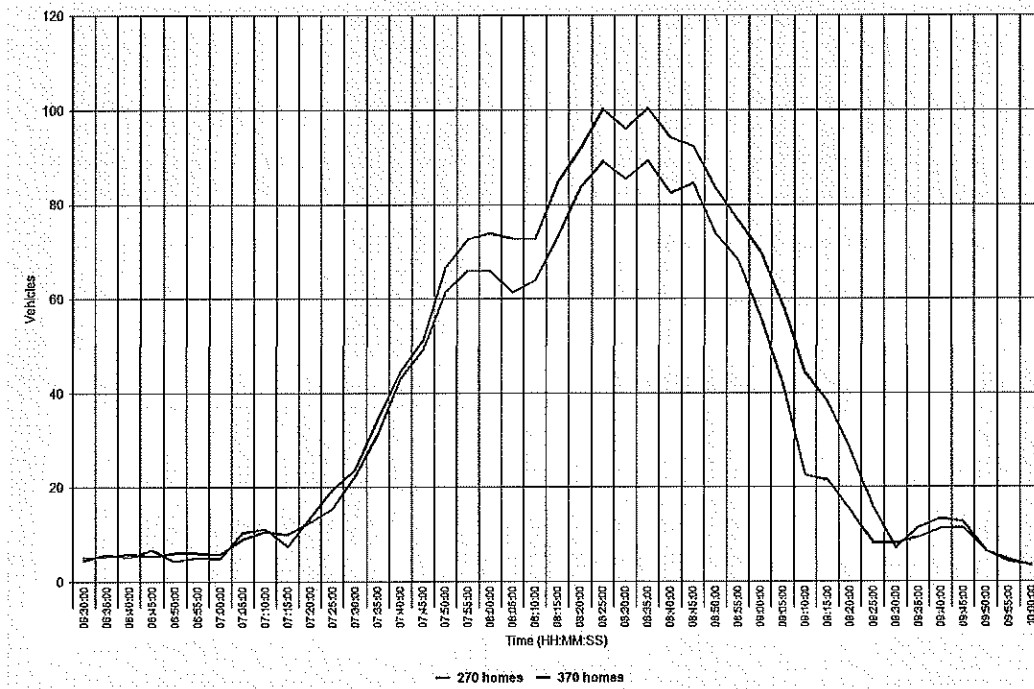


Diagram 2.6: A90(T) western approach arm – mean max queue lengths (veh. no.), AM period

As shown above, the AM results indicate limited impact as a direct result of the additional trips associated with the extra 100 homes. On all approach arms, the 270 and 370 home scenarios display very similar queueing profiles, suggesting the network is stable in terms of levels of potential re-assignment due to congestion. It is acknowledged, however, that the model offers only limited choice for vehicles to re-assign.

While there are some slight increases in queuing between the two scenarios, the additional impact created under the 370-home scenario is considered minor with the roundabout continuing to operate within acceptable limits, taking cognisance of the fact that the junction is already operating over capacity in the Base year (i.e. 2018).

For example, the mean max queue on the A85 approach arm (**Diagram 2.9**) associated with scenario no. 2 very closely mirrors that of scenario no. 1. This suggests a minimal impact as a result of the additional 100 homes.

Where there *are* increases in queueing, these are still considered to be acceptable given the absolute values shown. For example, the mean max queue on the A90(T) western approach arm (**Diagram 2.6**) under the 370 home scenario peaks at *circa* 100 vehicles. This is compared to a mean max queue under the 270-home scenario of *circa* 88 vehicles, reflecting an increase of only 12 vehicles. Furthermore, this increase is only present for a short time between 08:25hrs and 08:40hrs, after which the queue is shown to dissipate quickly, and with both scenarios showing a very similar queueing profile over the modelled period.

Diagrams 2.10 to 2.13 illustrate the mean max queue results for PM period.

