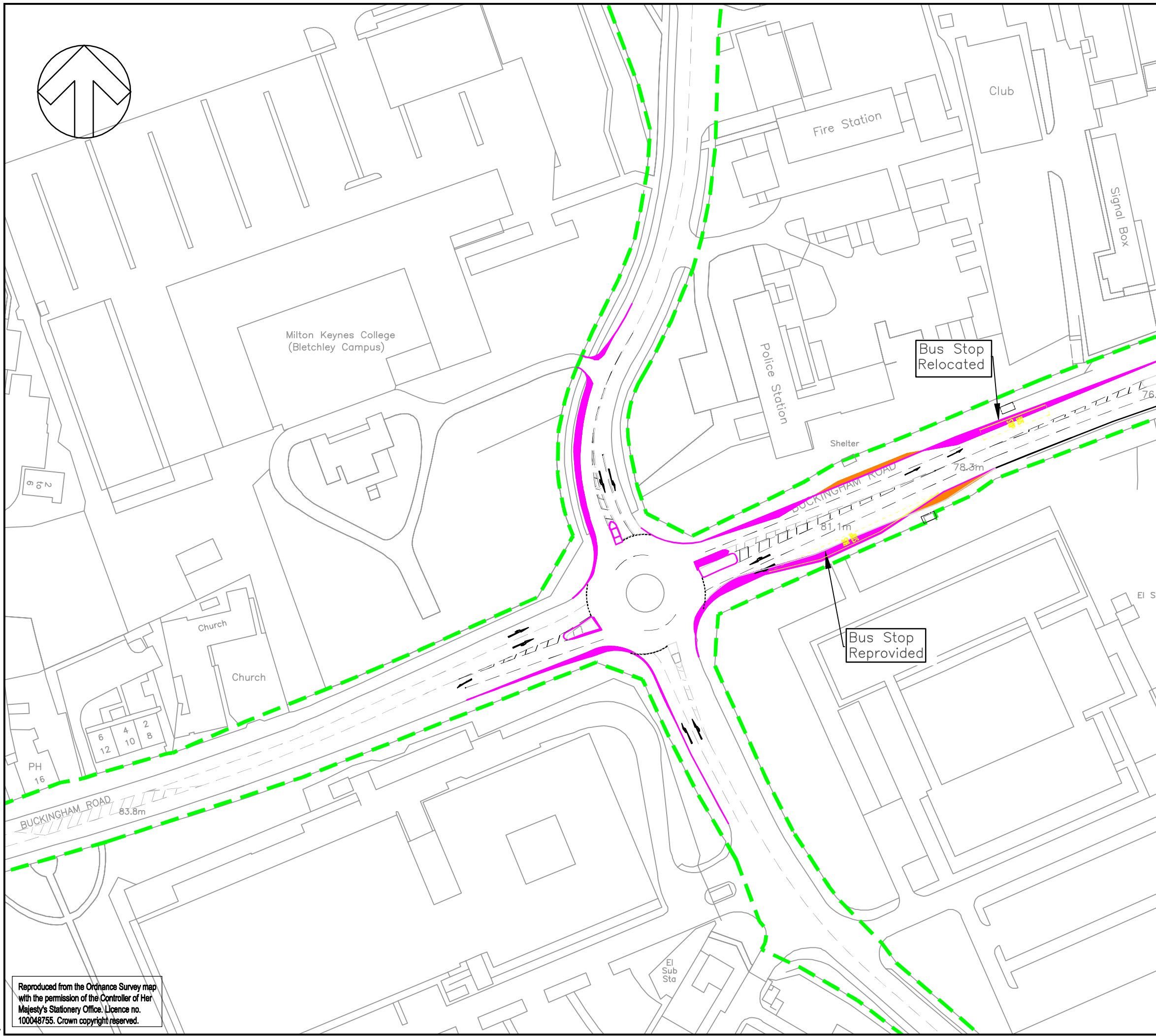
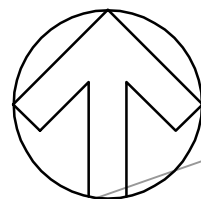


# Appendix D

MITIGATION DRAWINGS





**DO NOT SCALE**

**KEY**

- Highway Boundary
- Kerb Amendments
- Carriageway Construction
- Footway Construction
- Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P04	25/01/2021	JS	REFINED LAYOUT	SH	MJP
P03	22/01/2021	JS	REFINED LAYOUT	SH	MJP
P02	19/01/2021	JS	NEW LAYOUT	SH	MJP

**DRAWING STATUS:** S2 - FOR INFORMATION

2 London Square, Cross Lanes, Guildford, GU1 1UN, UK  
T+ 44 (0) 1483 528 400  
wsp.com

**CLIENT:** South West Milton Keynes Consortium

**ARCHITECT:**

**PROJECT:** South West Milton Keynes

**TITLE:** Junction 1 Mitigation Buckingham Road/Sherwood Drive Roundabout Layout

**SCALE @ A3:** 1:1000      **CHECKED:** JS      **APPROVED:** JS

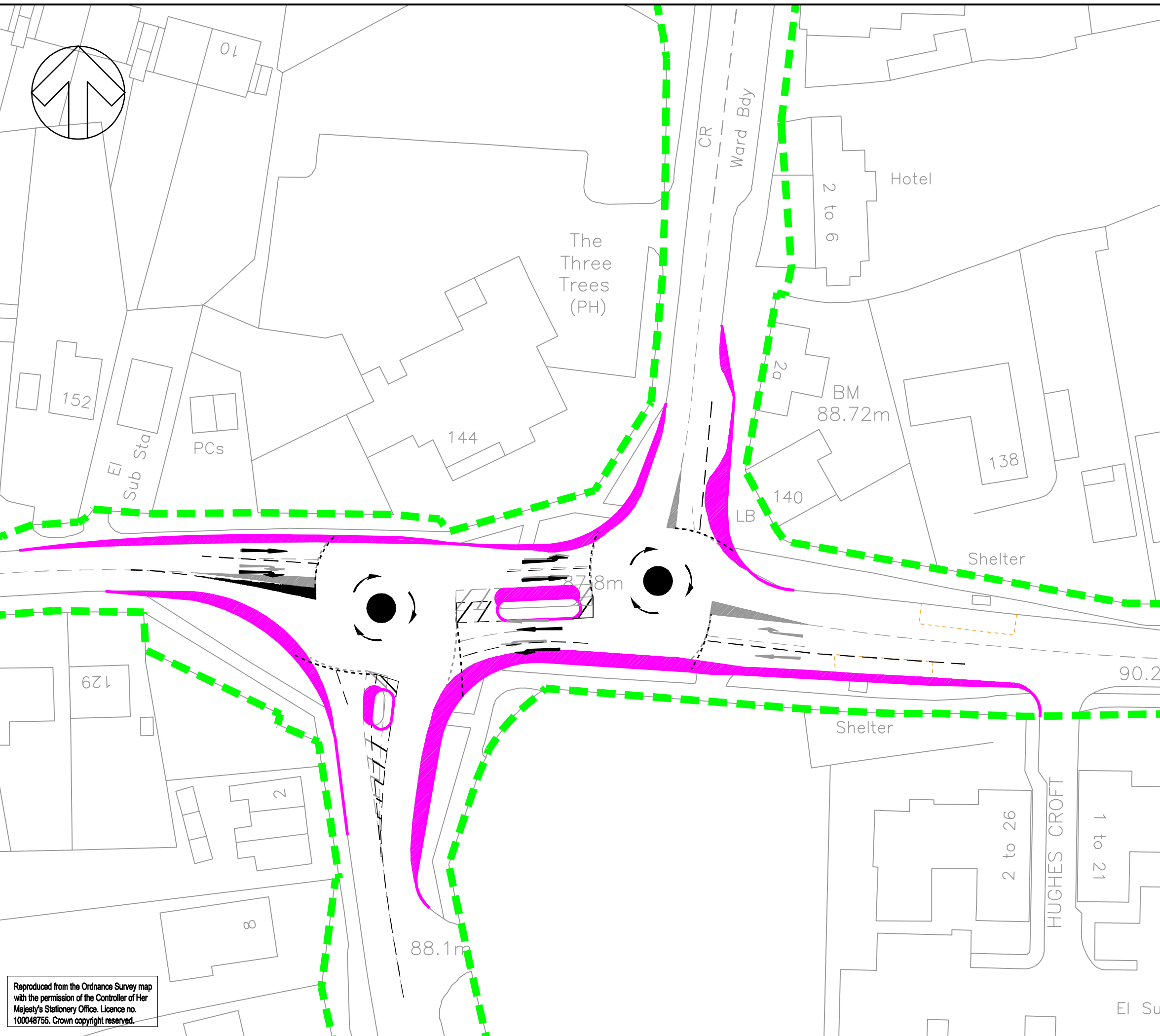
**PROJECT No:** 70069442      **DESIGNED:** JS      **DRAWN:** SET      **DATE:** January 2021

**DRAWING No:** 70069442-001B      **REV:** P04

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File name \\UK.WSPGROUP\PROJECTS\70069442\70069442 - SWMK - 202003 WIP\TP TRANSPORT PLANNING\ANALYSIS\2021 JUNCTION MODELLING\MITIGATION\212 - MINI ROUNDABOUT MITIGATION P03.DWG, printed on 29 January 2021 10:01:49, by Sheriff, Justin



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**DO NOT SCALE**

**KEY**

- - - Highway Boundary
- Kerb Amendments
- Carriageway Construction
- Footway Construction
- Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P03	29/01/2021	JS	HATCHING ADDED	SH	MJP
P02	26/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	21/01/2021	JS	NEW LAYOUT	SH	MJP

**DRAWING STATUS:** S2 - FOR INFORMATION



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T+ 44 (0) 1483 528 400  
wsp.com

**CLIENT:** South West Milton Keynes Consortium

**ARCHITECT:**

**PROJECT:** South West Milton Keynes

**TITLE:** Junction 2 Mitigation Buckingham Road/Shenley Road Mini-Roundabout Layout

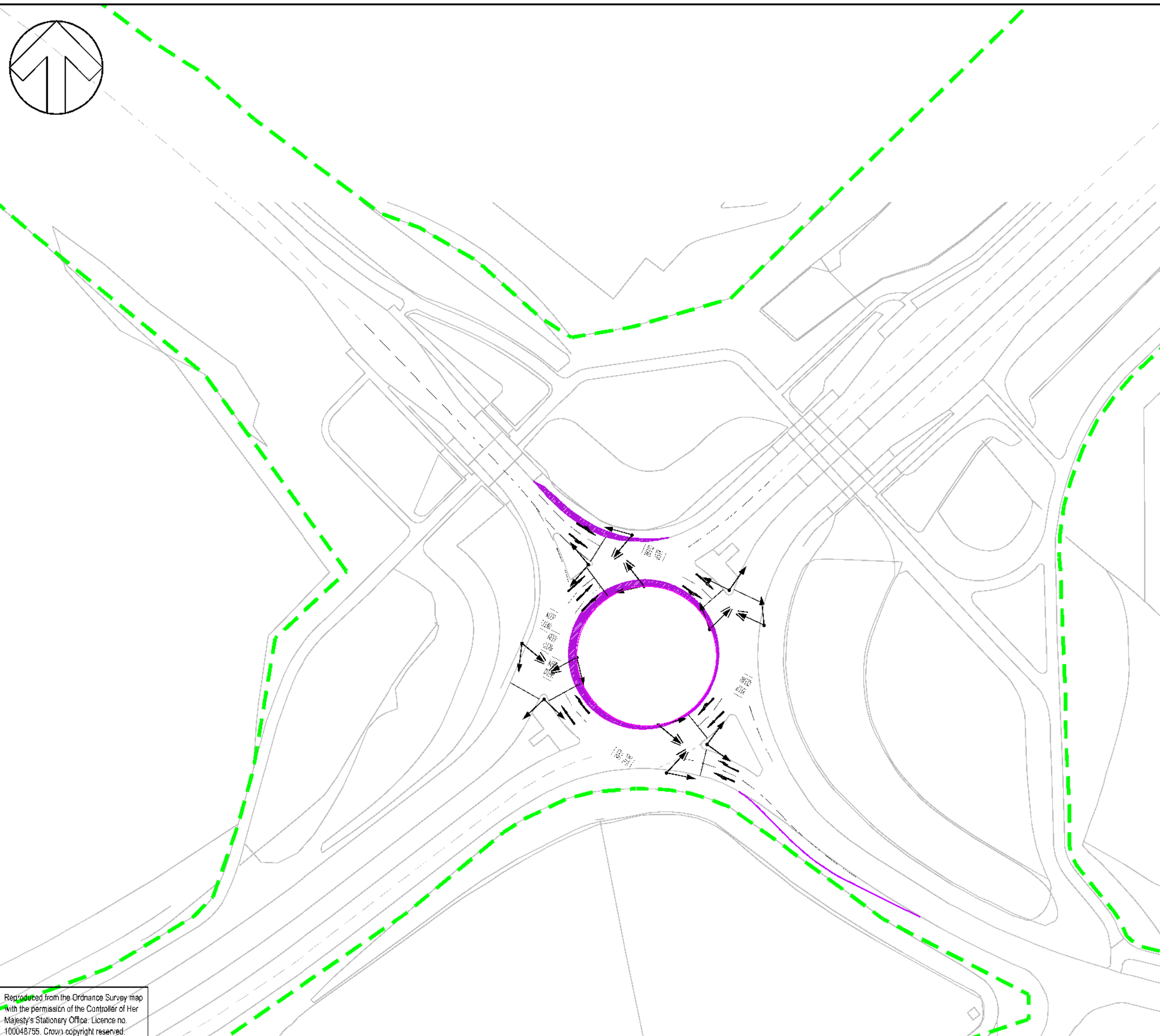
**SCALE @ A3:** 1:500      **CHECKED:** JS      **APPROVED:** JS

**PROJECT No:** 70069442      **DESIGNED:** JS      **DRAWN:** SET      **DATE:** January 2021

**DRAWING No:** 70069442-015      **REV:** P03

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File name: \\UK.WSPGROUP.COM\CENTRAL\_DATA\PROJECTS\70069442 - SWMK - 202003 WIP\TP TRANSPORT PLANNING\ANALYSIS\2021 JUNCTION MODELLING\MITIGATION\J05 - TATTENHOE RBT MITIGATION P05.DWG, printed on 27 January 2021 18:02:02, by Sherifflock, Justin



DO NOT SCALE

KEY

- - - - Highway Boundary
- Kerb Amendments
- Carriageway Construction
- Verge Construction

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REV	DATE	BY	DESCRIPTION	CHK	APP
P05	29/01/2021	ST	MARKINGS REVISED		
P04	12/11/2020	ST	LANE WIDENING ON SNELSHALL STREET		
P03	16/10/2020	ST	LANE MARKINGS UPDATED		
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N		
P01	24/08/2020	ST	FIRST ISSUE		

DRAWING STATUS: **S2 - FOR INFORMATION**

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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **J5 - TATTENHOE ROUNDABOUT JUNCTION MITIGATION**

SCALE @ A3: 1:1000      CHECKED: SH      APPROVED: MP

PROJECT No: 70069442      DESIGNED: ST      DRW'N: ST      DATE: November 2020

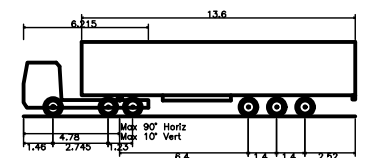
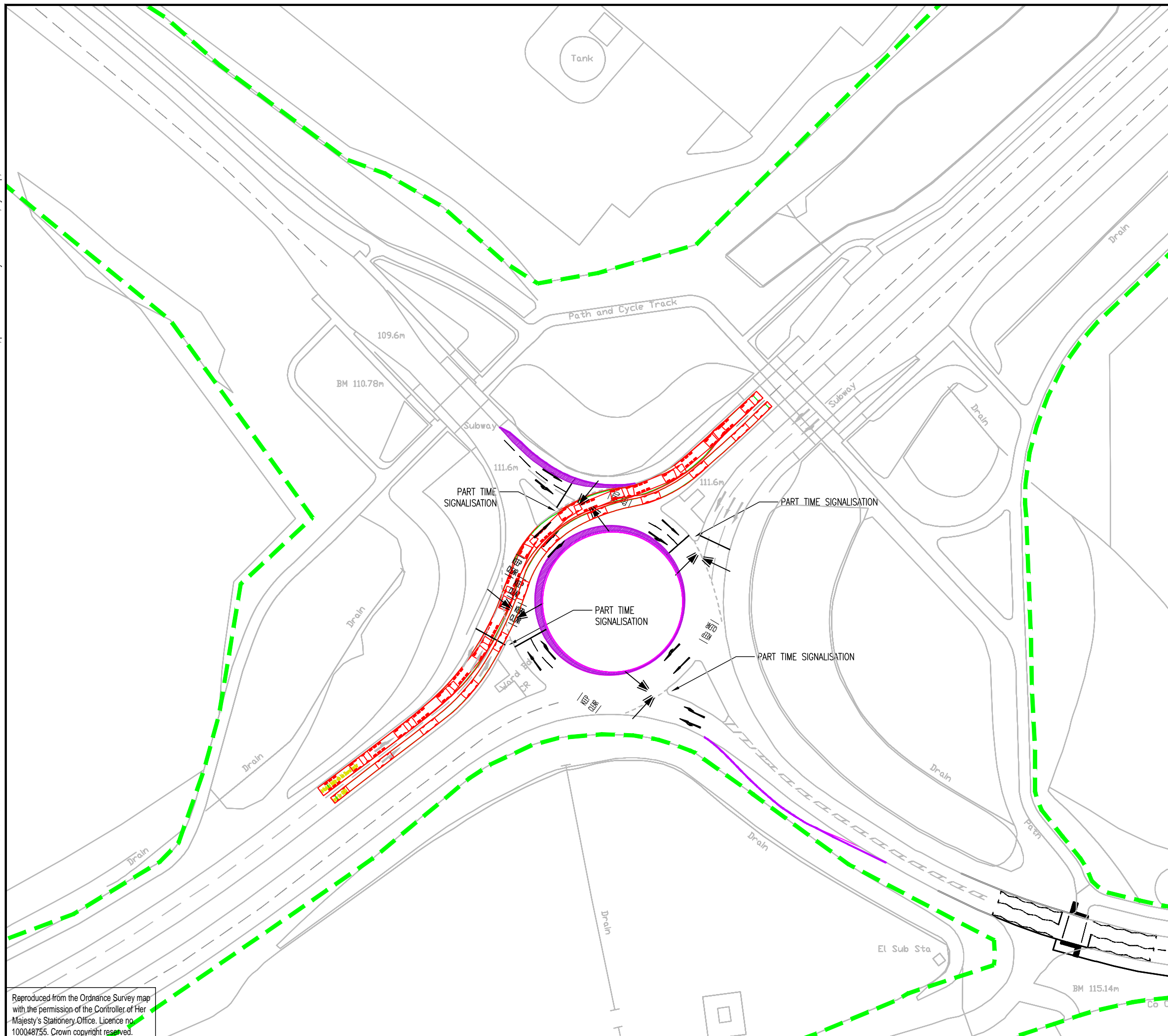
DRAWING No: **9442-TP-SK-004**      REV: **P05**

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File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70069442 - SWMK - 2020\03 WIP\TP TRANSPORT PLANNING\GIS\CAD\DRAWINGS\9442-TP-ATR-002-004 - JK02.DWG, printed on 27 January 2021 08:28:48, by Kemp, James



Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 2.500m  
 Overall Body Height 3.891m  
 Min Body Ground Clearance 0.426m  
 Max Track Width 2.500m  
 Lock to lock time 6.00s  
 Kerb to Kerb Turning Radius 6.987m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEP  
 PATH ANALYSIS - 16.5M ARTIC**

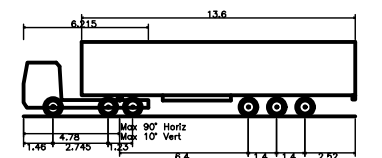
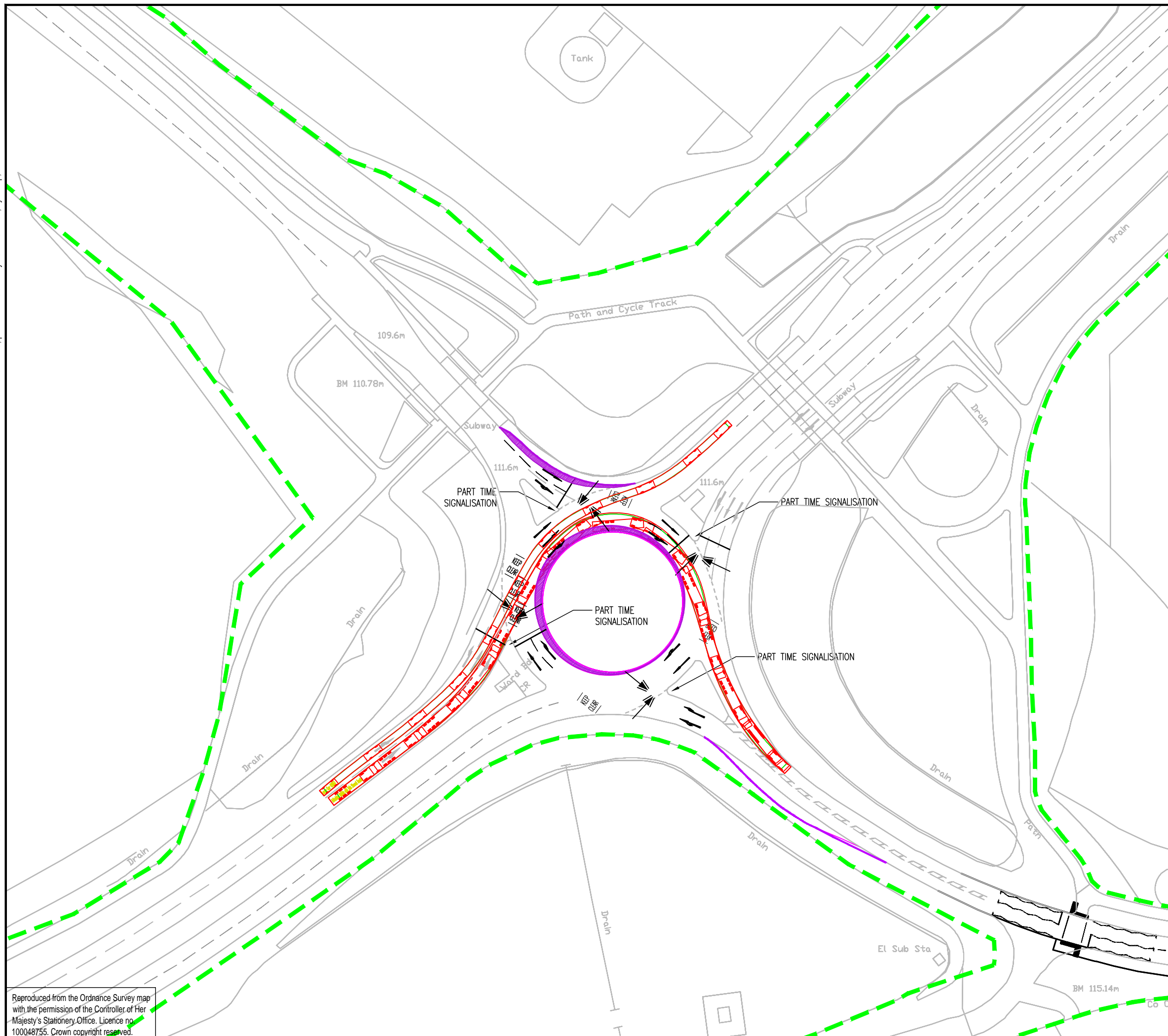
SCALE @ A3: 1:1000      CHECKED: JS      APPROVED: JS

PROJECT No: 70069442      DESIGNED: JK      DRAWN: JK      DATE: October 2020

DRAWING No: 9442-TP-ATR-002      REV: P01

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File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70069442 - SWMK - 2020\03 WIP\TP TRANSPORT PLANNING\GIS\CAD\DRAWINGS\9442-TP-ATR-002-004 - JK02.DWG, printed on 26 January 2021 15:24:08, by Kemp, James



Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 2.500m  
 Overall Body Height 3.891m  
 Min Body Ground Clearance 0.426m  
 Max Track Width 2.500m  
 Lock to lock time 6.00s  
 Kerb to Kerb Turning Radius 6.987m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P04	14/12/2020	JK	UPDATED TRACKING	JS	JS
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEPED PATH ANALYSIS - 16.5M ARTIC**

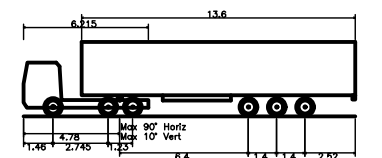
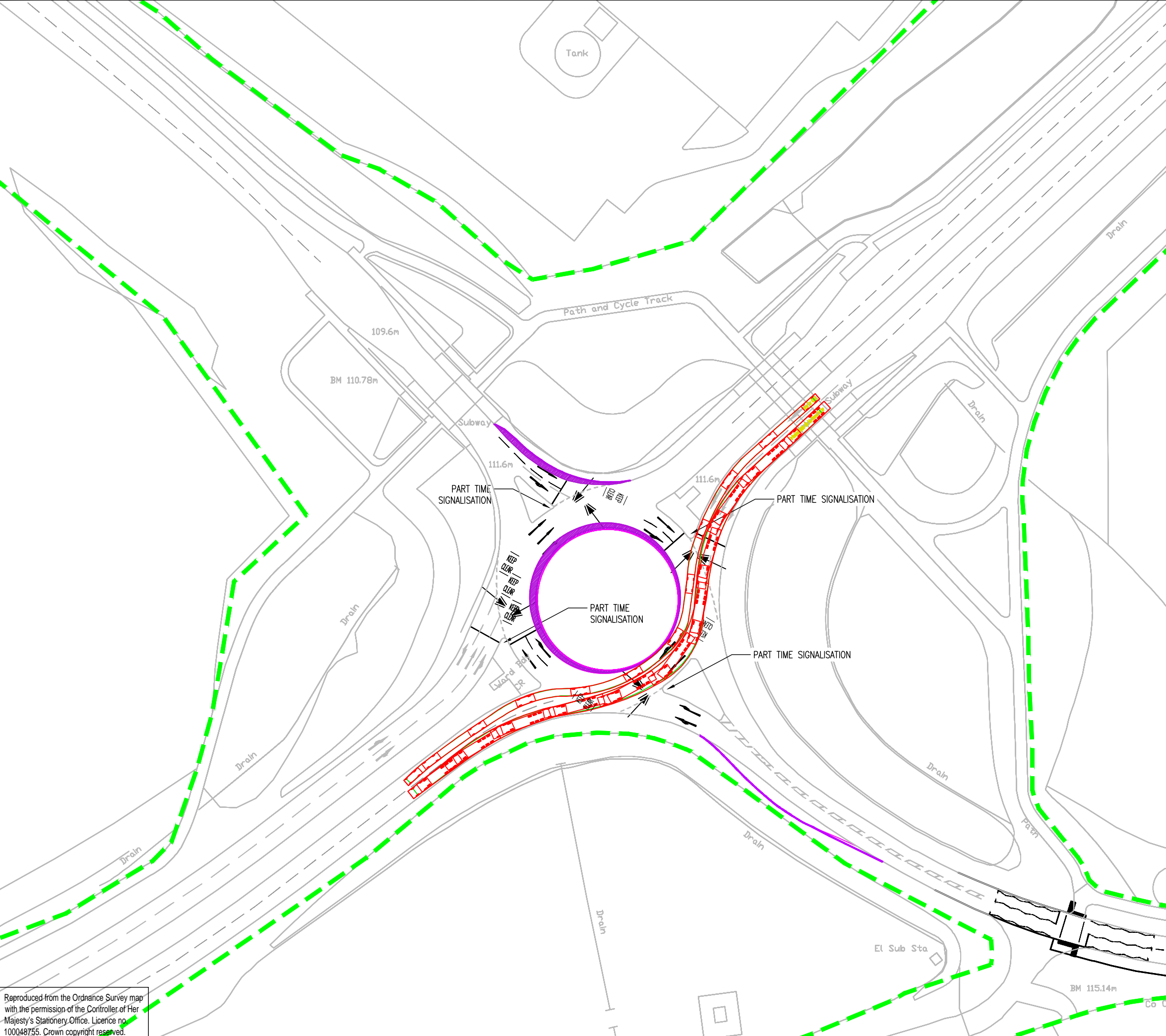
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PROJECT No: 70069442      DESIGNED: JK      DRAWN: JK      DATE: January 2021

DRAWING No: **9442-TP-ATR-004**      REV: **P04**

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File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70069442 - SWMK - 2020\03 WIP\TP TRANSPORT PLANNING\GIS\CAD\DRAWINGS\9442-TP-ATR-005-007 JK02.DWG, printed on 26 January 2021 15:49:17, by Kemp, James



Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 2.500m  
 Overall Body Height 3.891m  
 Min Body Ground Clearance 0.426m  
 Max Track Width 2.500m  
 Lock to lock time 6.00s  
 Kerb to Kerb Turning Radius 6.987m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P04	21/01/2021	JK	ROUNDABOUT AND TRACKING AMENDED	JS	JS
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEPED PATH ANALYSIS - 16.5M ARTIC**

SCALE @ A3: 1:1000      CHECKED: JS      APPROVED: JS

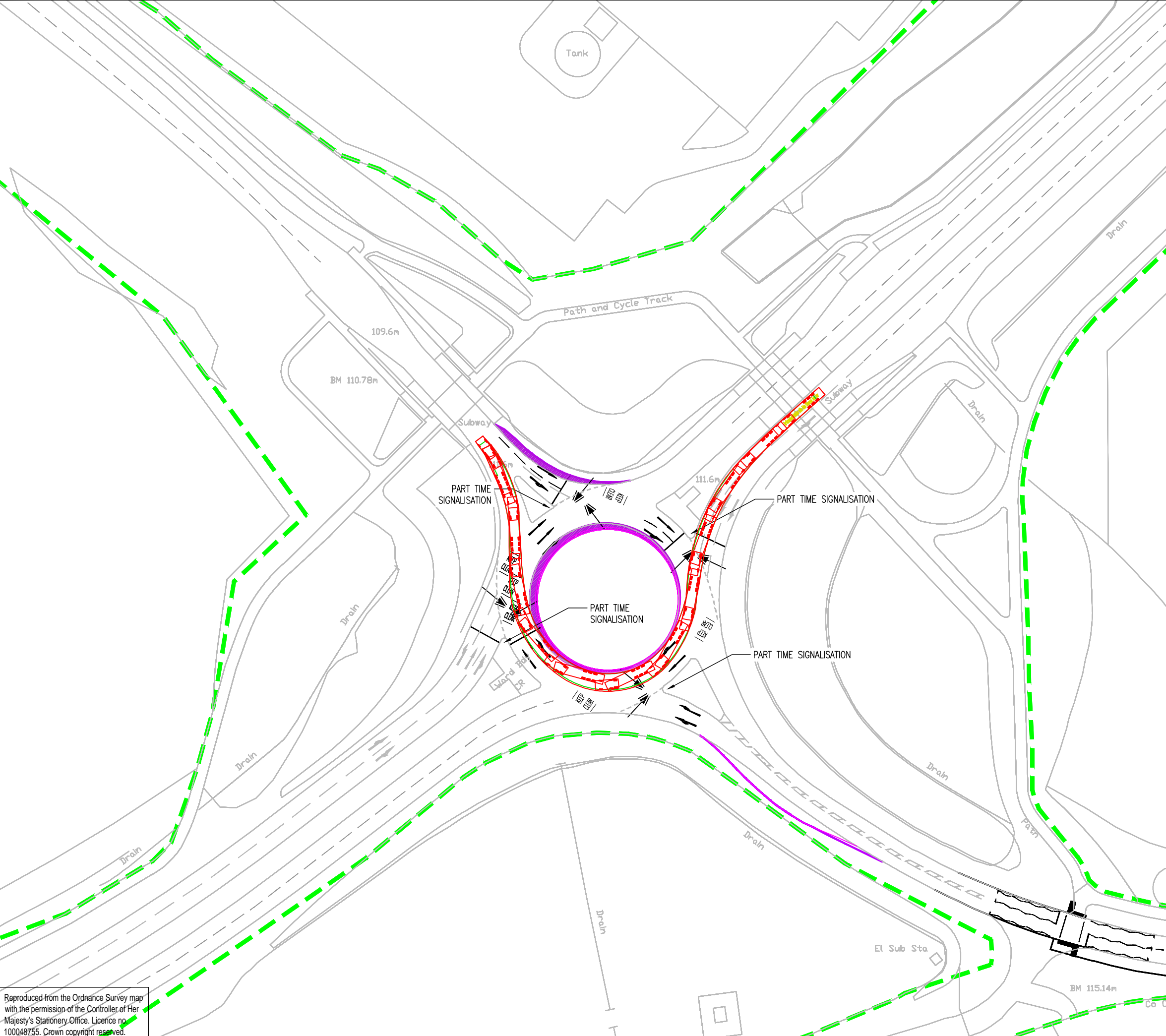
PROJECT No: 70069442      DESIGNED: JK      DRAWN: JK      DATE: January 2021

DRAWING No: **9442-TP-ATR-005**      REV: **P04**

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REV	DATE	BY	DESCRIPTION	CHK	APP
P04	21/01/2021	JK	ROUNDABOUT AND TRACKING AMENDED	JS	JS
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEPED PATH ANALYSIS - 16.5M ARTIC**

SCALE @ A3: 1:1000      CHECKED: JS      APPROVED: JS

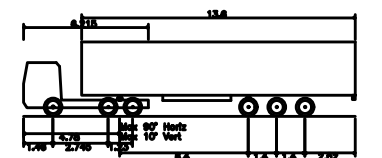
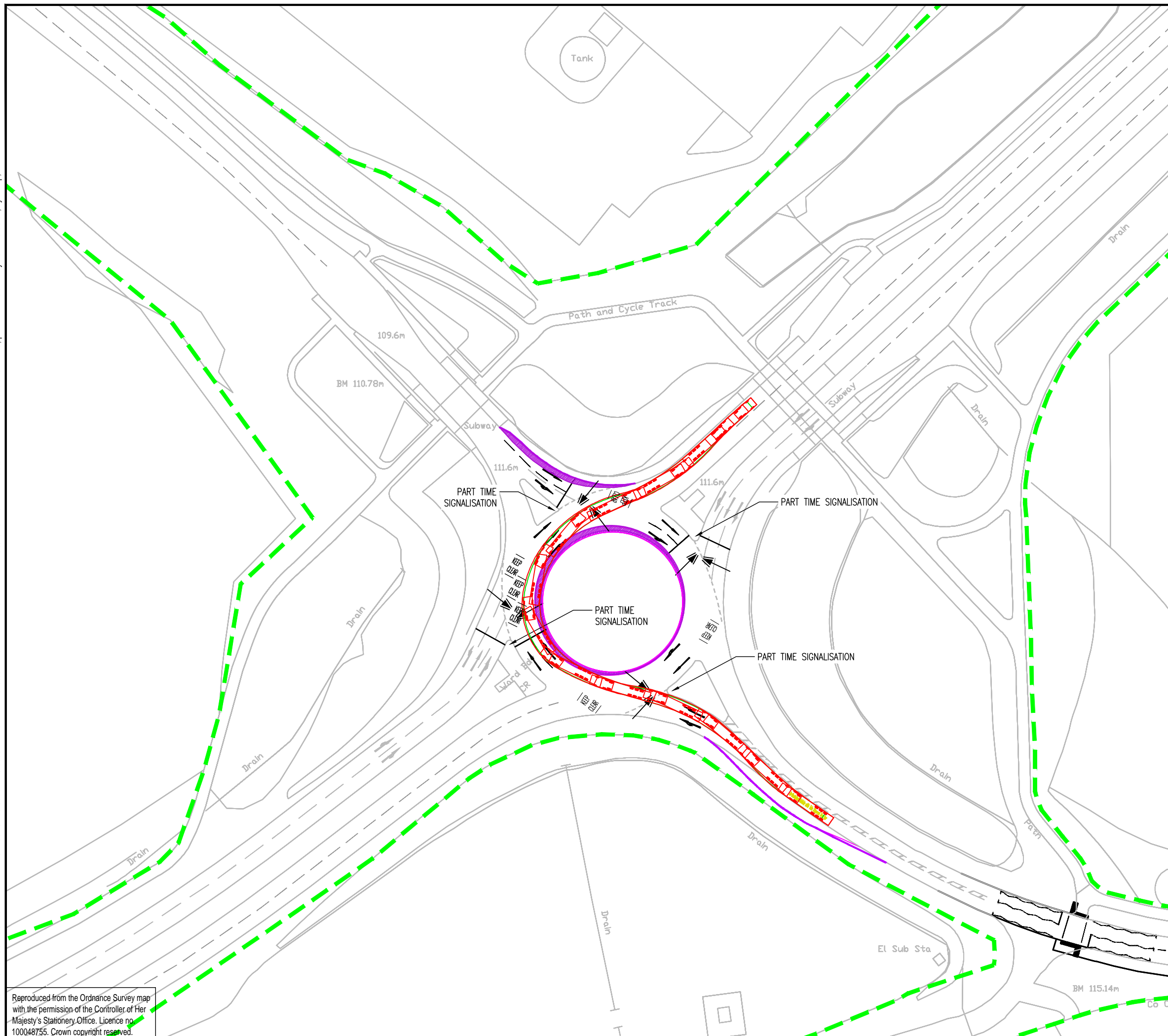
PROJECT No: 70069442      DESIGNED: JK      DRAWN: JK      DATE: January 2021

DRAWING No: **9442-TP-ATR-007**      REV: **P04**

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Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 4.250m  
 Overall Body Height 0.425m  
 Min Body Ground Clearance 2.500m  
 Max Track Width 6.000m  
 Lock to lock time 8.000s  
 Kerb to Kerb Turning Radius 6.957m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P04	20/01/2021	JK	ROUNDABOUT AND TRACKING AMENDED	JK	JK
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEPED PATH ANALYSIS - 16.5M ARTIC**

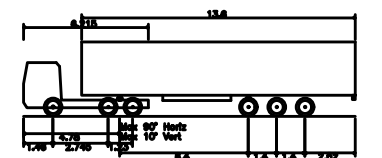
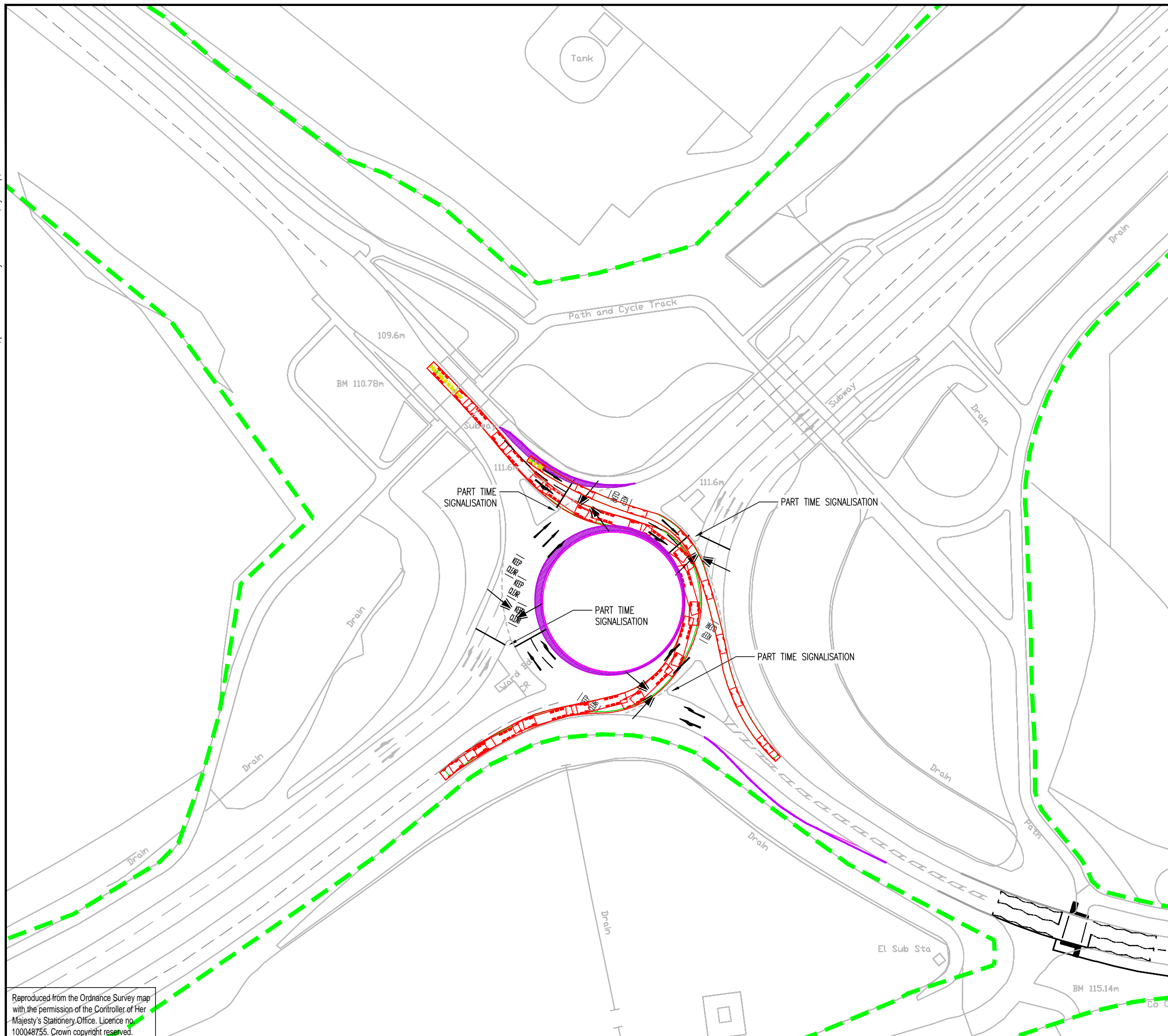
SCALE @ A3: 1:1000      CHECKED: JS      APPROVED: JS

PROJECT No: 70069442      DESIGNED: JK      DRAWN: JK      DATE: January 2021

DRAWING No: **9442-TP-ATR-009**      REV: **P04**

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Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 4.250m  
 Overall Body Height 0.425m  
 Min Body Ground Clearance 2.500m  
 Max Track Width 6.000m  
 Lock to lock time 8.000s  
 Kerb to Kerb Turning Radius 6.957m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P04	20/12/2020	JK	TRACKING UPDATED	JS	JS
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEP  
 PATH ANALYSIS - 16.5M ARTIC**

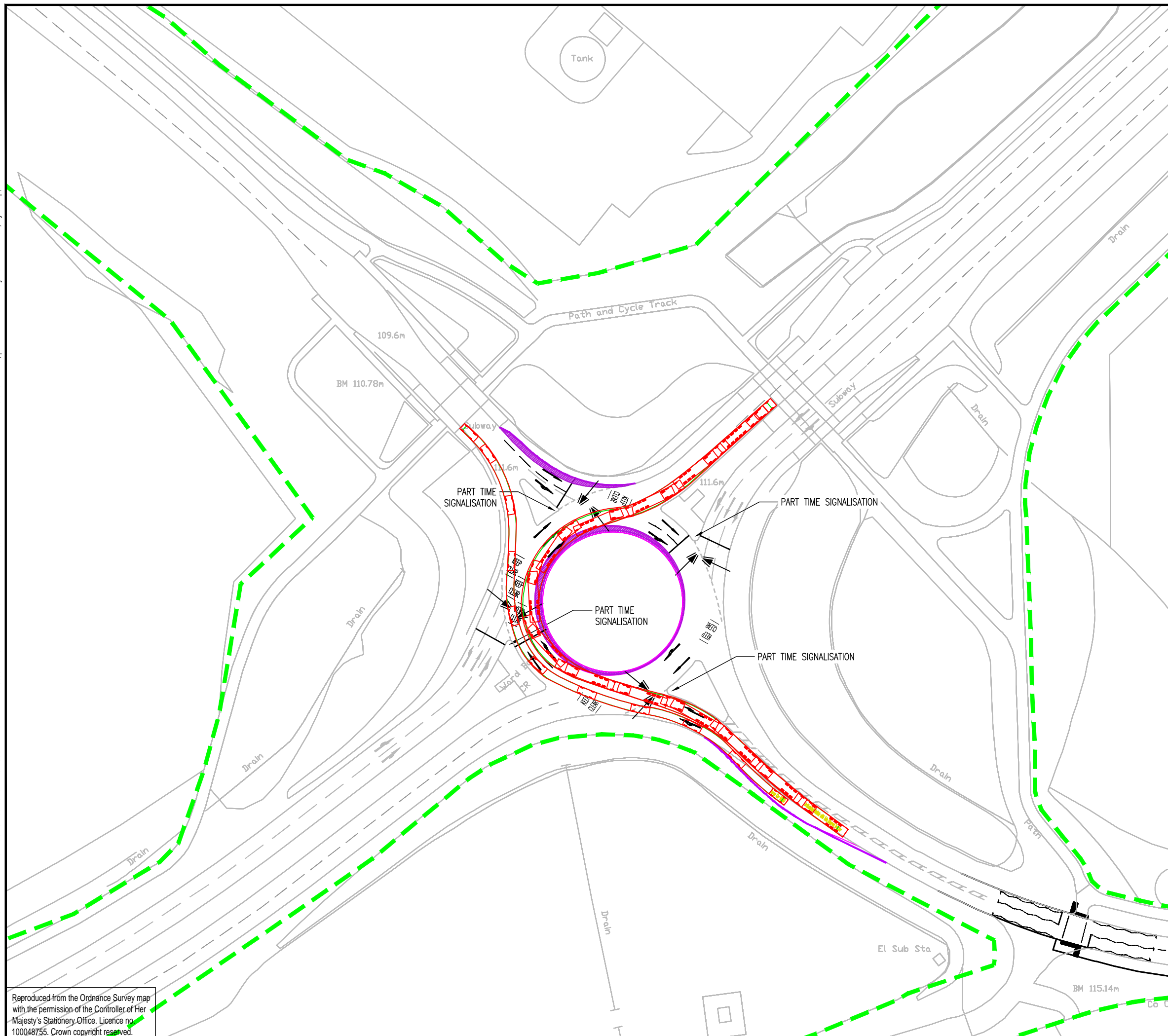
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PROJECT No: 70069442      DESIGNED: JK      DRAWN: JK      DATE: January 2021

DRAWING No: **9442-TP-ATR-012**      REV: **P04**

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P01	20/01/2021	JK	FIRST ISSUE	JS	JS
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEPED PATH ANALYSIS - 16.5M ARTIC**

SCALE @ A3:	CHECKED:	APPROVED:
1:1000	JS	JS

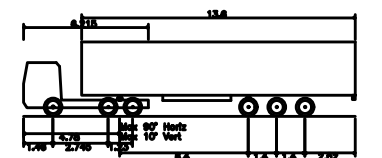
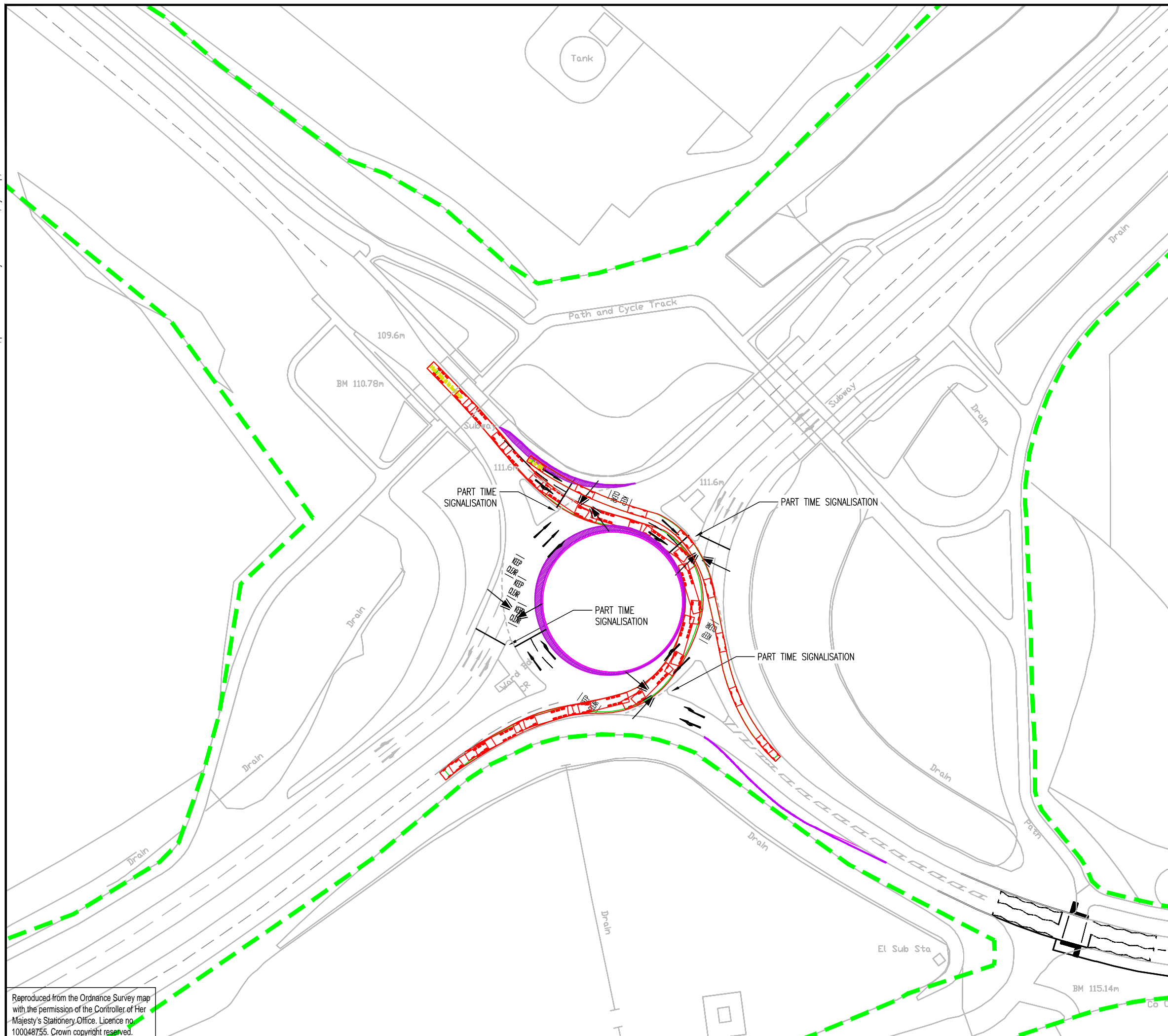
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70069442	JK	JK	January 2021