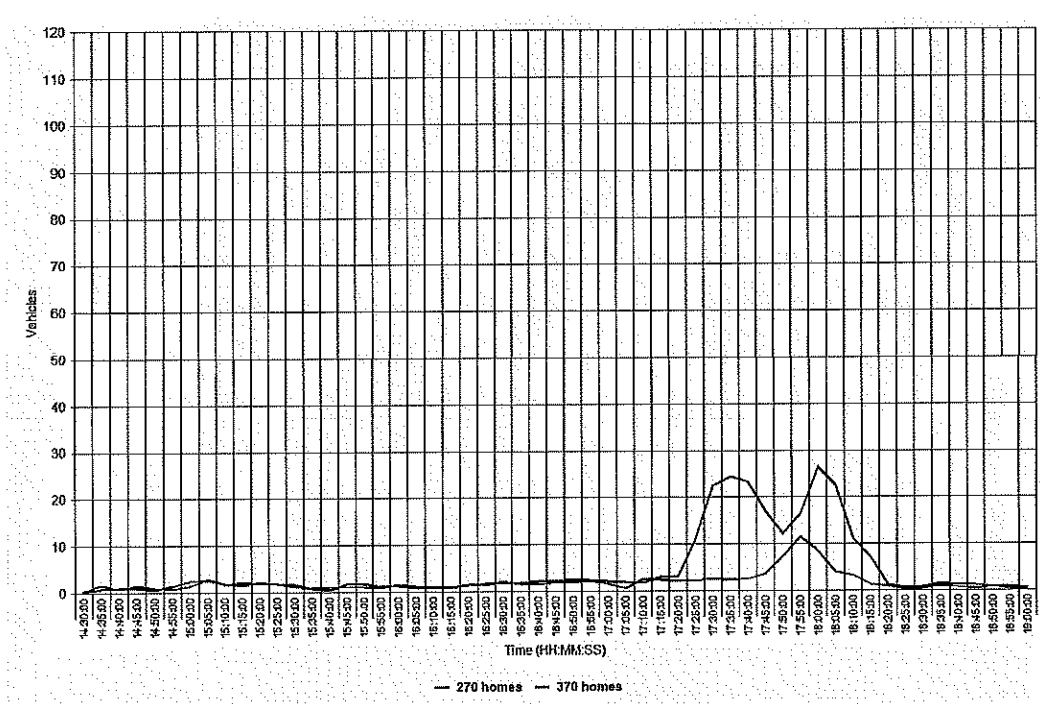
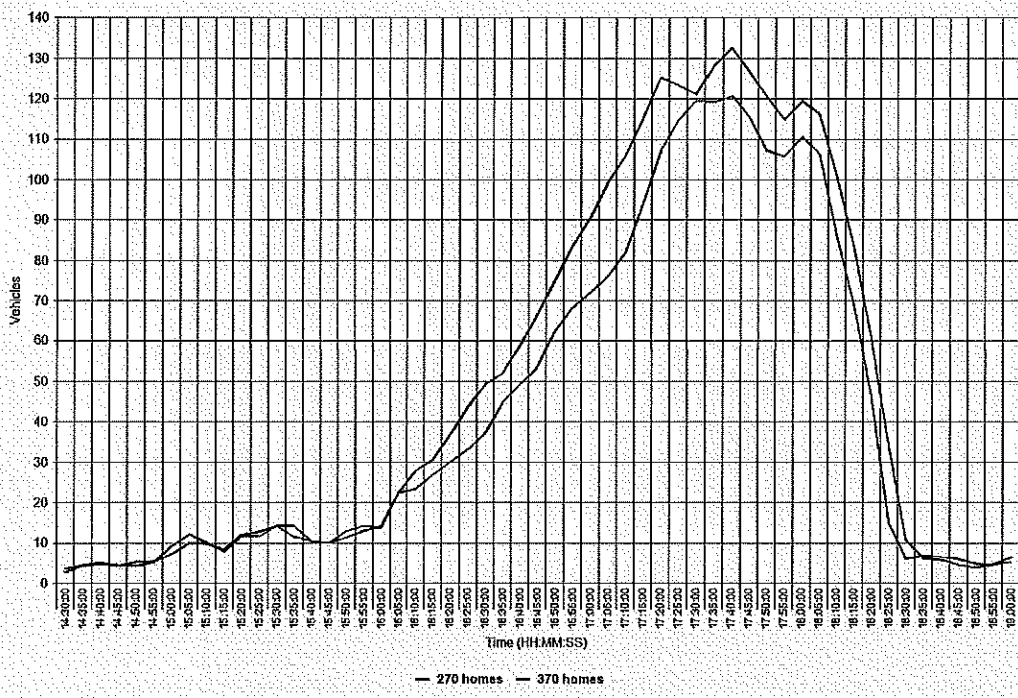