DRAWING No:	REV:
9442-TP-ATR-013	P01

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Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 4.250m  
 Overall Body Height 0.426m  
 Min Body Ground Clearance 2.500m  
 Max Track Width 6.000m  
 Lock to lock time 8.000s  
 Kerb to Kerb Turning Radius 6.987m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P01	20/01/2021	JK	FIRST ISSUE	JS	JS

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEP  
 PATH ANALYSIS - 16.5M ARTIC**

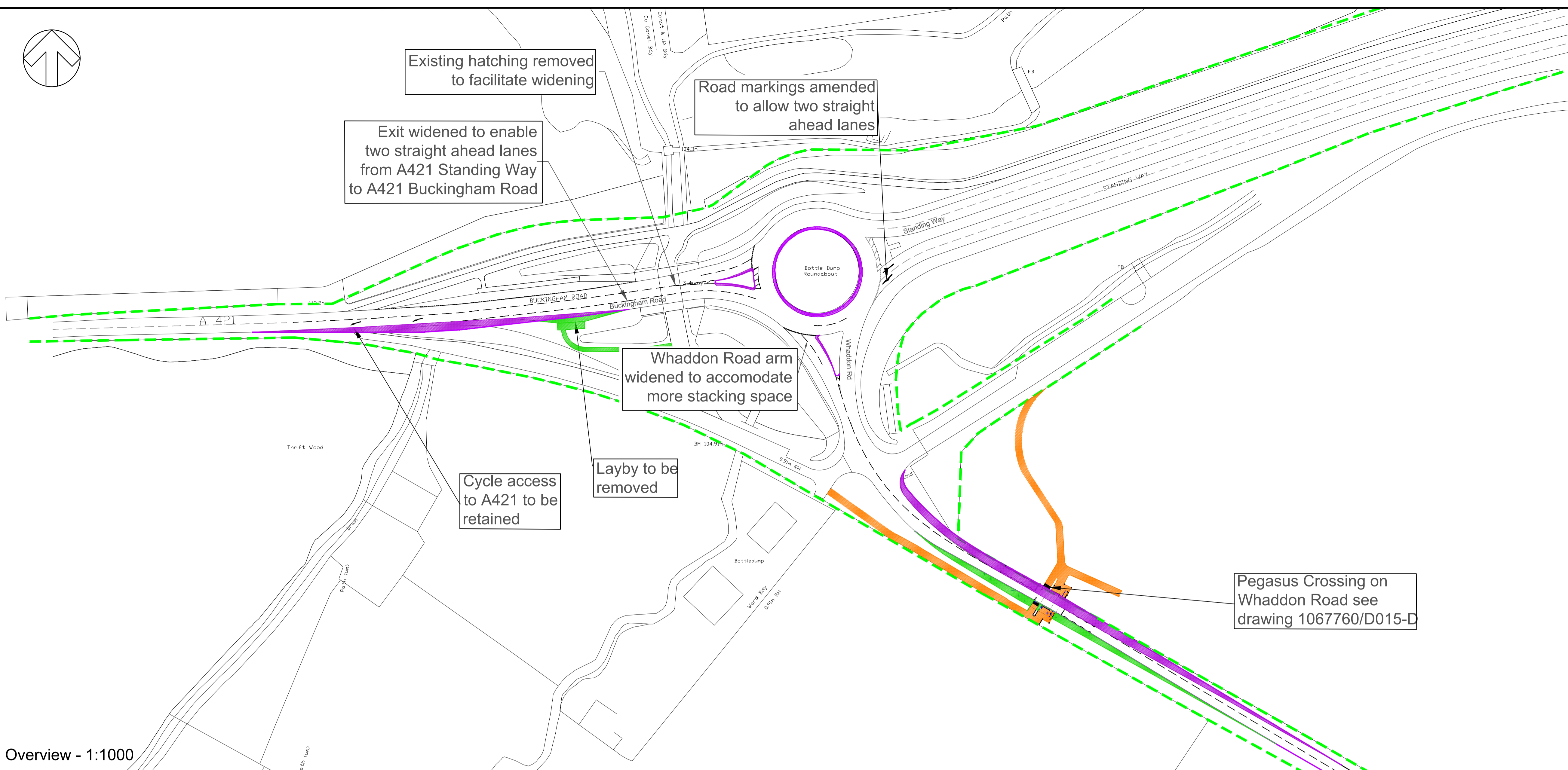
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PROJECT No: 70069442      DESIGNED: JK      DRAWN: JK      DATE: January 2021

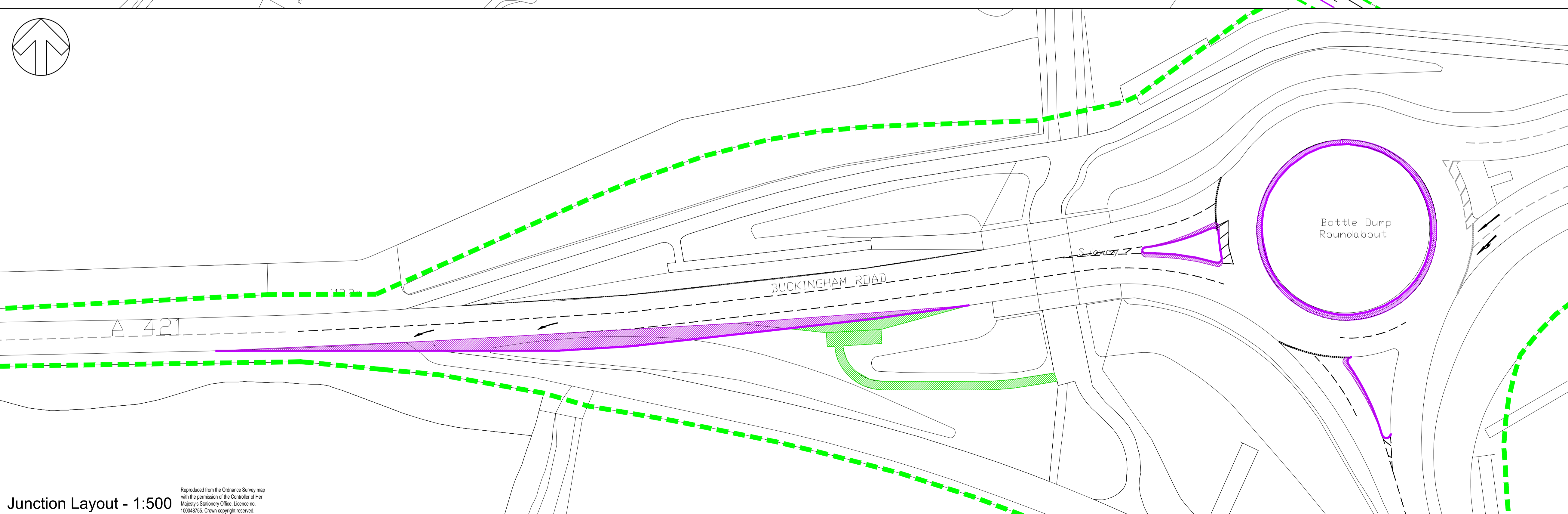
DRAWING No: 9442-TP-ATR-014      REV: P01

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Overview - 1:1000



Junction Layout - 1:500

File name: I:\UK\WSPGROUP\COMCENTRAL\DATA\PROJECTS\10069442\SWMK\_202003\WPTP\_TRANSPORT\_PLANNING\ANALYSIS\2021\JUNCTION\_MODELING\MITIGATION\_LAYOUT.rvt  
 25/01/2021 18:00:21 by: Shereck, Justin

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DO NOT SCALE

- KEY
- - - Highway Boundary
  - Kerb Amendments
  - Carriageway Construction
  - Footway Construction
  - Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P05	25/01/2021	JS	AMENDED LAYOUT	SH	MJP
P04	12/11/2020	JK	AMENDED LAYOUT	SH	MJP

DRAWING STATUS: **S2 - FOR INFORMATION**

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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

SITE/PROJECT: South West Milton Keynes

TITLE: Junction 6 Mitigation Layout  
Bottle Dump Roundabout

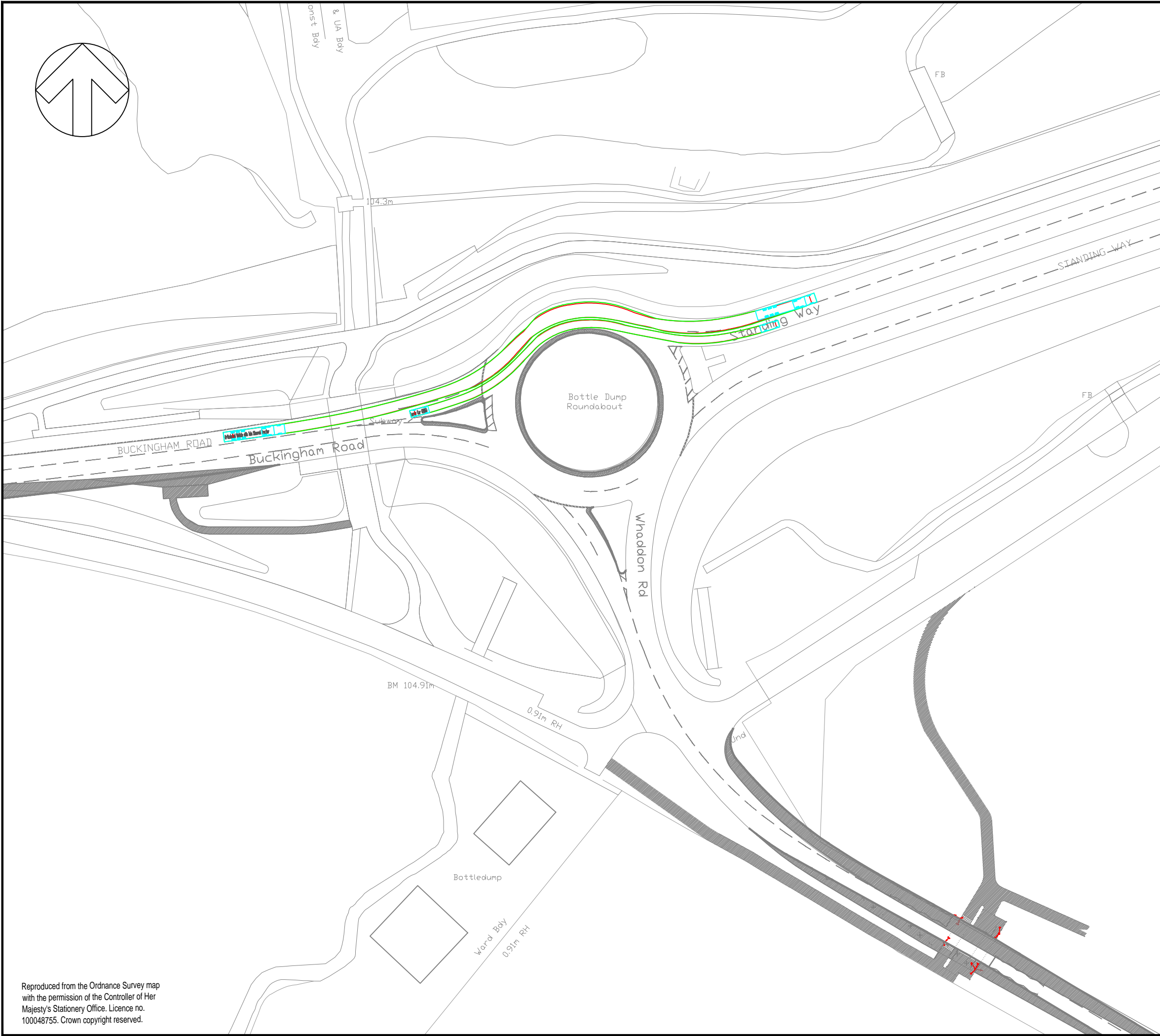
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PROJECT NO: South West Milton Keynes	DESIGNED: JS	DRAWN: JK
	DATE: January 21	

DRAWING NO: 70069442-004	REV: P05
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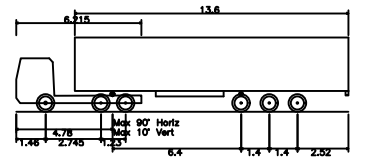


File name \\UK.WSPGROUP.COM\CENTRAL\_DATA\PROJECTS\70069442 - SWMK - 2020\03 WIPTP TRANSPORT PLANNING\GIS\CAD\DRAWINGS\J6 - BOTTLEDUMP - ATR.DWG, printed on 26 January 2021 11:42:12, by Kemp, James



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DO NOT SCALE



Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 2.500m  
 Overall Body Height 3.831m  
 Min Body Ground Clearance 0.426m  
 Max Track Width 2.500m  
 Lock to lock time 6.00s  
 Kerb to Kerb Turning Radius 6.987m

P02	25/01/2021	JK	FIRST ISSUE	JS	JS
REV	DATE	BY	DESCRIPTION	CHK	APP

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ARCHITECT:

PROJECT: South West Milton Keynes

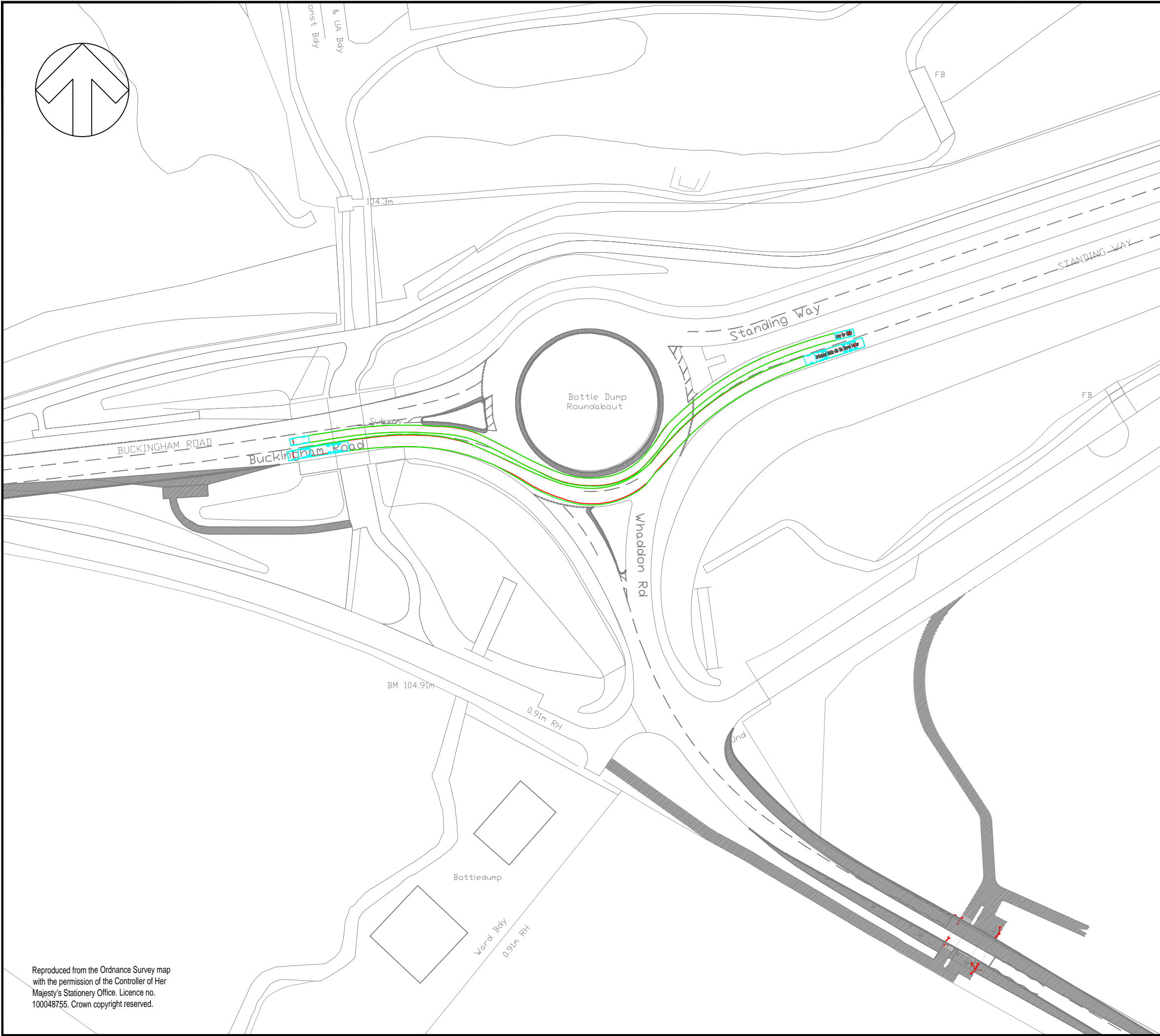
TITLE: Junction 6 - Bottle Dump Roundabout - Swept Path Analysis - 16.5m Artic

SCALE @ A3: 1:1000	CHECKED: JS	APPROVED: JS
PROJECT No: 70069442	DESIGNED: JS	DRAWN: JK
		DATE: January 21

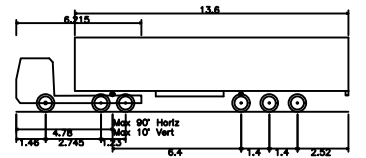
DRAWING No: 70069442-004-ATR-001	REV: P01
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DO NOT SCALE



Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 2.500m  
 Overall Body Height 3.831m  
 Min Body Ground Clearance 0.426m  
 Max Track Width 2.500m  
 Lock to lock time 6.00s  
 Kerb to Kerb Turning Radius 6.987m

P02	25/01/2021	JK	FIRST ISSUE	JS	JS
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S2 - FOR INFORMATION



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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

PROJECT: South West Milton Keynes

TITLE: Junction 6 - Bottle Dump Roundabout - Swept Path Analysis - 16.5m Artic

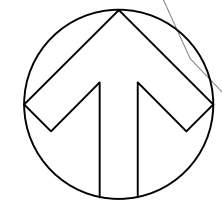
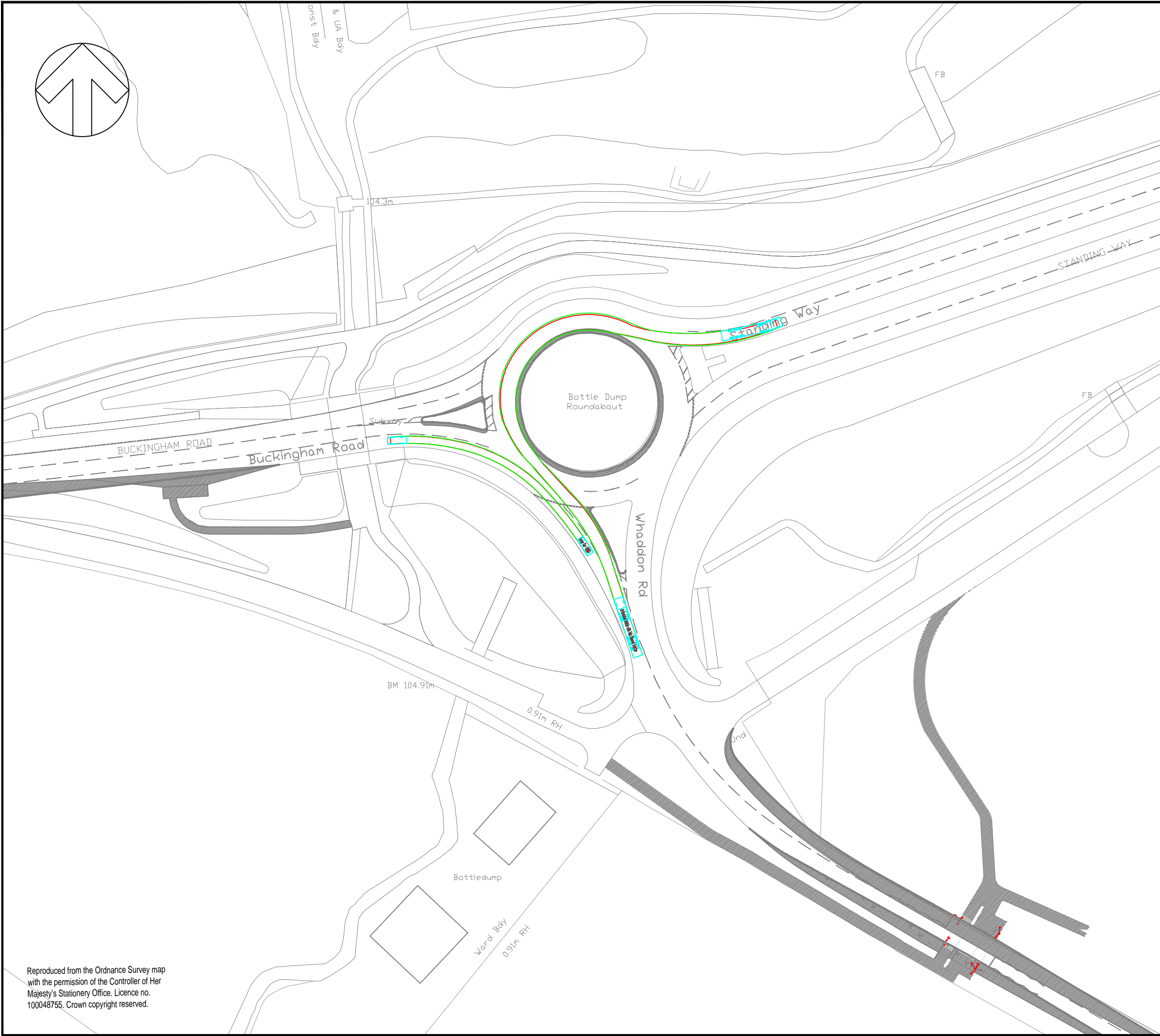
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		DATE: January 21

DRAWING No: 70069442-004-ATR-002	REV: P01
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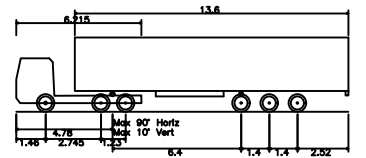
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DO NOT SCALE



Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 2.500m  
 Overall Body Height 3.831m  
 Min Body Ground Clearance 0.426m  
 Max Track Width 2.500m  
 Lock to lock time 6.00s  
 Kerb to Kerb Turning Radius 6.987m

P02	25/01/2021	JK	FIRST ISSUE	JS	JS
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S2 - FOR INFORMATION



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ARCHITECT:

PROJECT: South West Milton Keynes

TITLE: Junction 6 - Bottle Dump Roundabout - Swept Path Analysis - 16.5m Artic

SCALE @ A3: 1:1000	CHECKED: JS	APPROVED: JS
PROJECT No: 70069442	DESIGNED: JS	DRAWN: JK
		DATE: January 21

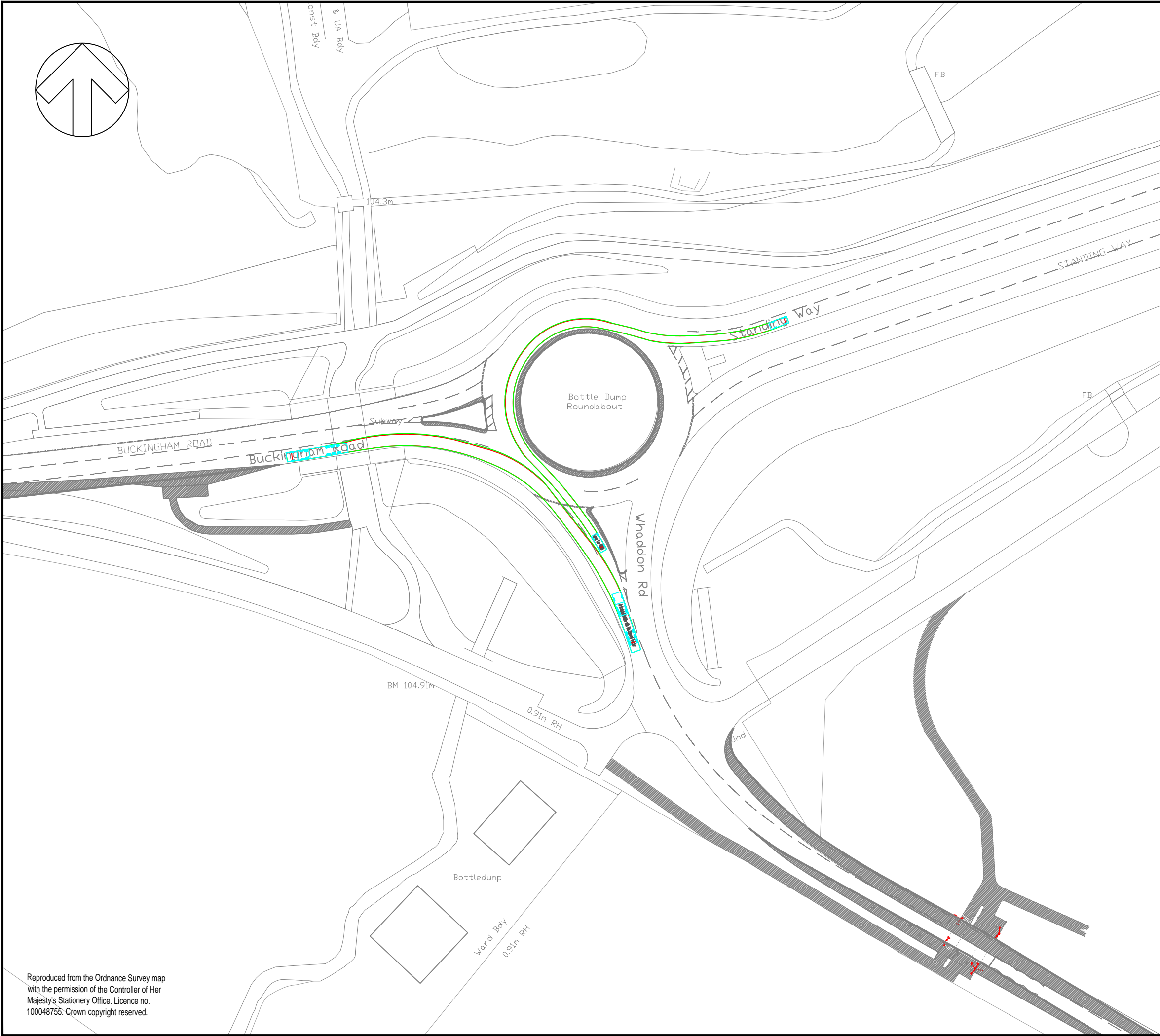
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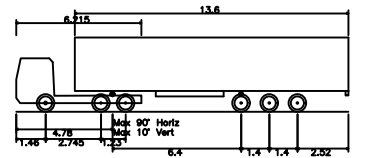
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DO NOT SCALE



Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 2.500m  
 Overall Body Height 3.831m  
 Min Body Ground Clearance 0.426m  
 Max Track Width 2.500m  
 Lock to lock time 6.00s  
 Kerb to Kerb Turning Radius 6.987m

P02	25/01/2021	JK	FIRST ISSUE	JS	JS
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S2 - FOR INFORMATION



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ARCHITECT:

PROJECT: South West Milton Keynes

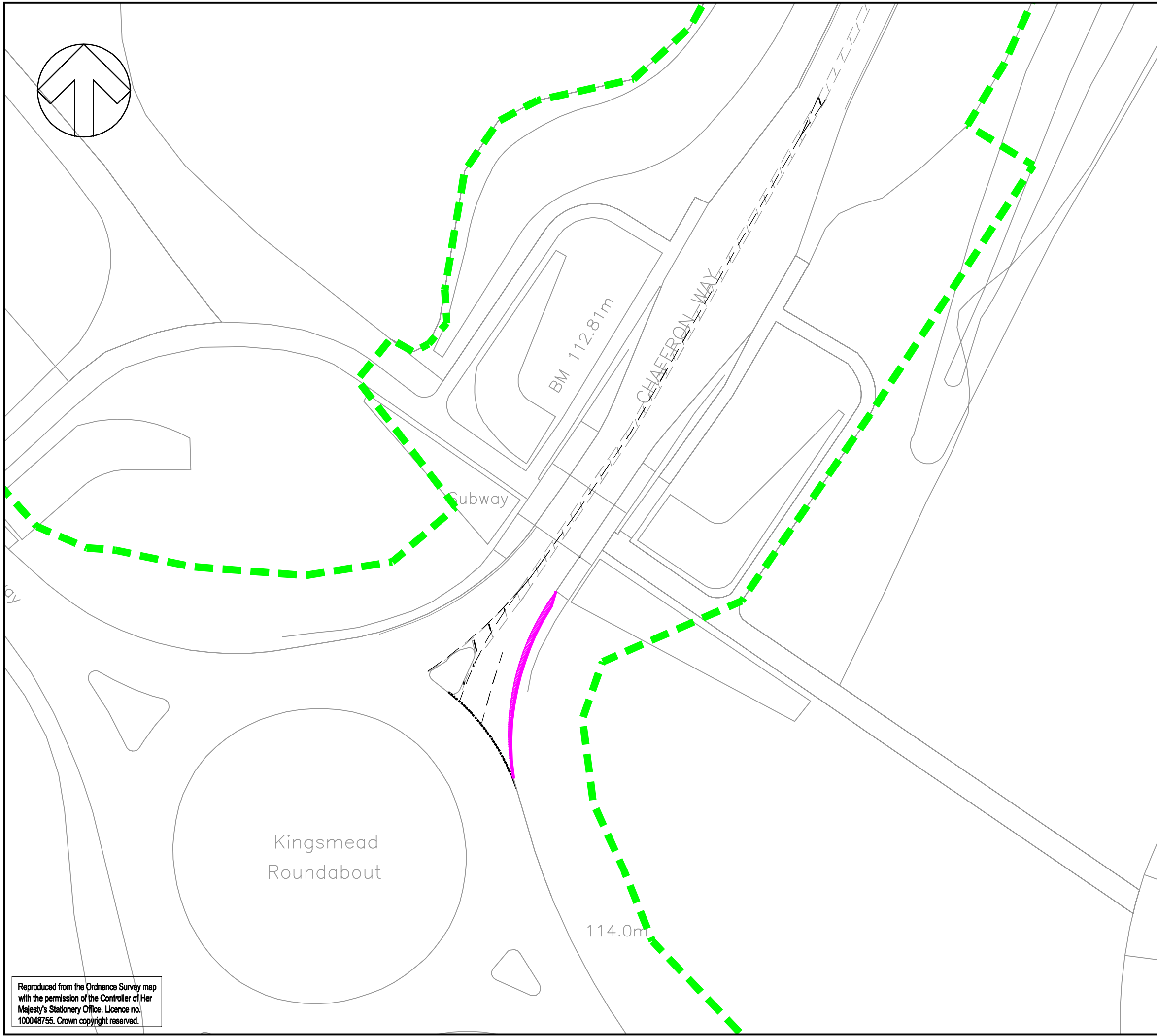
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SCALE @ A3: 1:1000	CHECKED: JS	APPROVED: JS
PROJECT No: 70069442	DESIGNED: JS	DRAWN: JK
		DATE: January 21

DRAWING No: 70069442-004-ATR-004	REV: P01
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**DO NOT SCALE**

**KEY**

	Highway Boundary
	Kerb Amendments
	Carriageway Construction
	Footway Construction
	Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	22/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

**DRAWING STATUS:** S2 - FOR INFORMATION

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**CLIENT:** South West Milton Keynes Consortium

**ARCHITECT:**

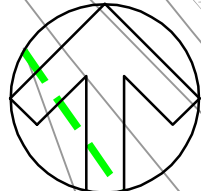
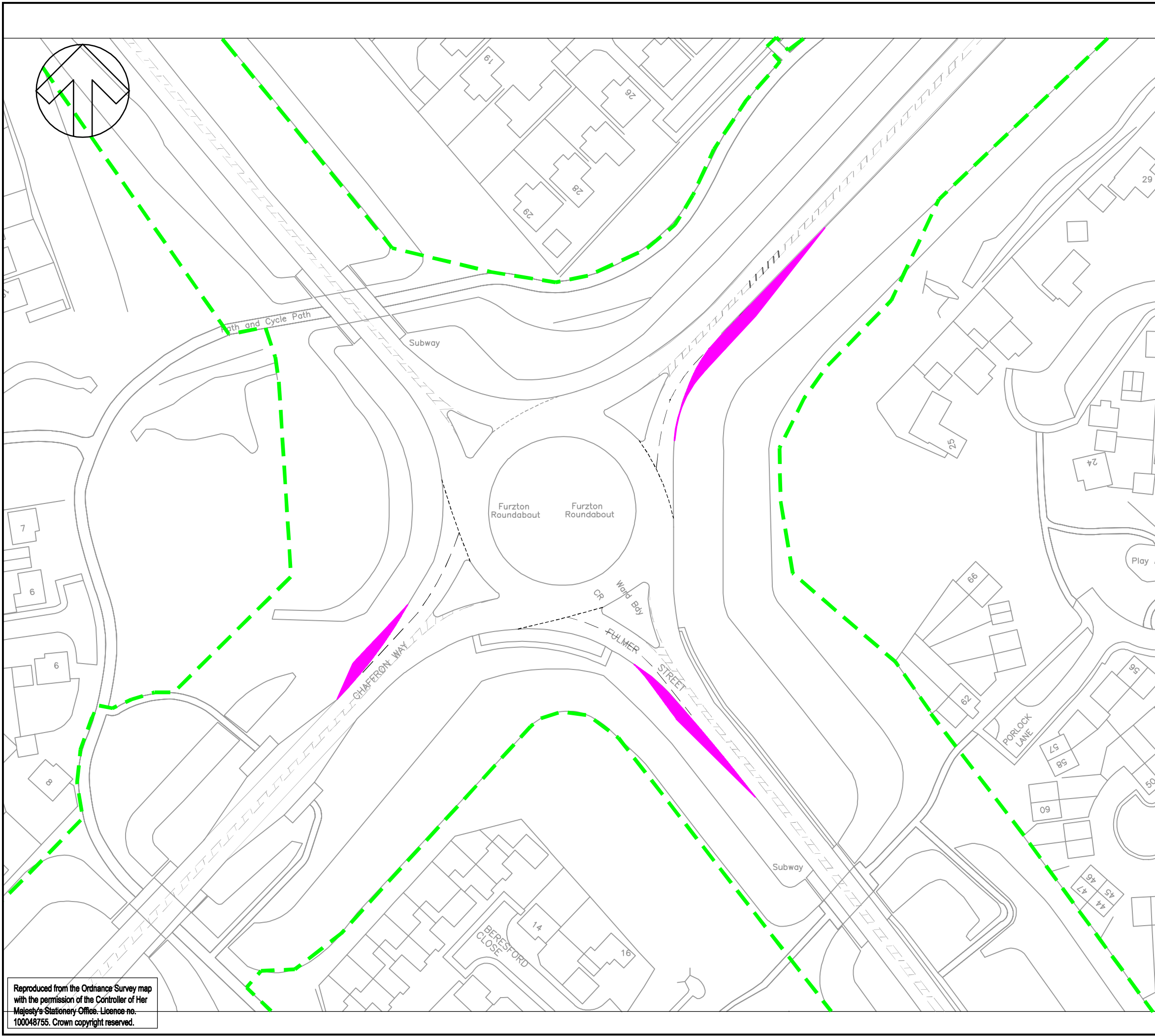
**PROJECT:** South West Milton Keynes

**TITLE:** Junction 12 Mitigation Kingsmead Roundabout

<b>SCALE @ A3:</b> 1:500	<b>CHECKED:</b> JS	<b>APPROVED:</b> JS
<b>PROJECT No:</b> 70069442	<b>DESIGNED:</b> JS	<b>DRAWN:</b> SET
<b>DRAWING No:</b> 70069442-010	<b>DATE:</b> January 2021	
		<b>REV:</b> P02

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**DO NOT SCALE**

**KEY**

	Highway Boundary
	Kerb Amendments
	Carriageway Construction
	Footway Construction
	Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	22/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

**DRAWING STATUS:** S2 - FOR INFORMATION



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**CLIENT:** South West Milton Keynes Consortium

**ARCHITECT:**

**PROJECT:** South West Milton Keynes

**TITLE:** Junction 14 Mitigation Furzton Roundabout

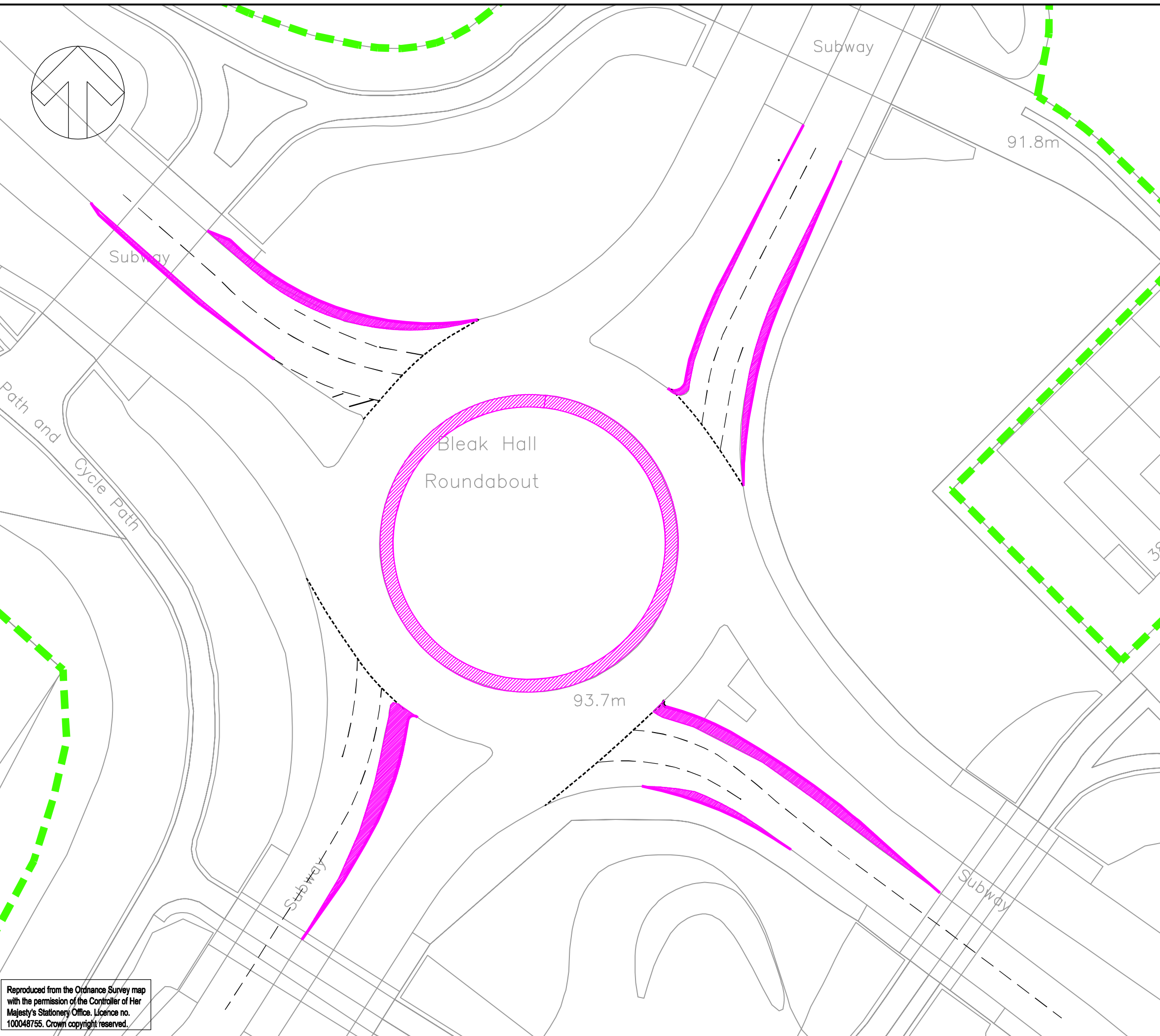
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<b>DRAWING No:</b> 70069442-011		<b>REV:</b> P02

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**DO NOT SCALE**

**KEY**

	Highway Boundary
	Kerb Amendments
	Carriageway Construction
	Footway Construction
	Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P03	25/01/2021	JS	UPDATED LAYOUT	SH	MJP
P02	22/01/2021	ST	UPDATED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

**DRAWING STATUS:** S2 - FOR INFORMATION



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**CLIENT:** South West Milton Keynes Consortium

**ARCHITECT:**

**PROJECT:** South West Milton Keynes

**TITLE:** Junction 15 Mitigation Bleak Hall Roundabout

**SCALE @ A3:** 1:500      **CHECKED:** JS      **APPROVED:** JS

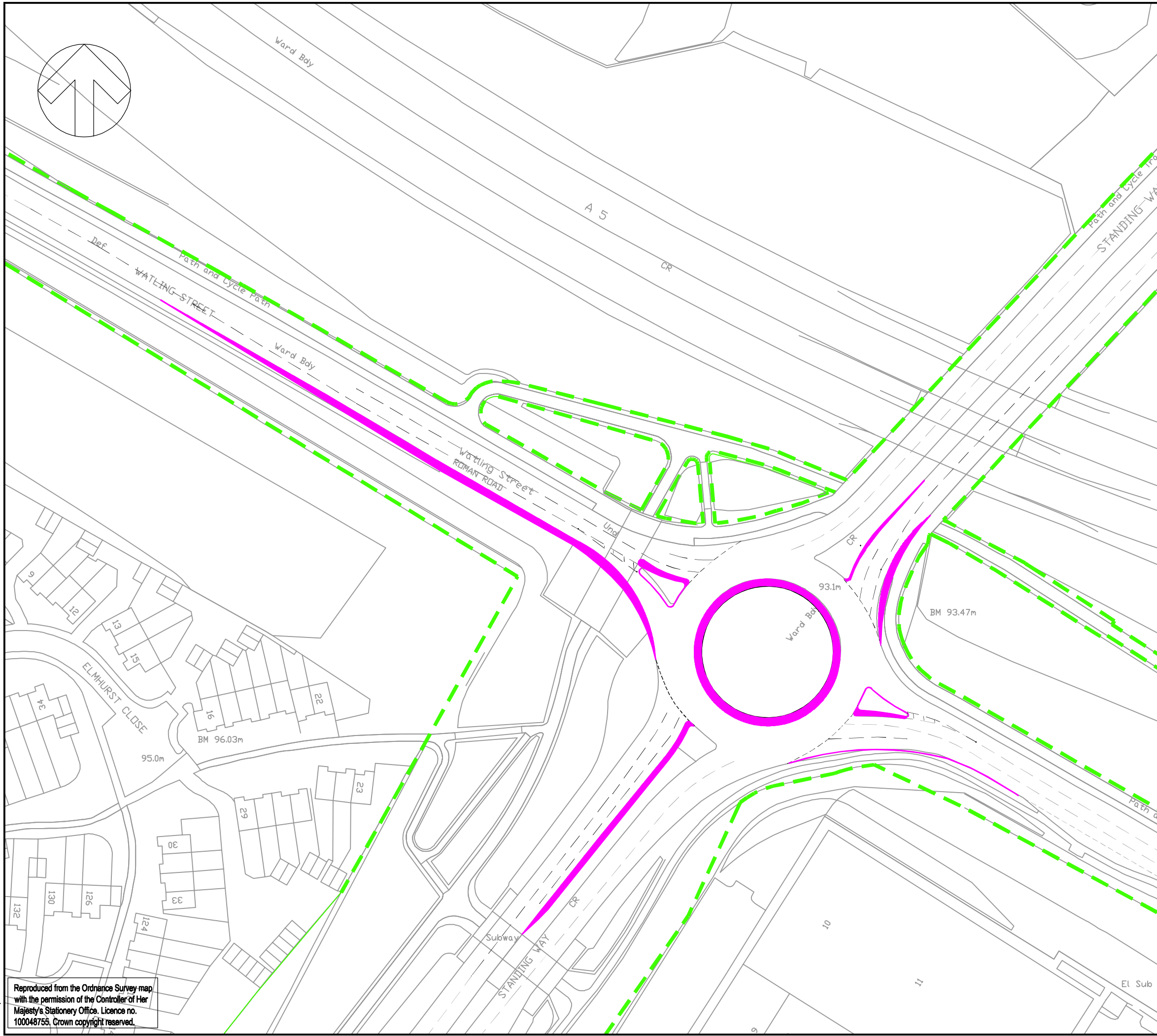
**PROJECT No:** 70069442      **DESIGNED:** JS      **DRAWN:** SET      **DATE:** January 2021

**DRAWING No:** 70069442-012      **REV:** P03

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**DO NOT SCALE**

**KEY**

	Highway Boundary
	Kerb Amendments
	Carriageway Construction
	Footway Construction
	Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P03	26/01/2021	JS	AMENDED LAYOUT	SH	MJP
P02	25/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

**DRAWING STATUS:** S2 - FOR INFORMATION



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**CLIENT:** South West Milton Keynes Consortium

**ARCHITECT:**

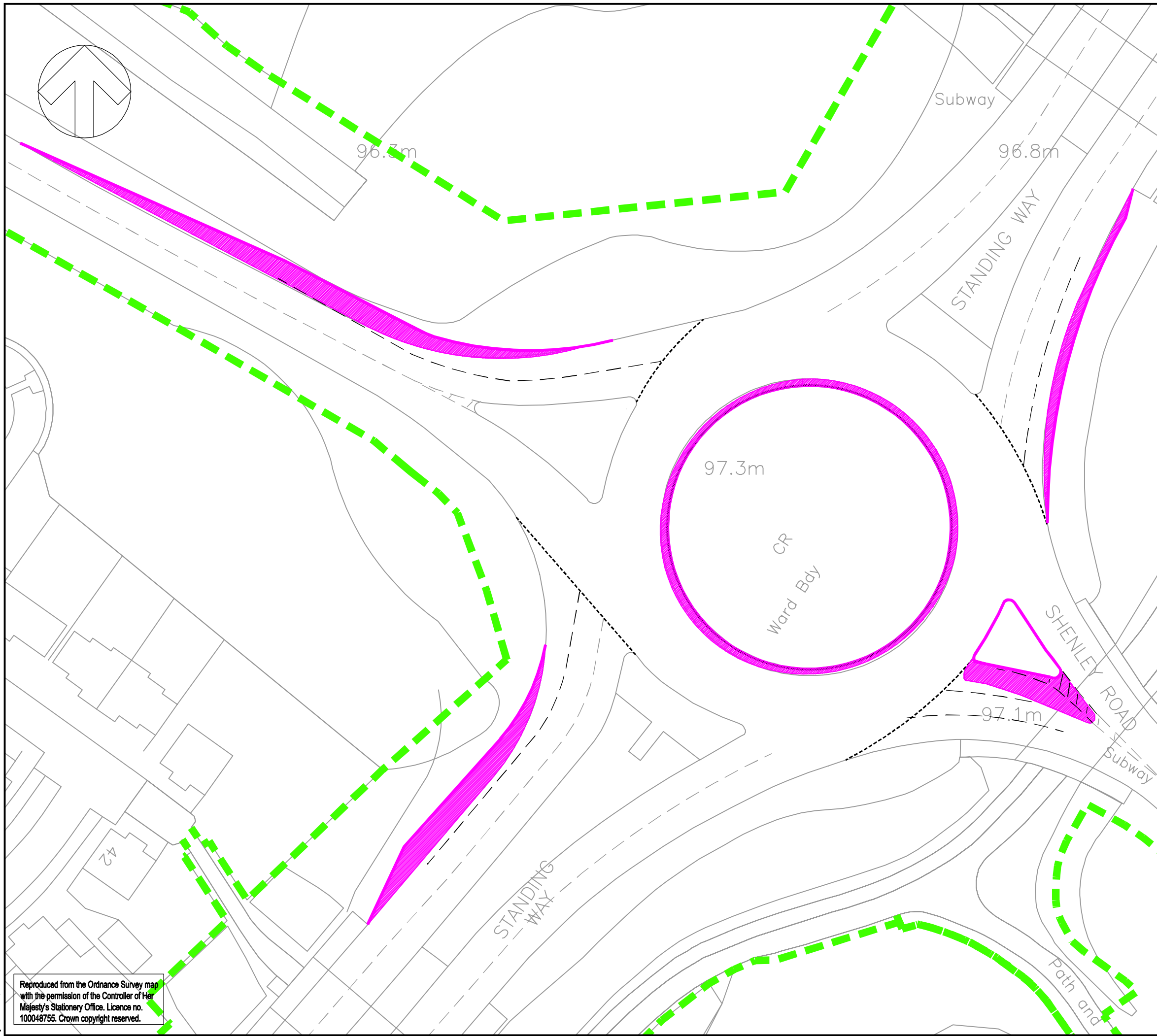
**PROJECT:** South West Milton Keynes

**TITLE:** Junction 16 Mitigation Elfield Park Roundabout

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<b>DRAWING No:</b> 70069442-016		<b>REV:</b> P03