Diagram 2.11: Dykes of Gray Road approach arm – mean max queue lengths (veh. no.), PM period



Note: the y-axis scale has been increased from 120 veh. as used on all other queue graphs, to 140 veh.

Diagram 2.12: A90(T) eastern approach arm – mean max queue lengths (veh. no.), PM period

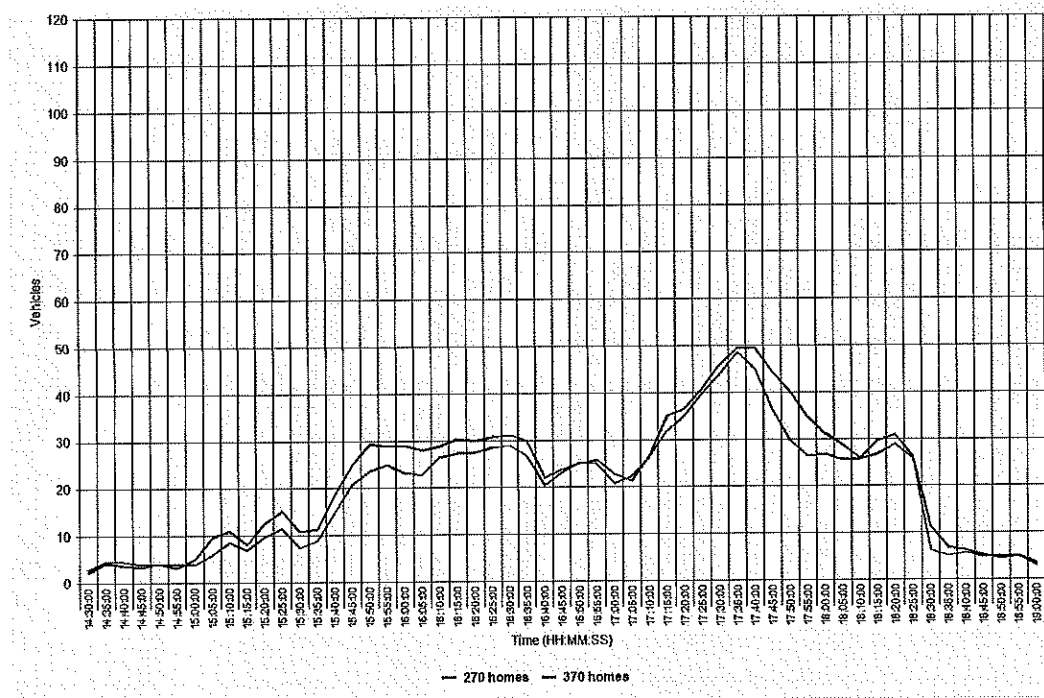


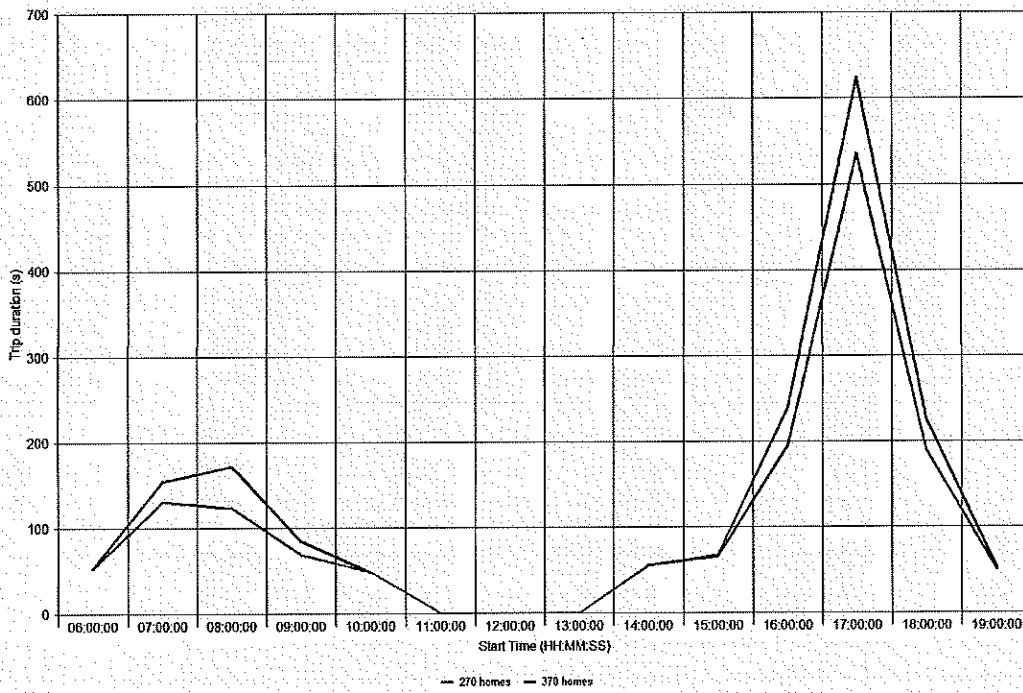
Diagram 2.13: A85 (Riverside Drive) approach arm – mean max queue lengths (veh. no.), PM period

The queuing results from the PM period closely mirror those of the AM period in that there are only minor differences between the two assessment scenarios. Furthermore, where there *are* differences in the queue lengths, the magnitude of this difference is generally the same as that found under the equivalent AM period.

For the reasons outlined above, it is considered that the Swallow Hotel roundabout in its current, non-signalised configuration, is able to accommodate the traffic associated with an extra 100 homes.

2.5.3.2 Journey Times

Diagrams 2.14 to 2.18 summarise the average journey times for the AM and PM periods.



Note: the y-axis scale has been increased from 600 seconds as used on all other journey time graphs, to 700 vch.

Diagram 2.16: A90(T) eastern approach arm – average journey time (seconds), AM + PM

As shown on the A90(T) eastern approach arm (**Diagram 2.16**), while the difference in journey times between the two scenarios is minor in terms of the total journey time (i.e. an increase of only *circa* 85 seconds as part of a total journey time of around 540 seconds under scenario no. 1), it is clear that the overall journey time, and hence delay, is still relatively high compared to the results on the other three approach arms.

However, these results must be compared to the equivalent 2018 Base results as a means of providing context. As shown in **Diagram 2.17**, the average journey time along the same approach arm, but under the 2018 Base scenario, peaks at 17:00hrs at approximately 425 seconds.

The fact that the predicted journey times on this approach arm for the two assessment scenarios remain relatively high is due, in part, to the long journey times already experienced in the 2018 Base situation. In other words, the apparently long journey times experienced under either of the two assessment scenarios is not necessarily as a direct result of the additional traffic associated with either scenario no.1 (270 homes) or scenario no. 2 (370 homes).