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DO NOT SCALE

KEY	
	Highway Boundary
	Kerb Amendments
	Carriageway Construction
	Footway Construction
	Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	26/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

DRAWING STATUS: S2 - FOR INFORMATION



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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

PROJECT: South West Milton Keynes

TITLE: Junction 17 Mitigation Emerson Roundabout

SCALE @ A3: 1:500      CHECKED: JS      APPROVED: JS

PROJECT No: 70069442      DESIGNED: JS      DRAWN: SET      DATE: January 2021

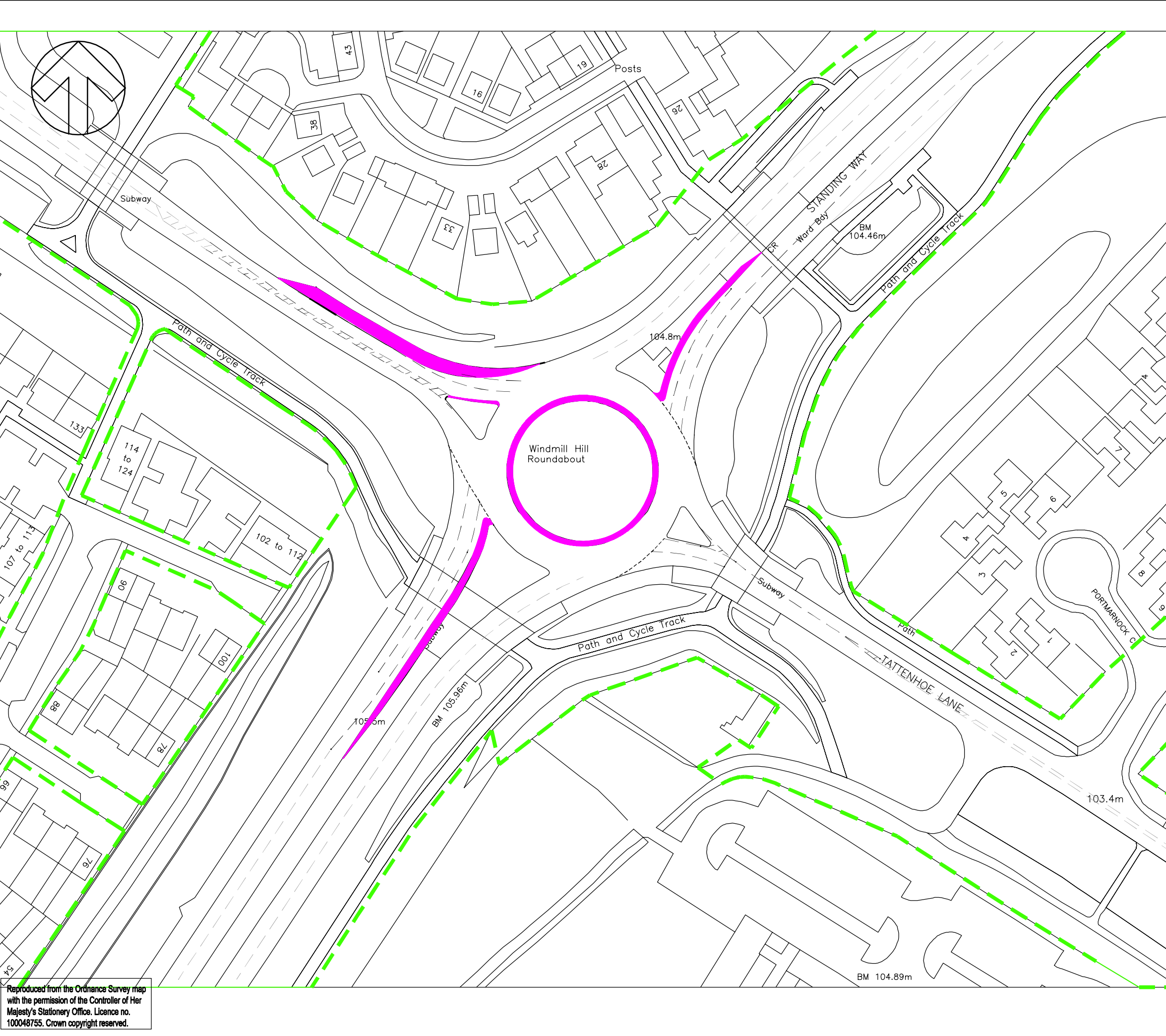
DRAWING No: 70069442-013      REV: P02

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**DO NOT SCALE**

**KEY**

	Highway Boundary
	Kerb Amendments
	Carriageway Construction
	Footway Construction
	Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	26/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

**DRAWING STATUS:** S2 - FOR INFORMATION



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**CLIENT:** South West Milton Keynes Consortium

**ARCHITECT:**

**PROJECT:** South West Milton Keynes

**TITLE:** Junction 18 Mitigation Windmill Hill Roundabout

<b>SCALE @ A3:</b> 1:1000	<b>CHECKED:</b> JS	<b>APPROVED:</b> JS
<b>PROJECT No:</b> 70069442	<b>DESIGNED:</b> JS	<b>DRAWN:</b> SET
<b>DRAWING No:</b> 70069442-014	<b>DATE:</b> January 2021	
		<b>REV:</b> P02

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# Appendix E

## MITIGATION JUNCTION CAPACITY ASSESSMENT RESULTS



<b>Junctions 9</b>
<b>ARCADY 9 - Roundabout Module</b>
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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**Filename:** J1- Post Calibration - Two lane Exits B4034 AM with taper\_V4.3.j9  
**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J1  
**Report generation date:** 28/01/2021 14:57:19

- »2033 Base + CD + D, AM
- »2033 Base + CD + D with TP, AM
- »2033 Base + CD + D - ST, AM

### Summary of junction performance

AM					
Set ID	Queue (Veh)	Delay (s)	RFC	LOS	
[Lane Simulation] - 2033 Base + CD + D					
A - Sherwood Drive	45.5	183.96		F	D15
B - B4034	33.9	101.65		F	
C - Water Eaton Road	15.9	109.84		F	
D - B4034 Buckingham Road	5.4	12.27		B	
[Lane Simulation] - 2033 Base + CD + D with TP					
A - Sherwood Drive	42.1	171.14		F	D17
B - B4034	30.0	89.36		F	
C - Water Eaton Road	15.5	108.75		F	
D - B4034 Buckingham Road	5.0	12.81		B	
[Lane Simulation] - 2033 Base + CD + D - ST					
A - Sherwood Drive	57.1	228.42		F	D21
B - B4034	41.0	119.15		F	
C - Water Eaton Road	18.1	123.88		F	
D - B4034 Buckingham Road	7.2	15.58		C	

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.*

### File summary

#### File Description

Title	Buckingham Road / Sherwood Drive / Water Eaton Road
Location	
Site number	1
Date	26/01/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
Description	

### Units

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

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓		✓	130212544	234	74.96

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D21	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

### Analysis Set Details

ID	Use Lane Simulation	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	✓	D15,D17,D21	100.000	100.000



# 2033 Base + CD + D, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	84.96	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Sherwood Drive	
B	B4034	
C	Water Eaton Road	
D	B4034 Buckingham Road	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Sherwood Drive	3.80	6.00	28.0	13.3	31.4	36.0	
B - B4034	6.00	6.40	0.5	13.6	31.4	29.0	
C - Water Eaton Road	3.50	7.00	52.9	10.8	31.4	33.0	
D - B4034 Buckingham Road	3.40	6.70	118.7	14.3	31.4	33.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Sherwood Drive	Direct		300
B - B4034	Direct		-400
C - Water Eaton Road	Direct		-450
D - B4034 Buckingham Road	Direct		420

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	0.623	1908
B - B4034	0.674	1416
C - Water Eaton Road	0.668	1385
D - B4034 Buckingham Road	0.686	2310

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

### Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
A - Sherwood Drive	Evenly split	10.00
B - B4034	Evenly split	10.00
C - Water Eaton Road	Evenly split	10.00
D - B4034 Buckingham Road	Evenly split	10.00

## Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Bottleneck capacity (PCU/hr)	Bottleneck type	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
A - Sherwood Drive	Entry	1	1	B	✓	4.00				0	99999	
			2	A, C, D	✓	4.00				0	99999	
		2	1	(A, B, C, D)		Infinity				0	99999	
	Exit	1	1			Infinity				0	99999	
B - B4034	Entry	1	1	C, D		Infinity				0	99999	
			2	A, B, D		Infinity				0	99999	
	Exit	1	1		✓	15.00				0	99999	
			2		✓	15.00				0	99999	
		2	1		✓	3.00	✓	1800	Random	0	99999	
		3	1			Infinity				0	99999	
C - Water Eaton Road	Entry	1	1	D	✓	10.00				0	99999	
			2	A, B, C	✓	10.00				0	99999	
		2	1	(A, B, C, D)		Infinity				0	99999	
	Exit	1	1			Infinity				0	99999	
D - B4034 Buckingham Road	Entry	1	1	A, B	✓	20.00				0	99999	
			2	B, C, D	✓	20.00				0	99999	
		2	1	(A, B, C, D)		Infinity				0	99999	
	Exit	1	1		✓	8.00				0	99999	
			2		✓	8.00				0	99999	
		2	1		✓	3.00	✓	1800	Random	0	99999	
3	1			Infinity				0	99999			

## Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	Entry	1	1	0.312	954
			2	0.312	954
B - B4034	Entry	1	1	0.337	708
			2	0.337	708
C - Water Eaton Road	Entry	1	1	0.334	692
			2	0.334	692
D - B4034 Buckingham Road	Entry	1	1	0.343	1155
			2	0.343	1155

## Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			Sherwood Drive	B4034	Water Eaton Road	B4034 Buckingham Road
A - Sherwood Drive	1	1		✓		
		2	✓		✓	✓
	2	1	✓	✓	✓	✓
B - B4034	1	1			✓	✓
		2	✓	✓		✓
C - Water Eaton Road	1	1				✓
		2	✓	✓	✓	
	2	1	✓	✓	✓	✓
D - B4034 Buckingham Road	1	1	✓	✓		
		2		✓	✓	✓
	2	1	✓	✓	✓	✓

## Traffic Demand

## Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	731	100.000
B - B4034		ONE HOUR	✓	983	100.000
C - Water Eaton Road		ONE HOUR	✓	430	100.000

D - B4034 Buckingham Road	ONE HOUR	✓	1361	100.000
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## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	505	122	105
	B - B4034	392	0	57	533
	C - Water Eaton Road	116	32	0	282
	D - B4034 Buckingham Road	154	984	221	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4
	C - Water Eaton Road	1	4	0	1
	D - B4034 Buckingham Road	0	2	1	0

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	183.96	45.5	F	672	1008
B - B4034	101.65	33.9	F	898	1348
C - Water Eaton Road	109.84	15.9	F	393	589
D - B4034 Buckingham Road	12.27	5.4	B	1254	1881

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	549	137	929	546	553	486	0.0	2.1	11.975	B
B - B4034	728	182	336	726	746	1142	0.0	2.8	13.515	B
C - Water Eaton Road	315	79	764	317	324	298	0.0	1.3	14.601	B
D - B4034 Buckingham Road	1018	254	399	1016	1029	682	0.0	1.7	5.511	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	657	164	1121	649	649	583	2.1	4.2	19.897	C
B - B4034	886	222	411	880	901	1364	2.8	5.5	21.491	C
C - Water Eaton Road	385	96	923	382	385	368	1.3	2.9	23.093	C
D - B4034 Buckingham Road	1229	307	480	1225	1236	826	1.7	2.6	6.946	A

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	814	203	1378	725	722	704	4.2	27.4	83.114	F
B - B4034	1081	270	467	1031	1039	1618	5.5	23.0	57.909	F
C - Water Eaton Road	470	117	1073	448	448	425	2.9	10.5	60.439	F
D - B4034 Buckingham Road	1523	381	566	1516	1516	953	2.6	5.4	11.237	B

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	804	201	1368	733	738	710	27.4	45.5	183.965	F



B - B4034	1080	270	473	1042	1066	1623	23.0	33.9	101.649	F
C - Water Eaton Road	476	119	1093	451	454	422	10.5	15.9	109.844	F
D - B4034 Buckingham Road	1508	377	578	1501	1523	967	5.4	5.4	12.271	B

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	657	164	1116	751	780	626	45.5	16.7	137.816	F
B - B4034	875	219	432	939	994	1446	33.9	11.4	75.004	F
C - Water Eaton Road	387	97	994	424	433	378	15.9	6.4	85.341	F
D - B4034 Buckingham Road	1227	307	514	1228	1260	906	5.4	2.6	7.859	A

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	551	138	924	558	614	510	16.7	2.8	30.026	D
B - B4034	738	185	338	745	797	1141	11.4	2.8	20.537	C
C - Water Eaton Road	323	81	779	324	351	304	6.4	1.6	26.405	D
D - B4034 Buckingham Road	1020	255	413	1021	1044	690	2.6	1.7	5.778	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

## 07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	377	651	0.580	376	381	0.0	1.3	11.575	B
			2	A, C, D	169	656	0.258	169	172	0.0	0.4	7.632	A
	Exit	1	1	(A, B, C, D)	549			546	560	0.0	0.4	1.604	A
			1		486			486	492	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	304	570	0.533	304	317	0.0	1.0	11.230	B
			2	A, B, D	424	583	0.728	422	429	0.0	1.8	15.164	C
	Exit	1	1		564			565	577	0.0	0.2	1.424	A
			2		574			575	573	0.0	0.2	1.436	A
		2	1		1140			1142	1146	0.0	1.1	4.089	A
			1		1142			1142	1146	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	204	427	0.477	206	212	0.0	0.9	16.116	C
			2	A, B, C	111	426	0.261	112	112	0.0	0.4	11.684	B
	Exit	1	1	(A, B, C, D)	315			315	330	0.0	0.0	0.002	A
			1		298			298	304	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	496	1002	0.494	495	500	0.0	0.8	5.431	A
			2	B, C, D	522	1002	0.521	521	529	0.0	0.9	5.587	A
		2	(A, B, C, D)	1018			1018	1036	0.0	0.0	0.000	A	
	Exit	1	1		342			342	353	0.0	0.0	0.221	A
			2		341			341	352	0.0	0.0	0.232	A
		2	1		682			682	702	0.0	0.6	3.127	A
3	1		682			682	702	0.0	0.0	0.000	A		

## 07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	447	592	0.755	446	450	1.3	2.0	15.747	C
			2	A, C, D	203	595	0.342	203	199	0.4	0.6	9.003	A
	Exit	1	1	(A, B, C, D)	657			651	652	0.4	1.6	6.176	A
			1		583			583	590	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	395	546	0.724	393	407	1.0	2.0	17.548	C
			2	A, B, D	491	558	0.881	487	493	1.8	3.5	24.670	C
	Exit	1	1		678			679	687	0.2	0.7	3.699	A
			2		681			684	685	0.2	0.7	3.737	A
		2	1		1363			1364	1370	1.1	1.7	4.681	A
			1		1364			1364	1370	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	253	373	0.680	250	251	0.9	2.2	26.936	D
			2	A, B, C	132	372	0.355	132	134	0.4	0.6	15.096	C
	Exit	1	1	(A, B, C, D)	385			385	391	0.0	0.0	0.212	A
			1		368			368	367	0.0	0.0	0.000	A
Entry	1	1	A, B	601	973	0.618	599	604	0.8	1.2	6.812	A	
		2	B, C, D	628	974	0.644	626	632	0.9	1.4	7.075	A	

D - B4034 Buckingham Road	Exit	2	1	(A, B, C, D)	1229			1229	1240	0.0	0.0	0.000	A
		1	1		410			409	419	0.0	0.1	0.491	A
	Exit	1	2		416			416	418	0.0	0.1	0.496	A
		2	1		826			826	836	0.6	0.8	3.468	A
		3	1		826			826	836	0.0	0.0	0.000	A

## 08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	507	512	0.990	506	502	2.0	3.6	23.555	C
			2	A, C, D	220	515	0.426	218	221	0.6	0.7	12.453	B
		2	1	(A, B, C, D)	814			726	729	1.6	23.1	62.656	F
	Exit	1	1		704			704	700	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	522	530	0.988	498	502	2.0	9.8	50.137	F
			2	A, B, D	559	541	1.034	533	537	3.5	13.1	64.961	F
	Exit	1	1		819			811	806	0.7	3.5	12.239	B
			2	1		817			808	809	0.7	3.6	12.181
		2	1		1619			1618	1611	1.7	2.5	5.385	A
		3	1		1618			1618	1611	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	300	323	0.929	294	289	2.2	6.0	58.208	F
			2	A, B, C	155	321	0.485	154	159	0.6	1.1	22.815	C
		2	1	(A, B, C, D)	470			455	466	0.0	3.4	13.312	B
	Exit	1	1		425			425	425	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	756	946	0.800	754	747	1.2	2.6	11.139	B
			2	B, C, D	766	946	0.810	763	769	1.4	2.8	11.326	B
		2	1	(A, B, C, D)	1523			1523	1527	0.0	0.0	0.003	A
	Exit	1	1		482			482	482	0.1	0.1	0.837	A
			2	1		473			472	480	0.1	0.1	0.847
		2	1		954			953	961	0.8	1.0	3.755	A
3	1		953			953	961	0.0	0.0	0.000	A		

## 08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	504	515	0.979	504	509	3.6	3.7	26.442	D
			2	A, C, D	230	519	0.444	229	230	0.7	0.9	13.977	B
		2	1	(A, B, C, D)	804			734	739	23.1	40.9	161.600	F
	Exit	1	1		710			710	713	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	526	527	0.997	505	523	9.8	15.2	91.984	F
			2	A, B, D	554	538	1.029	537	543	13.1	18.8	110.746	F
	Exit	1	1		809			808	819	3.5	3.5	15.121	C
			2	1		819			817	829	3.6	3.5	14.931
		2	1		1625			1623	1648	2.5	2.5	5.504	A
		3	1		1623			1623	1648	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	300	315	0.949	296	296	6.0	7.0	80.189	F
			2	A, B, C	156	314	0.497	155	158	1.1	1.2	26.919	D
		2	1	(A, B, C, D)	476			456	458	3.4	7.7	47.214	E
	Exit	1	1		422			422	433	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	747	942	0.793	744	753	2.6	2.6	12.083	B
			2	B, C, D	761	940	0.809	757	770	2.8	2.8	12.439	B
		2	1	(A, B, C, D)	1508			1508	1523	0.0	0.0	0.008	A
	Exit	1	1		492			493	498	0.1	0.1	0.819	A
			2	1		475			475	491	0.1	0.1	0.840
		2	1		967			967	988	1.0	1.1	3.751	A
3	1		967			967	988	0.0	0.0	0.000	A		

## 08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	513	592	0.867	517	538	3.7	2.9	22.519	C
			2	A, C, D	231	597	0.387	234	241	0.9	0.6	11.842	B
		2	1	(A, B, C, D)	657			745	775	40.9	13.3	119.245	F
	Exit	1	1		626			626	649	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	407	538	0.755	435	475	15.2	4.7	68.615	F
			2	A, B, D	468	553	0.848	504	519	18.8	6.7	80.743	F
	Exit	1	1		715			720	749	3.5	1.1	8.482	A
			2	1		719			723	756	3.5	1.2	8.415
		2	1		1444			1446	1507	2.5	2.0	5.190	A
		3	1		1446			1446	1507	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	268	350	0.766	282	284	7.0	3.7	66.782	F
			2	A, B, C	141	348	0.406	142	148	1.2	0.9	23.942	C

		2	1	(A, B, C, D)	387			408	419	7.7	1.8	35.599	E
	Exit	1	1		378			378	390	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	607	963	0.630	608	623	2.6	1.2	7.704	A
			2	B, C, D	620	961	0.644	620	637	2.8	1.4	8.010	A
		2	1	(A, B, C, D)	1227			1227	1249	0.0	0.0	0.000	A
	Exit	1	1		452			452	469	0.1	0.1	0.792	A
			2		452			452	472	0.1	0.1	0.789	A
		2	1		904			906	943	1.1	0.8	3.690	A
		3	1		906			906	943	0.0	0.0	0.000	A

## 08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	387	654	0.591	384	426	2.9	1.5	14.342	B
			2	A, C, D	173	657	0.263	174	187	0.6	0.4	8.720	A
		2	1	(A, B, C, D)	551			559	607	13.3	0.9	17.937	C
	Exit	1	1		510			510	524	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	312	570	0.547	315	348	4.7	0.9	17.888	C
			2	A, B, D	427	583	0.731	430	449	6.7	1.9	22.547	C
	Exit	1	1		569			569	605	1.1	0.3	2.353	A
			2		574			574	610	1.2	0.3	2.317	A
		2	1		1142			1141	1217	2.0	1.4	4.280	A
		3	1		1141			1141	1217	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	212	423	0.502	213	233	3.7	1.2	28.589	D
			2	A, B, C	112	420	0.267	112	118	0.9	0.4	13.972	B
		2	1	(A, B, C, D)	323			325	338	1.8	0.0	3.983	A
	Exit	1	1		304			304	320	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	496	997	0.498	496	508	1.2	0.8	5.741	A
			2	B, C, D	524	1000	0.524	525	536	1.4	0.8	5.812	A
		2	1	(A, B, C, D)	1020			1020	1040	0.0	0.0	0.000	A
	Exit	1	1		341			341	375	0.1	0.0	0.363	A
			2		348			348	379	0.1	0.0	0.347	A
		2	1		689			690	756	0.8	0.5	3.284	A
		3	1		690			690	756	0.0	0.0	0.000	A



# 2033 Base + CD + D with TP, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	79.34	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	727	100.000
B - B4034		ONE HOUR	✓	979	100.000
C - Water Eaton Road		ONE HOUR	✓	429	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	1345	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	505	122	101
	B - B4034	392	0	57	529
	C - Water Eaton Road	116	32	0	281
	D - B4034 Buckingham Road	149	974	220	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4
	C - Water Eaton Road	1	4	0	1
	D - B4034 Buckingham Road	0	2	1	0

## Results

## Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	171.14	42.1	F	670	1006
B - B4034	89.36	30.0	F	899	1348
C - Water Eaton Road	108.75	15.5	F	389	584
D - B4034 Buckingham Road	12.81	5.0	B	1229	1843

## Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	550	137	940	550	546	493	0.0	2.0	11.823	B
B - B4034	738	185	336	738	750	1148	0.0	2.6	13.292	B
C - Water Eaton Road	319	80	772	319	324	302	0.0	1.3	14.192	B
D - B4034 Buckingham Road	1030	257	405	1027	1024	685	0.0	1.7	5.466	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	661	165	1101	659	647	585	2.0	3.9	18.963	C
B - B4034	879	220	399	877	893	1370	2.6	5.6	21.388	C
C - Water Eaton Road	384	96	916	382	386	361	1.3	2.6	22.833	C
D - B4034 Buckingham Road	1204	301	483	1203	1222	816	1.7	2.2	6.578	A

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	809	202	1334	731	726	686	3.9	25.0	75.580	F
B - B4034	1071	268	474	1015	1032	1590	5.6	21.8	53.481	F
C - Water Eaton Road	471	118	1058	449	447	431	2.6	10.1	57.540	F
D - B4034 Buckingham Road	1466	367	558	1462	1482	953	2.2	5.0	10.512	B

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	797	199	1352	717	732	707	25.0	42.1	171.140	F
B - B4034	1078	269	464	1040	1073	1640	21.8	30.1	89.364	F
C - Water Eaton Road	466	116	1083	449	455	421	10.1	15.6	108.751	F
D - B4034 Buckingham Road	1472	368	574	1485	1505	956	5.0	4.4	12.808	B

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	658	165	1108	725	757	604	42.1	18.7	135.085	F
B - B4034	886	222	418	909	989	1420	30.1	8.5	55.037	F
C - Water Eaton Road	381	95	958	412	426	369	15.6	6.8	89.568	F
D - B4034 Buckingham Road	1203	301	505	1207	1233	865	4.4	2.0	7.463	A

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	548	137	921	562	617	500	18.7	2.9	34.736	D
B - B4034	742	186	347	741	782	1140	8.5	3.5	17.667	C
C - Water Eaton Road	315	79	776	318	345	312	6.8	1.3	23.649	C
D - B4034 Buckingham Road	998	249	418	1003	1025	674	2.0	1.3	5.550	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	550	137	940	550	546	493	0.0	2.0	11.823	B
B - B4034	738	185	336	738	750	1148	0.0	2.6	13.292	B
C - Water Eaton Road	319	80	772	319	324	302	0.0	1.3	14.192	B
D - B4034 Buckingham Road	1030	257	405	1027	1024	685	0.0	1.7	5.466	A