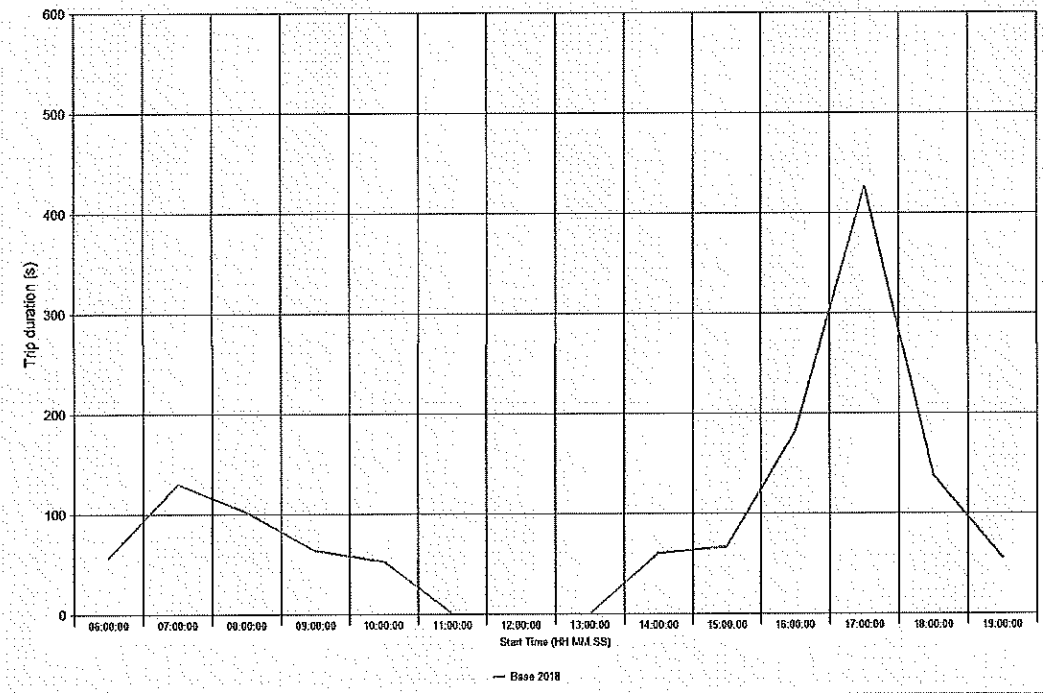


Diagram 2.17: A90(T) eastern approach arm – average journey time (seconds), Base 2018, AM + PM

The overall journey time results suggest that the impact of an additional 100 homes on the operation of the existing Swallow Hotel roundabout will be minor. On all four approach arms, the journey time profiles between the two assessment scenarios are very closely matched. For example, on the A85 approach arm, the average journey time between the two scenarios during the PM period differs by a maximum of only 21 seconds (at 17:00hrs). Furthermore, during the AM period, the journey times closely track each other with negligible difference across the full modelled period.

Based upon the above, it is considered that the traffic associated with an extra 100 homes results in a minimal comparative impact on the operation of the Swallow Hotel roundabout. While the traffic associated with the 370-home scenario does create a larger impact than the traffic associated with the 270-home scenario, the magnitude of this difference is considered to be minor.

3 Summary and Conclusions

3.1 Summary

Ove Arup and Partners Ltd (Arup) have been commissioned by Springfield Properties plc (Springfield) to undertake a review of the potential traffic impacts on the operation of the Swallow Hotel roundabout as a direct result of increasing the number of homes that can be agreed would be built before the infrastructure upgrade works at the roundabout have to be implemented.

The proposals to increase the threshold from 270 homes to 370 homes, as detailed within this report, result in a negligible impact on the operation of the Swallow Hotel roundabout. The magnitude of this impact is considered acceptable within the context of the roundabout's current operation.

The key findings of this review are outlined below:

- Of the 701 Springfield homes at the Western Gateway strategic development area which have received planning consent, 134 were built/occupied as of September 2018;
- The trip generation associated with scenario no. 1 (270 homes) reflects the remaining 136 homes which are yet to be constructed/occupied;
- The trip generation associated with scenario no. 2 (370 homes) reflects the remaining 236 homes which are yet to be constructed/occupied;
- A calibrated/validated S-Paramics 2018 Base model has been used to determine the likely impacts of the traffic associated with scenarios 1 and 2 on the operation of the existing Swallow Hotel roundabout;
- All traffic associated with the 'Miller Homes' and 'Kirkwood Homes' have been included in both modelled scenarios, assuming full build-out of both sites (both sites are located adjacent to Liff Hospital);
- Queueing and journey times on all four approach arms to the Swallow Hotel roundabout have been reviewed and assessed;
- The AM and PM queueing results appear to indicate a negligible impact as a direct result of the additional trips associated with the extra 100 homes;
- While there are some very minor increases in queueing between the two scenarios, this relates primarily to the AM period only. The additional impact created by the 370-home scenario shows the roundabout continuing to closely mirror the results from the 270-home scenario, taking cognisance of the junction's current operation in the Base year (i.e. 2018).
- Where the difference in queue lengths between scenario 1 and scenario 2 is notable, any such differences typically last for only a short period before dissipating (i.e. 15 minutes over the course of the 4-hour PM assessment period, equating to only *circa* 6.3% of the total time period being modelled); and
- The journey time results suggest that the impact of the additional 100 homes on the operation of the existing Swallow Hotel roundabout will be limited. For example, on the A85 approach arm, the average journey time between the two scenarios during the PM period differs by a maximum of only 21 seconds (at 17:00hrs). During the AM period, the

journey times closely track each other with negligible difference across the whole of the modelled period.