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	383	649	0.590	384	380	0.0	1.3	11.571	B
			2	A, C, D	165	652	0.253	165	166	0.0	0.3	7.374	A
		2	1	(A, B, C, D)	550			548	553	0.0	0.4	1.518	A
	Exit	1	1		493			493	493	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	307	572	0.537	308	316	0.0	0.9	10.960	B
			2	A, B, D	431	583	0.739	430	434	0.0	1.7	14.948	B
	Exit	1	1		573			572	571	0.0	0.3	1.560	A
			2		581			579	576	0.0	0.3	1.540	A
		2	1		1151			1148	1141	0.0	1.5	4.122	A
	3	1		1148			1148	1141	0.0	0.0	0.000	A	
C - Water Eaton Road	Entry	1	1	D	205	425	0.483	205	209	0.0	0.9	15.400	C
			2	A, B, C	114	421	0.270	114	115	0.0	0.4	11.974	B
	2	1	(A, B, C, D)	319			319	330	0.0	0.0	0.000	A	
	Exit	1	1		302			302	303	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	501	995	0.503	500	499	0.0	0.8	5.378	A
			2	B, C, D	529	999	0.530	528	525	0.0	0.9	5.550	A
		2	1	(A, B, C, D)	1030			1030	1030	0.0	0.0	0.000	A
	Exit	1	1		347			346	349	0.0	0.1	0.243	A
			2		340			339	350	0.0	0.0	0.244	A
		2	1		685			685	697	0.0	0.6	3.109	A
3	1		685			685	697	0.0	0.0	0.000	A		

## 07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	459	597	0.770	459	449	1.3	2.2	15.590	C
			2	A, C, D	200	603	0.331	200	197	0.3	0.5	8.885	A
		2	1	(A, B, C, D)	661			659	651	0.4	1.3	5.382	A
	Exit	1	1		585			585	585	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	396	550	0.720	396	400	0.9	1.9	17.327	C
			2	A, B, D	482	563	0.856	481	493	1.7	3.7	24.598	C
	Exit	1	1		679			682	681	0.3	0.7	3.431	A
			2		681			686	685	0.3	0.6	3.380	A
		2	1		1368			1370	1365	1.5	1.8	4.676	A
	3	1		1370			1370	1365	0.0	0.0	0.000	A	
C - Water Eaton Road	Entry	1	1	D	250	375	0.666	248	252	0.9	2.0	26.872	D
			2	A, B, C	133	373	0.356	134	134	0.4	0.6	14.347	B
	2	1	(A, B, C, D)	384			383	391	0.0	0.1	0.237	A	
	Exit	1	1		361			361	362	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	589	974	0.605	587	598	0.8	1.1	6.475	A
			2	B, C, D	615	973	0.632	616	623	0.9	1.1	6.677	A
		2	1	(A, B, C, D)	1204			1204	1223	0.0	0.0	0.000	A
	Exit	1	1		413			413	420	0.1	0.0	0.437	A
			2		401			401	411	0.0	0.1	0.463	A
		2	1		814			816	831	0.6	0.7	3.428	A
3	1		816			816	831	0.0	0.0	0.000	A		

## 08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	503	524	0.959	501	500	2.2	3.6	23.464	C
			2	A, C, D	230	529	0.435	230	226	0.5	0.9	12.666	B
		2	1	(A, B, C, D)	809			732	733	1.3	20.6	55.150	F
	Exit	1	1		686			686	690	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	523	528	0.991	496	499	1.9	9.4	45.842	E
			2	A, B, D	547	539	1.015	519	533	3.7	12.4	60.443	F
	Exit	1	1		797			798	799	0.7	2.4	10.266	B
			2		795			793	798	0.6	2.6	10.229	B
		2	1		1590			1590	1595	1.8	2.3	5.347	A
	3	1		1590			1590	1595	0.0	0.0	0.000	A	
C - Water Eaton Road	Entry	1	1	D	300	328	0.916	294	288	2.0	5.9	57.354	F
			2	A, B, C	158	325	0.487	155	159	0.6	1.1	21.517	C
	2	1	(A, B, C, D)	471			457	466	0.1	3.1	11.485	B	
	Exit	1	1		431			431	427	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	724	947	0.764	721	729	1.1	2.5	10.348	B
			2	B, C, D	743	949	0.783	741	753	1.1	2.4	10.671	B
	2	1	(A, B, C, D)	1466			1466	1494	0.0	0.0	0.000	A	
	Exit	1	1		470			471	481	0.0	0.1	0.817	A
2				479			480	476	0.1	0.1	0.814	A	



		2	1		950			953	956	0.7	0.8	3.720	A
		3	1		953			953	956	0.0	0.0	0.000	A

## 08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	502	520	0.965	502	510	3.6	3.7	26.026	D
			2	A, C, D	216	522	0.414	216	222	0.9	0.8	13.587	B
		2	1	(A, B, C, D)	797			718	733	20.6	37.6	149.105	F
	Exit	1	1		707			707	707	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	528	530	0.996	511	531	9.4	13.2	78.732	F
			2	A, B, D	549	542	1.014	529	542	12.4	16.9	99.496	F
		1	1		802			818	817	2.4	2.6	15.123	C
	Exit	2	1		803			818	822	2.6	2.7	15.073	C
		2	1		1636			1640	1639	2.3	2.2	5.498	A
		3	1		1640			1640	1639	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	297	319	0.928	295	297	5.9	7.0	81.200	F
			2	A, B, C	158	317	0.497	154	158	1.1	1.4	26.194	D
		2	1	(A, B, C, D)	466			454	460	3.1	7.2	45.520	E
	Exit	1	1		421			421	432	0.0	0.0	0.000	A
		1	1		421			421	432	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	720	943	0.763	726	738	2.5	2.2	12.735	B
			2	B, C, D	753	942	0.799	758	767	2.4	2.2	12.819	B
		2	1	(A, B, C, D)	1472			1472	1503	0.0	0.0	0.028	A
		1	1		475			475	491	0.1	0.1	0.925	A
	Exit	2	1		483			482	495	0.1	0.1	0.901	A
		2	1		958			956	985	0.8	1.1	3.764	A
		3	1		956			956	985	0.0	0.0	0.000	A
		3	1		956			956	985	0.0	0.0	0.000	A

## 08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	506	595	0.850	508	532	3.7	2.7	21.788	C
			2	A, C, D	218	599	0.363	217	226	0.8	0.8	11.825	B
		2	1	(A, B, C, D)	658			724	753	37.6	15.1	116.908	F
	Exit	1	1		604			604	644	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	407	542	0.751	414	467	13.2	3.4	48.502	E
			2	A, B, D	479	556	0.864	494	522	16.9	5.1	60.779	F
		1	1		702			704	732	2.6	1.1	6.623	A
	Exit	2	1		712			715	738	2.7	1.1	6.520	A
		2	1		1419			1420	1470	2.2	2.0	5.000	A
		3	1		1420			1420	1470	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	260	361	0.722	273	283	7.0	3.7	68.865	F
			2	A, B, C	141	358	0.392	139	143	1.4	0.8	22.040	C
		2	1	(A, B, C, D)	381			401	410	7.2	2.3	38.785	E
	Exit	1	1		369			369	382	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	585	965	0.606	588	604	2.2	0.9	7.273	A
			2	B, C, D	617	965	0.640	619	629	2.2	1.1	7.652	A
		2	1	(A, B, C, D)	1203			1203	1223	0.0	0.0	0.000	A
		1	1		431			431	459	0.1	0.1	0.673	A
	Exit	2	1		434			433	463	0.1	0.1	0.684	A
		2	1		865			865	923	1.1	0.8	3.645	A
		3	1		865			865	923	0.0	0.0	0.000	A
		3	1		865			865	923	0.0	0.0	0.000	A

## 08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	390	656	0.594	388	430	2.7	1.5	14.673	B
			2	A, C, D	172	658	0.262	174	187	0.8	0.4	8.380	A
		2	1	(A, B, C, D)	548			562	610	15.1	1.0	22.564	C
	Exit	1	1		500			500	511	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	314	567	0.553	312	336	3.4	1.2	14.787	B
			2	A, B, D	429	578	0.742	429	445	5.1	2.2	19.801	C
		1	1		571			572	604	1.1	0.2	2.297	A
	Exit	2	1		564			566	605	1.1	0.2	2.297	A
		2	1		1138			1140	1212	2.0	1.2	4.375	A
		3	1		1140			1140	1212	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	202	423	0.478	204	225	3.7	1.0	25.898	D
			2	A, B, C	113	420	0.269	114	120	0.8	0.3	13.783	B
		2	1	(A, B, C, D)	315			315	332	2.3	0.0	3.481	A
	Exit	1	1		312			312	321	0.0	0.0	0.000	A
		1	1	A, B	485	994	0.488	487	497	0.9	0.6	5.437	A

D - B4034 Buckingham Road	Entry		2	B, C, D	513	994	0.516	515	528	1.1	0.7	5.657	A
		2	1	(A, B, C, D)	998			998	1023	0.0	0.0	0.000	A
	Exit	1	1		349			348	369	0.1	0.1	0.333	A
			2		327			327	367	0.1	0.1	0.343	A
		2	1		675			674	737	0.8	0.6	3.240	A
		3	1		674			674	737	0.0	0.0	0.000	A

# 2033 Base + CD + D - ST, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	101.00	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D21	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	738	100.000
B - B4034		ONE HOUR	✓	1002	100.000
C - Water Eaton Road		ONE HOUR	✓	434	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	1424	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	505	122	112
	B - B4034	392	0	57	552
	C - Water Eaton Road	116	32	0	286
	D - B4034 Buckingham Road	167	1030	225	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4
	C - Water Eaton Road	1	4	0	1
	D - B4034 Buckingham Road	0	2	1	0

## Results



## Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	228.42	57.1	F	677	1016
B - B4034	119.15	41.0	F	919	1378
C - Water Eaton Road	123.88	18.1	F	398	597
D - B4034 Buckingham Road	15.58	7.2	C	1310	1965

## Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	557	139	975	555	557	508	0.0	2.0	12.206	B
B - B4034	750	187	349	753	765	1181	0.0	2.9	14.290	B
C - Water Eaton Road	325	81	796	326	326	305	0.0	1.5	15.678	C
D - B4034 Buckingham Road	1078	270	406	1077	1081	717	0.0	1.8	5.699	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	662	165	1161	664	657	604	2.0	4.8	23.685	C
B - B4034	896	224	421	895	912	1406	2.9	6.5	23.276	C
C - Water Eaton Road	390	98	948	388	388	368	1.5	3.1	25.494	D
D - B4034 Buckingham Road	1283	321	481	1284	1297	855	1.8	2.7	7.417	A

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	813	203	1418	706	715	713	4.8	30.9	94.135	F
B - B4034	1104	276	474	1042	1049	1637	6.5	26.8	64.668	F
C - Water Eaton Road	477	119	1091	448	449	425	3.1	11.8	66.819	F
D - B4034 Buckingham Road	1573	393	563	1567	1573	976	2.7	6.4	13.081	B

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	811	203	1420	714	713	719	30.9	56.9	228.417	F
B - B4034	1104	276	478	1049	1079	1645	26.8	41.0	119.150	F
C - Water Eaton Road	479	120	1101	453	457	426	11.8	18.1	123.882	F
D - B4034 Buckingham Road	1572	393	569	1570	1588	985	6.4	7.2	15.583	C

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	662	166	1160	776	784	642	56.9	29.2	198.644	F
B - B4034	905	226	452	966	1028	1490	41.0	16.6	92.813	F
C - Water Eaton Road	388	97	1029	423	432	388	18.1	9.0	108.384	F
D - B4034 Buckingham Road	1276	319	525	1277	1315	927	7.2	2.8	8.714	A

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	558	140	977	596	666	517	29.2	3.6	56.042	F
B - B4034	755	189	357	766	832	1218	16.6	3.3	26.754	D
C - Water Eaton Road	329	82	812	340	360	311	9.0	1.8	34.229	D
D - B4034 Buckingham Road	1076	269	417	1077	1093	736	2.8	1.7	5.999	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	557	139	975	555	557	508	0.0	2.0	12.206	B
B - B4034	750	187	349	753	765	1181	0.0	2.9	14.290	B
C - Water Eaton Road	325	81	796	326	326	305	0.0	1.5	15.678	C
D - B4034 Buckingham Road	1078	270	406	1077	1081	717	0.0	1.8	5.699	A

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	381	638	0.597	380	382	0.0	1.3	11.865	B
			2	A, C, D	175	643	0.272	175	175	0.0	0.4	7.818	A
		2	1	(A, B, C, D)	557			556	564	0.0	0.3	1.598	A
	Exit	1	1		508			508	507	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	320	566	0.564	321	329	0.0	1.0	11.774	B
			2	A, B, D	430	578	0.745	432	437	0.0	1.9	16.138	C
	Exit	1	1		588			588	593	0.0	0.3	1.788	A
			2		593			593	595	0.0	0.3	1.789	A
		2	1		1181			1181	1182	0.0	1.4	4.181	A
		3	1		1181			1181	1182	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	215	416	0.516	215	214	0.0	1.1	17.710	C
			2	A, B, C	111	413	0.267	111	113	0.0	0.4	11.723	B
		2	1	(A, B, C, D)	325			325	333	0.0	0.0	0.015	A
	Exit	1	1		305			305	307	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	531	1001	0.530	530	530	0.0	0.9	5.617	A
			2	B, C, D	547	1001	0.547	547	551	0.0	0.9	5.778	A
		2	1	(A, B, C, D)	1078			1078	1088	0.0	0.0	0.000	A
	Exit	1	1		359			359	363	0.0	0.0	0.281	A
			2		356			357	362	0.0	0.0	0.270	A
		2	1		716			717	722	0.0	0.6	3.208	A
3	1		717			717	722	0.0	0.0	0.000	A		

## 07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	453	580	0.781	454	449	1.3	2.2	16.921	C
			2	A, C, D	211	583	0.362	210	208	0.4	0.6	9.769	A
		2	1	(A, B, C, D)	662			664	661	0.3	2.0	8.953	A
	Exit	1	1		604			604	602	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	405	542	0.745	405	415	1.0	2.4	19.061	C
			2	A, B, D	492	555	0.885	490	497	1.9	4.1	26.702	D
	Exit	1	1		704			704	707	0.3	1.0	4.632	A
			2		701			701	708	0.3	1.0	4.618	A
		2	1		1405			1406	1414	1.4	1.9	4.812	A
		3	1		1406			1406	1414	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	256	365	0.703	256	254	1.1	2.3	29.614	D
			2	A, B, C	133	363	0.366	132	134	0.4	0.6	15.386	C
		2	1	(A, B, C, D)	390			389	394	0.0	0.2	0.638	A
	Exit	1	1		368			368	367	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	632	974	0.649	632	638	0.9	1.3	7.320	A
			2	B, C, D	651	974	0.668	652	658	0.9	1.4	7.511	A
		2	1	(A, B, C, D)	1283			1283	1301	0.0	0.0	0.000	A
	Exit	1	1		426			426	432	0.0	0.0	0.499	A
			2		428			428	432	0.0	0.0	0.505	A
		2	1		855			855	862	0.6	0.8	3.478	A
3	1		855			855	862	0.0	0.0	0.000	A		

## 08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	484	499	0.969	483	488	2.2	3.7	24.903	C
			2	A, C, D	223	502	0.445	224	227	0.6	0.9	13.692	B
		2	1	(A, B, C, D)	813			707	722	2.0	26.3	72.414	F
	Exit	1	1		713			713	709	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	535	526	1.017	505	508	2.4	11.9	57.614	F
			2	A, B, D	569	538	1.057	537	541	4.1	14.9	71.126	F
	Exit	1	1		822			815	822	1.0	4.1	14.390	B
			2		829			822	820	1.0	4.2	14.417	B
		2	1		1637			1637	1639	1.9	2.5	5.495	A
		3	1		1637			1637	1639	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	300	316	0.948	294	292	2.3	6.5	63.856	F
			2	A, B, C	156	314	0.496	154	157	0.6	1.2	23.185	C
		2	1	(A, B, C, D)	477			456	468	0.2	4.1	15.500	C
	Exit	1	1		425			425	424	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	783	946	0.827	781	782	1.3	3.1	12.882	B
			2	B, C, D	789	946	0.835	786	791	1.4	3.3	13.239	B
		2	1	(A, B, C, D)	1573			1573	1588	0.0	0.0	0.014	A
	Exit	1	1		485			485	494	0.0	0.1	0.856	A
			2		491			491	491	0.0	0.1	0.867	A

		2	1		975			976	984	0.8	1.0	3.751	A
		3	1		976			976	984	0.0	0.0	0.000	A

## 08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	487	499	0.977	487	488	3.7	3.7	27.706	D
			2	A, C, D	226	502	0.450	227	226	0.9	0.9	14.885	B
	Exit	1	1	(A, B, C, D)	811			713	714	26.3	52.3	205.234	F
B - B4034	Entry	1	1	C, D	542	524	1.033	514	535	11.9	18.7	109.119	F
			2	A, B, D	562	537	1.048	535	544	14.9	22.3	128.775	F
	Exit	1	1		829			824	839	4.1	4.3	17.931	C
			2		826			822	836	4.2	4.3	18.012	C
		2	1		1646			1645	1675	2.5	2.6	5.592	A
	C - Water Eaton Road	Entry	1	1	D	303	313	0.967	298	299	6.5	7.6	85.956
2				A, B, C	157	311	0.505	155	158	1.2	1.3	27.741	D
Exit		1	1	(A, B, C, D)	479			460	462	4.1	9.2	56.967	F
D - B4034 Buckingham Road	Entry	1	1	A, B	779	944	0.825	777	789	3.1	3.5	15.283	C
			2	B, C, D	794	944	0.840	792	799	3.3	3.7	15.644	C
	Exit	1	1	(A, B, C, D)	1572			1573	1591	0.0	0.0	0.119	A
			2		496			496	505	0.1	0.1	0.983	A
		2	1		489			489	504	0.1	0.1	0.993	A
	Exit	2	1		985			985	1009	1.0	1.1	3.828	A
3			1		985			985	1009	0.0	0.0	0.000	A

## 08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	530	580	0.913	532	536	3.7	3.1	23.577	C
			2	A, C, D	244	584	0.417	244	248	0.9	0.8	13.082	B
	Exit	1	1	(A, B, C, D)	662			773	781	52.3	25.2	179.075	F
B - B4034	Entry	1	1	C, D	426	533	0.800	453	498	18.7	7.0	85.299	F
			2	A, B, D	479	546	0.878	512	530	22.3	9.5	99.721	F
	Exit	1	1		740			742	772	4.3	1.5	10.053	B
			2		745			748	772	4.3	1.4	10.034	B
		2	1		1490			1490	1547	2.6	2.1	5.221	A
	C - Water Eaton Road	Entry	1	1	D	269	337	0.796	281	287	7.6	4.6	75.786
2				A, B, C	140	336	0.419	142	145	1.3	0.8	24.074	C
Exit		1	1	(A, B, C, D)	388			409	418	9.2	3.7	52.262	F
D - B4034 Buckingham Road	Entry	1	1	A, B	630	959	0.657	630	649	3.5	1.3	8.588	A
			2	B, C, D	646	959	0.674	647	665	3.7	1.4	8.843	A
	Exit	1	1	(A, B, C, D)	1276			1276	1297	0.0	0.0	0.003	A
			2		463			462	486	0.1	0.1	0.883	A
		2	1		465			464	489	0.1	0.1	0.873	A
	Exit	2	1		927			927	975	1.1	1.0	3.760	A
3			1		927			927	975	0.0	0.0	0.000	A

## 08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	406	636	0.638	410	459	3.1	1.4	16.674	C
			2	A, C, D	185	641	0.288	186	207	0.8	0.3	9.469	A
	Exit	1	1	(A, B, C, D)	558			591	657	25.2	1.8	42.348	E
B - B4034	Entry	1	1	C, D	326	564	0.577	330	370	7.0	1.2	23.699	C
			2	A, B, D	430	575	0.747	436	462	9.5	2.2	29.151	D
	Exit	1	1		608			608	641	1.5	0.4	3.257	A
			2		608			609	646	1.4	0.4	3.224	A
		2	1		1217			1218	1289	2.1	1.4	4.501	A
	C - Water Eaton Road	Entry	1	1	D	220	411	0.535	224	240	4.6	1.3	33.971
2				A, B, C	114	407	0.281	116	120	0.8	0.4	15.083	C
Exit		1	1	(A, B, C, D)	329			334	345	3.7	0.1	8.937	A
Exit	1	1		311			311	329	0.0	0.0	0.000	A	
		1	1	A, B	524	996	0.526	525	535	1.3	0.8	5.937	A

D - B4034 Buckingham Road	Entry		2	B, C, D	552	996	0.554	552	558	1.4	0.9	6.058	A
		2	1	(A, B, C, D)	1076			1076	1089	0.0	0.0	0.000	A
	Exit	1	1		365			365	399	0.1	0.0	0.453	A
			2		370			370	400	0.1	0.0	0.446	A
		2	1		735			736	801	1.0	0.6	3.382	A
		3	1		736			736	801	0.0	0.0	0.000	A



<b>Junctions 9</b>
<b>ARCADY 9 - Roundabout Module</b>
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**Filename:** J1- Post Calibration - Two lane Exits B4034 PM with taper\_V4.3.j9  
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**Report generation date:** 28/01/2021 14:44:43

- »2033 Base + CD + D, PM
- »2033 Base + CD + D with TP, PM
- »2033 Base + CD + D - ST, PM

### Summary of junction performance

PM					
Set ID	Queue (Veh)	Delay (s)	RFC	LOS	
[Lane Simulation] - 2033 Base + CD + D					
A - Sherwood Drive	30.5	114.95		F	D16
B - B4034	86.6	159.70		F	
C - Water Eaton Road	58.6	489.88		F	
D - B4034 Buckingham Road	5.3	19.39		C	
[Lane Simulation] - 2033 Base + CD + D with TP					
A - Sherwood Drive	27.0	105.09		F	D18
B - B4034	74.2	137.83		F	
C - Water Eaton Road	54.4	457.11		F	
D - B4034 Buckingham Road	5.5	19.50		C	
[Lane Simulation] - 2033 Base + CD + D - ST					
A - Sherwood Drive	35.8	131.83		F	D22
B - B4034	107.3	210.46		F	
C - Water Eaton Road	68.7	587.73		F	
D - B4034 Buckingham Road	6.0	22.11		C	

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.*

### File summary

#### File Description

Title	Buckingham Road / Sherwood Drive / Water Eaton Road
Location	
Site number	1
Date	26/01/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
Description	

### Units

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

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓		✓	2022832942	428	145.65

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D22	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

### Analysis Set Details

ID	Use Lane Simulation	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	✓	D16,D18,D22	100.000	100.000

# 2033 Base + CD + D, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	156.68	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Sherwood Drive	
B	B4034	
C	Water Eaton Road	
D	B4034 Buckingham Road	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Sherwood Drive	3.80	6.00	28.0	13.3	31.4	36.0	
B - B4034	6.00	6.40	0.5	13.6	31.4	29.0	
C - Water Eaton Road	3.50	7.00	52.9	10.8	31.4	33.0	
D - B4034 Buckingham Road	3.40	6.70	118.7	14.3	31.4	33.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Sherwood Drive	Direct		50
B - B4034	Direct		150
C - Water Eaton Road	Direct		-150
D - B4034 Buckingham Road	Direct		-175

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	0.623	1658
B - B4034	0.674	1966
C - Water Eaton Road	0.668	1685
D - B4034 Buckingham Road	0.686	1715

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

### Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
A - Sherwood Drive	Evenly split	10.00
B - B4034	Evenly split	10.00
C - Water Eaton Road	Evenly split	10.00
D - B4034 Buckingham Road	Evenly split	10.00

## Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Bottleneck capacity (PCU/hr)	Bottleneck type	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
A - Sherwood Drive	Entry	1	1	B	✓	4.00				0	99999	
			2	A, C, D	✓	4.00				0	99999	
		2	1	(A, B, C, D)		Infinity				0	99999	
	Exit	1	1			Infinity				0	99999	
B - B4034	Entry	1	1	C, D		Infinity				0	99999	
			2	A, B, D		Infinity				0	99999	
	Exit	1	1		✓	15.00				0	99999	
			2		✓	15.00				0	99999	
		2	1		✓	3.00	✓	1800	Random	0	99999	
		3	1			Infinity				0	99999	
C - Water Eaton Road	Entry	1	1	D	✓	10.00				0	99999	
			2	A, B, C	✓	10.00				0	99999	
		2	1	(A, B, C, D)		Infinity				0	99999	
	Exit	1	1			Infinity				0	99999	
D - B4034 Buckingham Road	Entry	1	1	A, B	✓	20.00				0	99999	
			2	B, C, D	✓	20.00				0	99999	
		2	1	(A, B, C, D)		Infinity				0	99999	
	Exit	1	1		✓	8.00				0	99999	
			2		✓	8.00				0	99999	
		2	1		✓	3.00	✓	1800	Random	0	99999	
3	1			Infinity				0	99999			

## Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	Entry	1	1	0.312	829
			2	0.312	829
B - B4034	Entry	1	1	0.337	983
			2	0.337	983
C - Water Eaton Road	Entry	1	1	0.334	842
			2	0.334	842
D - B4034 Buckingham Road	Entry	1	1	0.343	858
			2	0.343	858

## Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			Sherwood Drive	B4034	Water Eaton Road	B4034 Buckingham Road
A - Sherwood Drive	1	1		✓		
		2	✓		✓	✓
	2	1	✓	✓	✓	✓
B - B4034	1	1			✓	✓
		2	✓	✓		✓
C - Water Eaton Road	1	1				✓
		2	✓	✓	✓	
	2	1	✓	✓	✓	✓
D - B4034 Buckingham Road	1	1	✓	✓		
		2		✓	✓	✓
	2	1	✓	✓	✓	✓

## Traffic Demand

## Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	771	100.000
B - B4034		ONE HOUR	✓	1552	100.000
C - Water Eaton Road		ONE HOUR	✓	464	100.000



D - B4034 Buckingham Road	ONE HOUR	✓	912	100.000
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## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	462	133	177
	B - B4034	502	1	17	1032
	C - Water Eaton Road	104	68	0	292
	D - B4034 Buckingham Road	121	582	206	3

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0
	D - B4034 Buckingham Road	0	3	0	0

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	114.95	30.5	F	711	1066
B - B4034	159.70	86.6	F	1422	2133
C - Water Eaton Road	489.88	58.6	F	428	642
D - B4034 Buckingham Road	19.39	5.3	C	839	1258

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	589	147	653	587	580	542	0.0	2.2	12.162	B
B - B4034	1166	292	398	1163	1174	842	0.0	3.5	9.997	A
C - Water Eaton Road	348	87	1286	348	343	275	0.0	1.6	16.324	C
D - B4034 Buckingham Road	691	173	504	691	693	1130	0.0	1.5	8.314	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	694	174	769	697	687	656	2.2	3.9	19.747	C
B - B4034	1388	347	470	1385	1390	998	3.5	7.3	17.176	C
C - Water Eaton Road	414	103	1532	407	400	323	1.6	4.8	33.738	D
D - B4034 Buckingham Road	818	204	607	819	829	1332	1.5	2.6	11.134	B

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	853	213	937	807	791	723	3.9	19.5	59.789	F
B - B4034	1711	428	556	1551	1566	1190	7.3	48.2	67.603	F
C - Water Eaton Road	518	130	1722	403	415	385	4.8	29.0	152.010	F
D - B4034 Buckingham Road	1003	251	653	1008	1003	1475	2.6	5.3	18.772	C

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	844	211	933	808	808	728	19.5	30.5	114.954	F

B - B4034	1699	425	553	1557	1574	1187	48.2	86.6	159.696	F
C - Water Eaton Road	506	127	1730	405	408	380	29.0	53.8	383.837	F
D - B4034 Buckingham Road	1005	251	653	1008	1027	1476	5.3	5.2	19.389	C

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	694	174	775	748	787	704	30.5	8.5	75.994	F
B - B4034	1388	347	490	1552	1584	1035	86.6	43.6	148.412	F
C - Water Eaton Road	426	106	1708	407	403	333	53.8	58.6	489.884	F
D - B4034 Buckingham Road	824	206	655	825	851	1464	5.2	2.6	12.733	B

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	591	148	675	594	614	597	8.5	2.0	17.984	C
B - B4034	1181	295	399	1220	1343	871	43.6	4.8	39.712	E
C - Water Eaton Road	354	88	1345	518	485	274	58.6	24.9	271.816	F
D - B4034 Buckingham Road	693	173	580	693	706	1288	2.6	1.8	9.524	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

## 16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	352	618	0.569	352	349	0.0	1.2	11.856	B
			2	A, C, D	236	621	0.380	235	231	0.0	0.7	9.102	A
	Exit	1	1	(A, B, C, D)	589			588	587	0.0	0.3	1.387	A
			1	1		542			542	542	0.0	0.0	0.000
B - B4034	Entry	1	1	C, D	518	837	0.620	516	524	0.0	1.4	8.738	A
			2	A, B, D	648	841	0.771	647	650	0.0	2.1	11.005	B
	Exit	1	1		418			418	422	0.0	0.0	0.440	A
			2		424			424	424	0.0	0.0	0.436	A
		2	1		842			842	843	0.0	0.8	3.392	A
			3	1		842			842	843	0.0	0.0	0.000
C - Water Eaton Road	Entry	1	1	D	218	409	0.534	219	216	0.0	1.2	18.341	C
			2	A, B, C	129	409	0.317	129	127	0.0	0.5	12.873	B
	Exit	1	1	(A, B, C, D)	348			348	350	0.0	0.0	0.002	A
			1	1		275			275	268	0.0	0.0	0.000
D - B4034 Buckingham Road	Entry	1	1	A, B	325	671	0.484	325	329	0.0	0.7	7.945	A
			2	B, C, D	366	673	0.544	366	364	0.0	0.8	8.645	A
		2	1	(A, B, C, D)	691			691	699	0.0	0.0	0.000	A
	Exit	1	1		569			569	566	0.0	0.2	1.337	A
			2		560			560	566	0.0	0.2	1.343	A
		2	1		1130			1130	1127	0.0	1.2	4.016	A
		3	1		1130			1130	1127	0.0	0.0	0.000	A

## 17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	414	581	0.713	415	410	1.2	1.9	15.786	C
			2	A, C, D	282	584	0.483	282	278	0.7	0.8	11.248	B
	Exit	1	1	(A, B, C, D)	694			697	691	0.3	1.2	5.762	A
			1	1		656			656	648	0.0	0.0	0.000
B - B4034	Entry	1	1	C, D	652	813	0.802	650	650	1.4	3.1	15.313	C
			2	A, B, D	735	816	0.901	735	740	2.1	4.2	18.803	C
	Exit	1	1		497			497	504	0.0	0.1	0.844	A
			2		500			501	500	0.0	0.1	0.840	A
		2	1		998			998	1003	0.8	1.0	3.727	A
			3	1		998			998	1003	0.0	0.0	0.000
C - Water Eaton Road	Entry	1	1	D	259	325	0.795	255	248	1.2	3.4	39.305	E
			2	A, B, C	152	325	0.466	152	152	0.5	0.9	19.261	C
	Exit	1	1	(A, B, C, D)	414			410	411	0.0	0.5	1.653	A
			1	1		323			323	319	0.0	0.0	0.000
Entry	1	1	A, B	392	636	0.616	393	398	0.7	1.2	10.677	B	
		2	B, C, D	426	638	0.668	426	431	0.8	1.4	11.553	B	

D - B4034 Buckingham Road	2	1	(A, B, C, D)	818			818	833	0.0	0.0	0.000	A	
		1		666			667	669	0.2	0.6	2.975	A	
	Exit	1	2		666			665	663	0.2	0.6	3.027	A
			2	1		1332			1332	1330	1.2	1.7	4.549
	3	1		1332			1332	1330	0.0	0.0	0.000	A	

## 17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	480	529	0.908	479	473	1.9	3.1	21.580	C	
			2	A, C, D	327	532	0.616	327	318	0.8	1.4	15.932	C	
		2	1	(A, B, C, D)	853			808	798	1.2	15.0	40.308	E	
	Exit	1	1		723			723	728	0.0	0.0	0.000	A	
B - B4034	Entry	1	1	C, D	848	784	1.082	769	774	3.1	23.2	64.533	F	
			2	A, B, D	863	788	1.095	782	792	4.2	25.0	70.590	F	
	Exit	1	1		592			592	591	0.1	0.3	1.694	A	
			2	1		596			595	591	0.1	0.3	1.686	A
		2	1		1188			1190	1181	1.0	1.3	4.191	A	
	3	1		1190			1190	1181	0.0	0.0	0.000	A		
C - Water Eaton Road	Entry	1	1	D	263	261	1.008	250	256	3.4	9.2	100.115	F	
			2	A, B, C	151	261	0.576	152	159	0.9	1.9	39.278	E	
	Exit	1	1	(A, B, C, D)	518			414	442	0.5	17.9	70.444	F	
			1	1		385			385	377	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	492	622	0.791	494	491	1.2	2.5	18.006	C	
			2	B, C, D	511	625	0.818	514	512	1.4	2.8	19.474	C	
	Exit	1	1	(A, B, C, D)	1003			1003	1014	0.0	0.0	0.015	A	
			2	1		737			738	739	0.6	1.3	5.772	A
	3	1	2	1		735			736	742	0.6	1.3	5.754	A
			2	1		1474			1475	1479	1.7	2.0	5.011	A
3	1		1475			1475	1479	0.0	0.0	0.000	A			

## 17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	485	530	0.915	485	486	3.1	3.2	24.017	C	
			2	A, C, D	323	533	0.606	323	321	1.4	1.5	17.287	C	
	Exit	1	1	(A, B, C, D)	844			807	808	15.0	25.8	93.629	F	
B - B4034	Entry	1	1	C, D	846	785	1.078	777	789	23.2	42.2	155.217	F	
			2	A, B, D	852	788	1.081	780	785	25.0	44.4	164.172	F	
	Exit	1	1		595			595	606	0.3	0.3	1.885	A	
			2	1		593			593	602	0.3	0.3	1.901	A
		2	1		1188			1187	1208	1.3	1.5	4.217	A	
	3	1		1187			1187	1208	0.0	0.0	0.000	A		
C - Water Eaton Road	Entry	1	1	D	257	258	0.997	257	256	9.2	9.7	134.002	F	
			2	A, B, C	152	258	0.587	149	152	1.9	2.1	47.325	E	
	Exit	1	1	(A, B, C, D)	506			409	411	17.9	42.0	281.143	F	
D - B4034 Buckingham Road	Entry	1	1	A, B	494	621	0.795	495	503	2.5	2.4	18.583	C	
			2	B, C, D	512	623	0.821	514	524	2.8	2.8	20.156	C	
	Exit	1	1	(A, B, C, D)	1005			1005	1026	0.0	0.0	0.002	A	
			2	1		746			744	749	1.3	1.4	6.115	A
	3	1	2	1		736			734	745	1.3	1.3	6.171	A
			2	1		1478			1476	1493	2.0	2.2	5.039	A
3	1		1476			1476	1493	0.0	0.0	0.000	A			

## 17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	446	580	0.768	448	473	3.2	2.2	20.227	C
			2	A, C, D	298	583	0.511	300	314	1.5	1.1	14.705	B
	Exit	1	1	(A, B, C, D)	694			743	781	25.8	5.3	58.461	F
B - B4034	Entry	1	1	C, D	687	807	0.852	769	786	42.2	20.9	145.295	F
			2	A, B, D	701	809	0.866	783	798	44.4	22.7	151.470	F
	Exit	1	1		515			516	539	0.3	0.1	1.245	A
			2	1		518			518	542	0.3	0.2	1.235
		2	1		1034			1035	1083	1.5	1.1	3.972	A
	3	1		1035			1035	1083	0.0	0.0	0.000	A	
C - Water Eaton Road	Entry	1	1	D	255	266	0.958	255	252	9.7	9.5	136.208	F
			2	A, B, C	150	266	0.565	152	150	2.1	2.0	46.691	E

		2	1	(A, B, C, D)	426			405	401	42.0	47.1	396.194	F
	Exit	1	1		333			333	342	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	398	620	0.642	399	410	2.4	1.2	12.318	B
			2	B, C, D	426	623	0.685	426	441	2.8	1.4	13.117	B
		2	1	(A, B, C, D)	824			824	840	0.0	0.0	0.000	A
	Exit	1	1		728			730	746	1.4	1.1	6.053	A
			2		732			734	746	1.3	1.1	6.022	A
		2	1		1464			1464	1493	2.2	2.0	5.029	A
		3	1		1464			1464	1493	0.0	0.0	0.000	A

## 18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	352	612	0.576	353	368	2.2	1.1	13.387	B
			2	A, C, D	240	615	0.391	241	246	1.1	0.6	10.204	B
		2	1	(A, B, C, D)	591			592	607	5.3	0.3	6.116	A
	Exit	1	1		597			597	632	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	533	836	0.637	552	630	20.9	1.9	38.985	E
			2	A, B, D	648	840	0.772	668	714	22.7	2.9	40.348	E
	Exit	1	1		433			434	445	0.1	0.0	0.546	A
			2		437			437	449	0.2	0.0	0.528	A
		2	1		871			871	895	1.1	0.8	3.506	A
		3	1		871			871	895	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	312	388	0.803	332	308	9.5	6.4	96.922	F
			2	A, B, C	182	388	0.469	185	177	2.0	1.4	33.691	D
		2	1	(A, B, C, D)	354			494	470	47.1	17.1	209.529	F
	Exit	1	1		274			274	276	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	329	646	0.510	329	337	1.2	0.9	9.213	A
			2	B, C, D	364	648	0.561	364	370	1.4	0.9	9.805	A
		2	1	(A, B, C, D)	693			693	703	0.0	0.0	0.000	A
	Exit	1	1		645			648	678	1.1	0.5	3.930	A
			2		638			640	675	1.1	0.4	3.971	A
		2	1		1287			1288	1355	2.0	1.6	4.659	A
		3	1		1288			1288	1355	0.0	0.0	0.000	A



# 2033 Base + CD + D with TP, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	141.96	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	765	100.000
B - B4034		ONE HOUR	✓	1540	100.000
C - Water Eaton Road		ONE HOUR	✓	463	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	898	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	462	133	171
	B - B4034	502	1	17	1020
	C - Water Eaton Road	104	68	0	291
	D - B4034 Buckingham Road	116	575	204	3

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0
	D - B4034 Buckingham Road	0	3	0	0

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	105.09	27.0	F	700	1050
B - B4034	137.83	74.2	F	1413	2120
C - Water Eaton Road	457.11	54.4	F	426	640
D - B4034 Buckingham Road	19.50	5.5	C	823	1235

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	567	142	641	569	572	543	0.0	1.9	11.782	B
B - B4034	1158	289	383	1158	1164	827	0.0	3.1	9.830	A
C - Water Eaton Road	350	88	1274	352	346	268	0.0	1.6	16.449	C
D - B4034 Buckingham Road	675	169	508	676	685	1115	0.0	1.5	8.350	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	684	171	771	681	681	652	1.9	4.1	18.452	C
B - B4034	1386	347	455	1393	1391	997	3.1	6.9	17.239	C
C - Water Eaton Road	417	104	1532	407	399	317	1.6	5.2	33.564	D
D - B4034 Buckingham Road	817	204	608	815	820	1327	1.5	2.6	10.746	B

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	848	212	930	794	786	727	4.1	18.8	57.217	F
B - B4034	1701	425	549	1573	1572	1171	6.9	43.5	63.004	F
C - Water Eaton Road	518	129	1737	403	418	384	5.2	29.1	149.657	F
D - B4034 Buckingham Road	988	247	662	995	997	1473	2.6	5.0	18.205	C

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	845	211	922	811	813	725	18.8	27.0	105.094	F
B - B4034	1679	420	556	1562	1585	1179	43.5	74.2	137.826	F
C - Water Eaton Road	509	127	1734	403	408	384	29.1	53.1	374.306	F
D - B4034 Buckingham Road	981	245	660	987	1001	1481	5.0	5.5	19.499	C

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	679	170	763	730	768	688	27.0	7.8	69.359	F
B - B4034	1390	348	476	1533	1567	1019	74.2	33.9	122.941	F
C - Water Eaton Road	418	104	1682	413	412	327	53.1	54.4	457.106	F
D - B4034 Buckingham Road	803	201	649	802	831	1453	5.5	2.6	12.757	B

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	575	144	664	580	599	583	7.8	2.0	17.538	C
B - B4034	1165	291	388	1195	1293	856	33.9	3.7	30.094	D
C - Water Eaton Road	347	87	1314	499	498	269	54.4	18.3	226.926	F
D - B4034 Buckingham Road	675	169	569	677	693	1250	2.6	1.6	9.397	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	342	622	0.551	343	346	0.0	1.1	11.616	B
			2	A, C, D	226	625	0.361	226	226	0.0	0.5	8.853	A
		2	1	(A, B, C, D)	567			568	578	0.0	0.2	1.246	A
	Exit	1	1		543			543	539	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	515	842	0.612	516	518	0.0	1.2	8.574	A
			2	A, B, D	643	845	0.761	642	647	0.0	1.9	10.829	B
		2	1		417			417	423	0.0	0.1	0.408	A
	Exit	2	1		411			411	417	0.0	0.1	0.426	A
			2	1		828			827	836	0.0	0.8	3.395
		3	1		827			827	836	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	221	413	0.535	221	217	0.0	1.1	18.578	C
			2	A, B, C	130	413	0.315	131	129	0.0	0.4	12.809	B
		2	1	(A, B, C, D)	350			351	353	0.0	0.0	0.009	A
	Exit	1	1		268			268	265	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	319	668	0.476	318	324	0.0	0.7	8.094	A
			2	B, C, D	357	673	0.530	357	361	0.0	0.8	8.578	A
		2	1	(A, B, C, D)	675			675	691	0.0	0.0	0.000	A
	Exit	1	1		555			554	559	0.0	0.2	1.301	A
			2		562			561	563	0.0	0.2	1.298	A
		2	1		1115			1115	1117	0.0	1.2	4.014	A
			3	1		1115			1115	1117	0.0	0.0	0.000

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	414	581	0.713	414	413	1.1	2.0	15.294	C
			2	A, C, D	269	584	0.461	268	268	0.5	0.9	11.128	B
		2	1	(A, B, C, D)	684			683	686	0.2	1.2	4.763	A
	Exit	1	1		652			652	643	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	650	818	0.795	653	653	1.2	2.9	15.252	C
			2	A, B, D	736	822	0.895	740	738	1.9	4.0	18.988	C
		2	1		500			500	502	0.1	0.1	0.820	A
	Exit	2	1		497			497	503	0.1	0.1	0.823	A
			2	1		997			997	1004	0.8	1.1	3.738
		3	1		997			997	1004	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	262	326	0.803	255	249	1.1	3.7	38.405	E
			2	A, B, C	153	326	0.471	152	150	0.4	1.0	20.041	C
		2	1	(A, B, C, D)	417			415	412	0.0	0.5	1.710	A
	Exit	1	1		317			317	315	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	391	635	0.615	390	394	0.7	1.2	10.323	B
			2	B, C, D	427	640	0.667	425	426	0.8	1.4	11.135	B
		2	1	(A, B, C, D)	817			817	825	0.0	0.0	0.000	A
	Exit	1	1		668			666	661	0.2	0.6	2.886	A
			2		663			662	664	0.2	0.6	2.890	A
		2	1		1328			1327	1323	1.2	1.7	4.515	A
			3	1		1327			1327	1323	0.0	0.0	0.000

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	479	531	0.902	478	473	2.0	3.1	21.706	C
			2	A, C, D	317	533	0.595	316	312	0.9	1.5	15.541	C
		2	1	(A, B, C, D)	848			796	792	1.2	14.2	37.795	E
	Exit	1	1		727			727	729	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	845	787	1.073	782	778	2.9	20.8	59.706	F
			2	A, B, D	856	789	1.085	791	794	4.0	22.7	66.221	F
		2	1		590			589	591	0.1	0.4	1.652	A
	Exit	2	1		585			584	589	0.1	0.4	1.651	A
			2	1		1173			1171	1178	1.1	1.4	4.131
		3	1		1171			1171	1178	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	261	256	1.021	253	257	3.7	9.0	99.243	F
			2	A, B, C	155	256	0.605	150	161	1.0	2.3	40.157	E
		2	1	(A, B, C, D)	518			416	444	0.5	17.8	68.607	F
	Exit	1	1		384			384	379	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	483	617	0.784	486	485	1.2	2.3	17.621	C
			2	B, C, D	505	620	0.815	509	513	1.4	2.6	18.746	C
		2	1	(A, B, C, D)	988			988	1007	0.0	0.0	0.003	A

D - B4034 Buckingham Road	Exit	1	1		741			739	741	0.6	1.5	5.666	A
			2		736			733	736	0.6	1.5	5.707	A
	2	1			1472			1473	1475	1.7	2.1	4.998	A
			3	1			1473			1475	0.0	0.0	0.000

## 17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	488	533	0.915	486	490	3.1	3.3	23.332	C	
			2	A, C, D	322	536	0.601	326	323	1.5	1.5	17.036	C	
	Exit	1	1	(A, B, C, D)	845			810	813	14.2	22.3	84.244	F	
			2	1		725			725	733	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	831	784	1.060	772	790	20.8	36.2	134.202	F	
			2	A, B, D	848	788	1.077	790	795	22.7	38.1	141.413	F	
	Exit	1	1		588			589	598	0.4	0.3	1.798	A	
			2	1		589			590	601	0.4	0.2	1.794	A
			3	1		1178			1179	1199	1.4	1.4	4.230	A
	C - Water Eaton Road	Entry	1	1	D	252	257	0.978	250	254	9.0	9.5	131.461	F
2				A, B, C	150	257	0.582	152	154	2.3	2.1	50.148	F	
Exit		1	1	(A, B, C, D)	509			401	409	17.8	41.5	272.583	F	
			2	1		384			384	382	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	474	617	0.768	479	488	2.3	2.5	18.847	C	
			2	B, C, D	506	621	0.816	508	513	2.6	2.9	20.072	C	
	Exit	1	1	(A, B, C, D)	981			980	1003	0.0	0.0	0.017	A	
			2	1		740			741	749	1.5	1.3	6.302	A
			2	1		737			739	745	1.5	1.3	6.320	A
			3	1		1481			1481	1494	2.1	2.1	5.079	A
Exit	1	1		1481			1481	1494	0.0	0.0	0.000	A		

## 17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	437	584	0.749	441	465	3.3	2.1	19.663	C	
			2	A, C, D	288	587	0.490	289	304	1.5	1.0	14.323	B	
	Exit	1	1	(A, B, C, D)	679			725	762	22.3	4.7	52.298	F	
			2	1		688			688	702	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	681	811	0.840	752	774	36.2	16.1	120.129	F	
			2	A, B, D	709	815	0.870	781	793	38.1	17.8	125.670	F	
	Exit	1	1		506			506	536	0.3	0.1	1.141	A	
			2	1		511			511	530	0.2	0.1	1.165	A
			3	1		1017			1019	1067	1.4	1.0	3.913	A
	C - Water Eaton Road	Entry	1	1	D	263	275	0.955	263	260	9.5	9.4	130.913	F
2				A, B, C	154	275	0.559	149	152	2.1	2.1	46.441	E	
Exit		1	1	(A, B, C, D)	418			416	412	41.5	42.9	367.388	F	
			2	1		327			327	335	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	385	623	0.619	384	400	2.5	1.2	12.337	B	
			2	B, C, D	418	624	0.671	419	431	2.9	1.4	13.159	B	
	Exit	1	1	(A, B, C, D)	803			803	819	0.0	0.0	0.001	A	
			2	1		724			727	741	1.3	1.0	5.945	A
			2	1		722			726	739	1.3	1.0	5.975	A
			3	1		1452			1453	1480	2.1	2.0	5.041	A
Exit	1	1		1453			1453	1480	0.0	0.0	0.000	A		

## 18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	352	615	0.572	352	363	2.1	1.2	13.271	B	
			2	A, C, D	228	618	0.368	228	236	1.0	0.6	10.219	B	
	Exit	1	1	(A, B, C, D)	575			579	594	4.7	0.2	5.698	A	
			2	1		583			583	618	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	524	840	0.624	537	596	16.1	1.5	29.782	D	
			2	A, B, D	641	844	0.760	658	698	17.8	2.2	30.356	D	
	Exit	1	1		430			430	441	0.1	0.1	0.571	A	
			2	1		426			426	442	0.1	0.1	0.569	A
			3	1		856			856	884	1.0	0.9	3.527	A
	C - Water Eaton Road	Entry	1	1	D	293	399	0.733	321	318	9.4	5.0	88.311	F
2				A, B, C	173	399	0.435	178	180	2.1	1.0	30.998	D	
Exit		1	1	(A, B, C, D)	347			466	476	42.9	12.3	169.650	F	
			2	1										



	<b>Exit</b>	1	1		269			269	274	0.0	0.0	0.000	A
<b>D - B4034 Buckingham Road</b>	<b>Entry</b>	1	1	A, B	318	648	0.491	320	329	1.2	0.7	9.000	A
			2	B, C, D	357	652	0.548	358	364	1.4	0.9	9.754	A
		2	1	(A, B, C, D)	675			675	689	0.0	0.0	0.000	A
	<b>Exit</b>	1	1		625			627	659	1.0	0.4	3.424	A
			2		619			621	654	1.0	0.4	3.458	A
		2	1		1248			1250	1316	2.0	1.4	4.552	A
		3	1		1250			1250	1316	0.0	0.0	0.000	A