3.2 Conclusions

The queueing and journey time results under the 370-home scenario closely mirror the results from the 270-home scenario, both in terms of profile, but also in terms of the quantum. Any impact is therefore considered to be negligible.

Furthermore, the results of this assessment indicate that the traffic associated with an additional 100 homes will not result in any noticeable impact on the overall operation of the Swallow Hotel roundabout (in its current configuration). Any impact is therefore of limited significance.

Meeting between Dundee City Council, Transport Scotland and Springfield Properties PLC

Subject: Swallow Roundabout Upgrade

Date: Wednesday 2nd October @ 2.30pm

Venue: Dundee House, Dundee

AGENDA

1. Introductions
2. ARUP updated report (issued 26/9/19)
3. Land Update
4. Minute of Agreement/Bond
5. Programme & Delivery
6. RCC – Liff
7. AOCB

redacted 11(2)

From: redacted 11(2)
Sent: 05 November 2019 16:11
To: redacted 11(2)
Cc: redacted 11(2)
Subject: Swallow Roundabout
Attachments: Swallow Roundabout rev4 - 04-11-19.pdf

Dear all

Following our productive meeting last month, please find attached our proposed programme. We trust this will enable the Minute of Agreement and RCC to be progressed.

Kind regards

redacted
11(2)

redacted 11(2)
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redacted 11(2)



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For the avoidance of doubt, this email is not intended to form a legally binding contract and the correspondence of which it forms part is expressly subject to the conclusion of legal missives in accordance with Scots Law.

From: redacted 11(2)
Sent: 03 October 2019 08:32
To: redacted 11(2)

redacted 11(2)

Cc:redacted 11(2)

Subject: Our discussions yesterday

Thank you for your time yesterday.

I look forward to providing the reassurances you require that Springfield is fully committed to completing the works on Swallow Roundabout. Please do not hesitate to contact me directly if you have any questions or issues.

Yours sincerely,
redacted 11(2)

Managing Director Central
Springfield
redacted 11(2)

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

redacted 11(2)

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From: redacted 11(2)
Sent: 04 December 2019 15:42
To: redacted 11(2)
Subject: Swallow Roundabout junction upgrade - update

redacted
11(2)

Further to our telephone conversation I can provide you with an update on the Swallow Roundabout junction upgrade.

As you are aware the underlying issue is that of land ownership, with Springfield Properties required to acquire an area of land to enable them to complete the upgrade works. We have been in contact with Springfield and the landowner in recent weeks and have been advised by both parties that they have each instructed separate valuations of the land with a view to agreeing a value and completing the transfer of the land to Springfield. Both parties have indicated that the whole process could be completed by mid-January.

The Council is considering all options to enable the commencement and completion of the roundabout improvement works and the continuation of house building in the Western Gateway Strategic Development Area. This includes the possibility of a promoting a Compulsory Purchase Order in the event that the voluntary purchase is delayed. From our point of view the CPO would serve as a backstop, but one that is very much a last resort as the process is likely to take some time to conclude, and there is of course no guarantee that the process would have a positive outcome.

To ensure that we could act quickly should it be clear that the voluntary purchase does not progress timeously, we have drafted a Committee paper seeking authority to commence the preliminary work on a CPO. The paper remains in draft form and our intention is to review the matter in mid-January when the voluntary purchase is expected to conclude.

I trust that this clarifies our current position. Please do get in touch should you have any questions.

Regards,

redacted 11(2)

Senior Planning Officer
Planning Team
City Development Department
Dundee City Council
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DD1 1LS

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Corporate Web Site: www.dundee.gov.uk