# 2033 Base + CD + D - ST, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	193.61	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D22	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	780	100.000
B - B4034		ONE HOUR	✓	1590	100.000
C - Water Eaton Road		ONE HOUR	✓	466	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	935	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	462	133	186
	B - B4034	502	1	17	1070
	C - Water Eaton Road	104	68	0	294
	D - B4034 Buckingham Road	125	600	207	3

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0
	D - B4034 Buckingham Road	0	3	0	0

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	131.83	35.8	F	719	1078
B - B4034	210.46	107.3	F	1462	2192
C - Water Eaton Road	587.73	68.7	F	429	643
D - B4034 Buckingham Road	22.11	6.0	C	857	1285

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	594	149	662	597	588	552	0.0	2.0	12.339	B
B - B4034	1201	300	393	1208	1199	867	0.0	3.0	10.405	B
C - Water Eaton Road	352	88	1339	354	347	263	0.0	1.7	17.775	C
D - B4034 Buckingham Road	702	176	512	703	717	1179	0.0	1.5	8.522	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	701	175	783	696	690	649	2.0	4.8	20.141	C
B - B4034	1408	352	471	1420	1425	1008	3.0	7.8	19.156	C
C - Water Eaton Road	419	105	1576	402	396	315	1.7	6.5	40.962	E
D - B4034 Buckingham Road	835	209	595	836	852	1383	1.5	2.7	11.425	B

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	857	214	951	794	785	728	4.8	22.6	65.254	F
B - B4034	1780	445	554	1564	1567	1195	7.8	60.6	81.275	F
C - Water Eaton Road	519	130	1740	400	408	378	6.5	33.8	187.754	F
D - B4034 Buckingham Road	1027	257	650	1028	1036	1484	2.7	6.0	19.932	C

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	868	217	960	807	808	712	22.6	35.8	131.835	F
B - B4034	1743	436	564	1548	1582	1200	60.6	107.2	195.525	F
C - Water Eaton Road	517	129	1726	400	396	385	33.8	63.4	460.264	F
D - B4034 Buckingham Road	1026	256	638	1034	1050	1486	6.0	6.0	22.114	C

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	701	175	793	769	804	696	35.8	10.7	92.416	F
B - B4034	1437	359	508	1567	1586	1057	107.2	74.5	210.459	F
C - Water Eaton Road	422	105	1737	400	401	339	63.4	68.7	587.727	F
D - B4034 Buckingham Road	847	212	643	845	865	1491	6.0	2.9	13.549	B

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	590	148	682	599	626	626	10.7	2.1	22.675	C
B - B4034	1200	300	404	1342	1468	875	74.5	10.0	78.743	F
C - Water Eaton Road	345	86	1472	494	444	274	68.7	45.9	396.064	F
D - B4034 Buckingham Road	703	176	605	703	717	1368	2.9	1.9	9.718	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	356	616	0.579	356	350	0.0	1.1	12.021	B
			2	A, C, D	240	619	0.388	240	238	0.0	0.6	9.206	A
		2	1	(A, B, C, D)	594			596	595	0.0	0.2	1.445	A
	Exit	1	1		552			552	544	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	542	837	0.648	546	541	0.0	1.1	9.131	A
			2	A, B, D	659	841	0.783	662	658	0.0	1.9	11.442	B
		2	1		426			426	437	0.0	0.0	0.455	A
	Exit	2	1		440			440	431	0.0	0.1	0.466	A
			2	1		866			867	865	0.0	0.7	3.410
		3	1		867			867	865	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	221	390	0.567	223	217	0.0	1.3	20.159	C
			2	A, B, C	131	390	0.335	131	129	0.0	0.4	13.374	B
		2	1	(A, B, C, D)	352			352	354	0.0	0.0	0.133	A
	Exit	1	1		263			263	266	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	335	672	0.499	335	342	0.0	0.8	8.266	A
			2	B, C, D	367	671	0.547	368	375	0.0	0.8	8.755	A
		2	1	(A, B, C, D)	702			702	724	0.0	0.0	0.000	A
	Exit	1	1		583			583	580	0.0	0.2	1.517	A
			2		598			598	591	0.0	0.2	1.511	A
		2	1		1181			1179	1166	0.0	1.4	4.118	A
3	1		1179			1179	1166	0.0	0.0	0.000	A		

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	412	578	0.713	411	407	1.1	2.0	15.710	C
			2	A, C, D	288	580	0.496	285	284	0.6	1.1	11.580	B
		2	1	(A, B, C, D)	701			700	696	0.2	1.7	6.077	A
	Exit	1	1		649			649	645	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	670	813	0.825	675	676	1.1	3.3	17.352	C
			2	A, B, D	738	816	0.904	745	749	1.9	4.5	20.772	C
		2	1		504			504	510	0.0	0.1	0.848	A
	Exit	2	1		504			503	509	0.1	0.1	0.856	A
			2	1		1007			1008	1019	0.7	0.9	3.779
		3	1		1008			1008	1019	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	258	311	0.832	252	247	1.3	4.2	44.730	E
			2	A, B, C	153	311	0.492	150	149	0.4	1.2	22.633	C
		2	1	(A, B, C, D)	419			411	411	0.0	1.1	3.638	A
	Exit	1	1		315			315	318	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	402	640	0.629	404	413	0.8	1.2	10.942	B
			2	B, C, D	433	643	0.672	433	440	0.8	1.5	11.877	B
		2	1	(A, B, C, D)	835			835	857	0.0	0.0	0.000	A
	Exit	1	1		688			688	686	0.2	0.6	3.455	A
			2		695			695	691	0.2	0.7	3.449	A
		2	1		1383			1383	1375	1.4	1.8	4.664	A
3	1		1383			1383	1375	0.0	0.0	0.000	A		

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	475	524	0.907	473	466	2.0	3.3	21.791	C
			2	A, C, D	320	526	0.608	321	319	1.1	1.5	16.067	C
		2	1	(A, B, C, D)	857			795	792	1.7	17.8	45.574	E
	Exit	1	1		728			728	723	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	884	785	1.126	775	778	3.3	29.4	78.183	F
			2	A, B, D	896	788	1.137	789	789	4.5	31.2	84.307	F
		2	1		599			600	599	0.1	0.2	1.741	A
	Exit	2	1		592			594	602	0.1	0.2	1.706	A
			2	1		1194			1195	1200	0.9	1.4	4.224
		3	1		1195			1195	1200	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	256	255	1.006	248	250	4.2	9.3	107.745	F
			2	A, B, C	151	255	0.591	152	158	1.2	1.7	39.653	E
		2	1	(A, B, C, D)	519			407	430	1.1	22.8	101.001	F
	Exit	1	1		378			378	375	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	504	621	0.813	507	510	1.2	2.7	19.123	C
			2	B, C, D	522	623	0.838	521	526	1.5	3.3	20.711	C
		2	1	(A, B, C, D)	1027			1027	1049	0.0	0.0	0.000	A

D - B4034 Buckingham Road	Exit	1	1		746			744	745	0.6	1.2	6.102	A
			2		744			741	746	0.7	1.3	6.057	A
	2	1			1485			1484	1489	1.8	2.1	5.041	A
					1484			1484	1489	0.0	0.0	0.000	A

## 17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	479	521	0.919	475	479	3.3	3.4	23.978	C
			2	A, C, D	333	524	0.635	331	329	1.5	1.7	18.161	C
	Exit	1	1	(A, B, C, D)	868			812	809	17.8	30.7	110.196	F
B - B4034	Entry	1	1	C, D	871	782	1.115	774	794	29.4	52.6	190.880	F
			2	A, B, D	872	785	1.111	774	787	31.2	54.6	200.185	F
	Exit	1	1		601			600	608	0.2	0.4	2.079	A
			2		602			602	609	0.2	0.3	2.066	A
		3	1		1202			1200	1216	1.4	1.6	4.296	A
	C - Water Eaton Road	Entry	1	1	D	251	260	0.965	249	247	9.3	9.9	139.475
2				A, B, C	148	260	0.571	151	149	1.7	2.0	48.366	E
Exit		1	1	(A, B, C, D)	517			399	400	22.8	51.6	355.450	F
D - B4034 Buckingham Road	Entry	1	1	A, B	500	624	0.800	503	515	2.7	2.9	21.424	C
			2	B, C, D	526	628	0.838	531	536	3.3	3.1	22.690	C
	Exit	1	1	(A, B, C, D)	1026			1026	1050	0.0	0.0	0.044	A
			2		743			743	751	1.2	1.5	7.091	A
		3	1		744			743	756	1.3	1.7	7.040	A
					1486			1486	1507	2.1	2.2	5.166	A
	3	1		1486			1486	1507	0.0	0.0	0.000	A	

## 17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	449	574	0.781	454	478	3.4	2.2	20.411	C
			2	A, C, D	312	577	0.540	315	326	1.7	1.1	15.338	C
	Exit	1	1	(A, B, C, D)	701			760	797	30.7	7.5	74.630	F
B - B4034	Entry	1	1	C, D	712	799	0.889	776	789	52.6	36.3	207.530	F
			2	A, B, D	725	804	0.902	792	797	54.6	38.2	213.341	F
	Exit	1	1		521			521	552	0.4	0.1	1.235	A
			2		533			533	546	0.3	0.1	1.252	A
		3	1		1055			1057	1101	1.6	1.1	3.931	A
	C - Water Eaton Road	Entry	1	1	D	251	256	0.979	252	253	9.9	9.8	139.566
2				A, B, C	148	256	0.579	148	148	2.0	1.6	43.909	E
Exit		1	1	(A, B, C, D)	422			399	399	51.6	57.3	490.751	F
D - B4034 Buckingham Road	Entry	1	1	A, B	410	625	0.657	409	420	2.9	1.4	13.057	B
			2	B, C, D	437	625	0.699	436	445	3.1	1.6	14.010	B
	Exit	1	1	(A, B, C, D)	847			847	853	0.0	0.0	0.000	A
			2		741			738	760	1.5	1.7	6.882	A
		3	1		753			752	759	1.7	1.6	6.849	A
					1491			1491	1519	2.2	2.1	5.131	A
	3	1		1491			1491	1519	0.0	0.0	0.000	A	

## 18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	354	609	0.582	356	373	2.2	1.1	14.225	B
			2	A, C, D	244	612	0.398	243	253	1.1	0.7	10.496	B
	Exit	1	1	(A, B, C, D)	590			598	621	7.5	0.3	10.312	B
B - B4034	Entry	1	1	C, D	557	834	0.668	626	704	36.3	4.6	78.752	F
			2	A, B, D	643	839	0.766	716	764	38.2	5.5	78.712	F
	Exit	1	1		441			441	453	0.1	0.1	0.564	A
			2		435			436	450	0.1	0.0	0.554	A
		3	1		877			875	904	1.1	0.8	3.484	A
	C - Water Eaton Road	Entry	1	1	D	308	346	0.891	315	283	9.8	8.7	117.331
2				A, B, C	179	346	0.517	179	161	1.6	2.0	38.428	E
Exit		1	1	(A, B, C, D)	345			487	442	57.3	35.3	323.235	F



	<b>Exit</b>	1	1		274			274	278	0.0	0.0	0.000	A
<b>D - B4034 Buckingham Road</b>	<b>Entry</b>	1	1	A, B	336	637	0.528	336	343	1.4	0.8	9.402	A
			2	B, C, D	367	640	0.573	368	374	1.6	1.0	10.005	B
		2	1	(A, B, C, D)	703			703	713	0.0	0.0	0.000	A
	<b>Exit</b>	1	1		678			681	716	1.7	0.6	5.352	A
			2		683			685	715	1.6	0.6	5.376	A
		2	1		1367			1368	1433	2.1	1.6	4.886	A
		3	1		1368			1368	1433	0.0	0.0	0.000	A

<b>Junctions 9</b>
<b>ARCADY 9 - Roundabout Module</b>
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**Filename:** J1- Post Calibration - Two lane Exits B4034 AM with taper\_V4.3 ST.j9  
**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J1  
**Report generation date:** 28/01/2021 15:50:57

- »2033 Base + CD + D, AM
- »2033 Base + CD + D with TP, AM
- »2033 Base + CD + D - ST, AM

### Summary of junction performance

AM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
[Lane Simulation] - 2033 Base + CD + D					
A - Sherwood Drive	D15	37.4	146.30		F
B - B4034		4.5	14.39		B
C - Water Eaton Road		23.1	154.91		F
D - B4034 Buckingham Road		44.1	93.56		F
[Lane Simulation] - 2033 Base + CD + D with TP					
A - Sherwood Drive	D17	37.6	151.50		F
B - B4034		4.7	14.60		B
C - Water Eaton Road		19.1	136.91		F
D - B4034 Buckingham Road		37.0	79.57		F
[Lane Simulation] - 2033 Base + CD + D - ST					
A - Sherwood Drive	D21	40.5	161.79		F
B - B4034		5.1	15.40		C
C - Water Eaton Road		27.5	187.46		F
D - B4034 Buckingham Road		67.9	136.01		F

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.*

### File summary

#### File Description

Title	Buckingham Road / Sherwood Drive / Water Eaton Road
Location	
Site number	1
Date	26/01/2021
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
Description	

### Units

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

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓		✓	929436905	199	59.89

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D21	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

### Analysis Set Details

ID	Use Lane Simulation	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	✓	D15,D17,D21	100.000	100.000

# 2033 Base + CD + D, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	89.36	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Sherwood Drive	
B	B4034	
C	Water Eaton Road	
D	B4034 Buckingham Road	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Sherwood Drive	3.80	6.00	28.0	13.3	31.4	36.0	
B - B4034	6.00	6.40	0.5	13.6	31.4	29.0	
C - Water Eaton Road	3.50	7.00	52.9	10.8	31.4	33.0	
D - B4034 Buckingham Road	3.40	6.70	118.7	14.3	31.4	33.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Sherwood Drive	Direct		300
B - B4034	None		
C - Water Eaton Road	Direct		-450
D - B4034 Buckingham Road	None		

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	0.623	1908
B - B4034	0.674	1816
C - Water Eaton Road	0.668	1385
D - B4034 Buckingham Road	0.686	1890

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

### Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
A - Sherwood Drive	Evenly split	10.00
B - B4034	Evenly split	10.00
C - Water Eaton Road	Evenly split	10.00
D - B4034 Buckingham Road	Evenly split	10.00

## Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Bottleneck capacity (PCU/hr)	Bottleneck type	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
A - Sherwood Drive	Entry	1	1	B	✓	4.00				0	99999	
			2	A, C, D	✓	4.00				0	99999	
		2	1	(A, B, C, D)		Infinity				0	99999	
	Exit	1	1			Infinity				0	99999	
B - B4034	Entry	1	1	C, D		Infinity				0	99999	
			2	A, B, D		Infinity				0	99999	
	Exit	1	1		✓	15.00				0	99999	
			2		✓	15.00				0	99999	
		2	1		✓	3.00	✓	1800	Random	0	99999	
		3	1			Infinity				0	99999	
C - Water Eaton Road	Entry	1	1	D	✓	10.00				0	99999	
			2	A, B, C	✓	10.00				0	99999	
		2	1	(A, B, C, D)		Infinity				0	99999	
	Exit	1	1			Infinity				0	99999	
D - B4034 Buckingham Road	Entry	1	1	A, B	✓	20.00				0	99999	
			2	B, C, D	✓	20.00				0	99999	
		2	1	(A, B, C, D)		Infinity				0	99999	
	Exit	1	1		✓	8.00				0	99999	
			2		✓	8.00				0	99999	
		2	1		✓	3.00	✓	1800	Random	0	99999	
3	1			Infinity				0	99999			

## Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	Entry	1	1	0.312	954
			2	0.312	954
B - B4034	Entry	1	1	0.337	908
			2	0.337	908
C - Water Eaton Road	Entry	1	1	0.334	692
			2	0.334	692
D - B4034 Buckingham Road	Entry	1	1	0.343	945
			2	0.343	945

## Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			Sherwood Drive	B4034	Water Eaton Road	B4034 Buckingham Road
A - Sherwood Drive	1	1		✓		
		2	✓		✓	✓
	2	1	✓	✓	✓	✓
B - B4034	1	1			✓	✓
		2	✓	✓		✓
C - Water Eaton Road	1	1				✓
		2	✓	✓	✓	
	2	1	✓	✓	✓	✓
D - B4034 Buckingham Road	1	1	✓	✓		
		2		✓	✓	✓
	2	1	✓	✓	✓	✓

## Traffic Demand

## Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	731	100.000
B - B4034		ONE HOUR	✓	983	100.000
C - Water Eaton Road		ONE HOUR	✓	430	100.000



D - B4034 Buckingham Road	ONE HOUR	✓	1361	100.000
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## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	505	122	105
	B - B4034	392	0	57	533
	C - Water Eaton Road	116	32	0	282
	D - B4034 Buckingham Road	154	984	221	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4
	C - Water Eaton Road	1	4	0	1
	D - B4034 Buckingham Road	0	2	1	0

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	146.30	37.4	F	670	1005
B - B4034	14.39	4.5	B	906	1358
C - Water Eaton Road	154.91	23.1	F	393	589
D - B4034 Buckingham Road	93.56	44.1	F	1247	1870

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	553	138	926	555	549	497	0.0	1.8	11.859	B
B - B4034	740	185	343	739	757	1138	0.0	1.8	7.696	A
C - Water Eaton Road	323	81	778	323	325	305	0.0	1.4	15.145	C
D - B4034 Buckingham Road	1016	254	408	1015	1030	694	0.0	2.4	8.666	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	652	163	1111	653	648	598	1.8	4.1	21.214	C
B - B4034	892	223	394	890	909	1369	1.8	2.6	9.360	A
C - Water Eaton Road	388	97	929	391	382	355	1.4	2.5	23.913	C
D - B4034 Buckingham Road	1215	304	486	1223	1235	834	2.4	5.0	13.976	B

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	804	201	1323	727	735	706	4.1	22.1	68.134	F
B - B4034	1078	270	466	1080	1105	1576	2.6	4.2	13.749	B
C - Water Eaton Road	466	117	1129	430	431	417	2.5	13.4	76.319	F
D - B4034 Buckingham Road	1506	376	583	1446	1429	978	5.0	27.2	46.675	E

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	813	203	1324	739	754	707	22.1	37.3	146.296	F

B - B4034	1091	273	468	1088	1117	1587	4.2	4.5	14.392	B
C - Water Eaton Road	477	119	1133	437	437	423	13.4	23.0	154.913	F
D - B4034 Buckingham Road	1505	376	581	1450	1455	988	27.2	44.2	93.556	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	661	165	1186	727	737	608	37.3	19.6	136.783	F
B - B4034	892	223	443	891	924	1487	4.5	2.6	10.619	B
C - Water Eaton Road	380	95	943	417	455	390	23.0	7.0	101.972	F
D - B4034 Buckingham Road	1219	305	493	1301	1380	871	44.2	9.5	58.073	F

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	535	134	938	549	620	490	19.6	2.1	32.714	D
B - B4034	740	185	331	738	765	1158	2.6	1.7	7.874	A
C - Water Eaton Road	319	80	773	325	348	297	7.0	1.5	24.471	C
D - B4034 Buckingham Road	1026	256	401	1027	1062	698	9.5	2.7	11.597	B

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

## 07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	382	654	0.584	383	380	0.0	1.2	11.600	B
			2	A, C, D	172	657	0.262	172	169	0.0	0.3	7.564	A
	Exit	1	1	(A, B, C, D)	553			554	555	0.0	0.3	1.494	A
			1	1		497			497	502	0.0	0.0	0.000
B - B4034	Entry	1	1	C, D	295	764	0.386	295	302	0.0	0.6	6.579	A
			2	A, B, D	446	776	0.574	444	455	0.0	1.2	8.422	A
	Exit	1	1		566			566	577	0.0	0.2	1.524	A
			2		571			571	574	0.0	0.2	1.524	A
		2	1		1137			1138	1146	0.0	1.2	4.109	A
			1		1138			1138	1146	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	212	424	0.500	211	210	0.0	1.1	17.029	C
			2	A, B, C	111	420	0.265	112	115	0.0	0.3	11.501	B
	Exit	1	1	(A, B, C, D)	323			323	330	0.0	0.0	0.052	A
			1	1		305			305	304	0.0	0.0	0.000
D - B4034 Buckingham Road	Entry	1	1	A, B	493	791	0.623	493	504	0.0	1.1	8.549	A
			2	B, C, D	523	793	0.659	522	526	0.0	1.2	8.778	A
		2	1	(A, B, C, D)	1016			1016	1039	0.0	0.0	0.000	A
	Exit	1	1		353			354	354	0.0	0.0	0.238	A
			2		339			339	348	0.0	0.0	0.240	A
		2	1		693			694	699	0.0	0.6	3.144	A
3	1		694			694	699	0.0	0.0	0.000	A		

## 07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	454	596	0.763	453	446	1.2	1.9	15.885	C
			2	A, C, D	199	599	0.332	200	202	0.3	0.5	9.140	A
	Exit	1	1	(A, B, C, D)	652			653	652	0.3	1.6	7.370	A
			1	1		598			598	599	0.0	0.0	0.000
B - B4034	Entry	1	1	C, D	371	743	0.499	371	381	0.6	0.9	7.758	A
			2	A, B, D	521	760	0.686	519	529	1.2	1.7	10.488	B
	Exit	1	1		685			685	688	0.2	0.8	3.581	A
			2		685			684	683	0.2	0.8	3.622	A
		2	1		1369			1369	1368	1.2	1.7	4.693	A
			1		1369			1369	1368	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	254	371	0.685	256	247	1.1	1.9	28.123	D
			2	A, B, C	134	368	0.366	134	135	0.3	0.6	14.777	B
	Exit	1	1	(A, B, C, D)	388			389	387	0.0	0.0	0.459	A
			1	1		355			355	360	0.0	0.0	0.000
Entry	1	1	A, B	600	764	0.785	604	611	1.1	2.5	13.799	B	
		2	B, C, D	615	766	0.803	619	624	1.2	2.5	14.149	B	

D - B4034 Buckingham Road	Exit	2	1	(A, B, C, D)	1215			1215	1246	0.0	0.0	0.000	A
		1	1		422			422	422	0.0	0.1	0.432	A
			2		412			412	418	0.0	0.1	0.426	A
		2	1		834			834	839	0.6	0.8	3.387	A
		3	1		834			834	839	0.0	0.0	0.000	A

## 08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	502	528	0.950	499	506	1.9	3.6	22.574	C
			2	A, C, D	231	532	0.434	229	230	0.5	0.9	11.976	B
		2	1	(A, B, C, D)	804			733	744	1.6	17.6	48.598	E
	Exit	1	1		706			706	708	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	468	718	0.652	469	487	0.9	1.5	11.117	B
			2	A, B, D	611	735	0.831	611	619	1.7	2.7	15.772	C
	Exit	1	1		804			800	791	0.8	2.4	8.615	A
			2		781			776	776	0.8	2.4	8.849	A
		2	1		1576			1576	1565	1.7	2.4	5.221	A
	3	1		1576			1576	1565	0.0	0.0	0.000	A	
C - Water Eaton Road	Entry	1	1	D	289	303	0.957	278	276	1.9	7.0	67.974	F
			2	A, B, C	153	301	0.511	152	156	0.6	1.3	25.644	D
	Exit	1	1	(A, B, C, D)	466			442	455	0.0	5.2	21.537	C
			1	1		417			417	417	0.0	0.0	0.000
D - B4034 Buckingham Road	Entry	1	1	A, B	733	732	1.000	713	709	2.5	11.4	41.939	E
			2	B, C, D	749	732	1.022	733	720	2.5	11.6	42.076	E
		2	1	(A, B, C, D)	1506			1482	1502	0.0	4.3	4.115	A
	Exit	1	1		492			492	498	0.1	0.2	0.932	A
			2		485			485	497	0.1	0.2	0.929	A
		2	1		976			978	993	0.8	1.0	3.807	A
3	1		978			978	993	0.0	0.0	0.000	A		

## 08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	511	527	0.967	510	522	3.6	3.7	25.301	D
			2	A, C, D	228	531	0.429	230	232	0.9	0.8	13.038	B
		2	1	(A, B, C, D)	813			739	754	17.6	32.8	124.658	F
	Exit	1	1		707			707	716	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	484	720	0.673	481	496	1.5	1.6	11.534	B
			2	A, B, D	607	736	0.825	607	621	2.7	2.9	16.626	C
	Exit	1	1		796			792	808	2.4	3.0	11.854	B
			2		800			796	802	2.4	3.0	11.907	B
		2	1		1588			1587	1610	2.4	2.5	5.393	A
	3	1		1587			1587	1610	0.0	0.0	0.000	A	
C - Water Eaton Road	Entry	1	1	D	293	302	0.967	287	284	7.0	8.4	96.815	F
			2	A, B, C	150	300	0.499	150	153	1.3	1.3	29.803	D
	Exit	1	1	(A, B, C, D)	477			442	443	5.2	13.4	80.865	F
			1	1		423			423	426	0.0	0.0	0.000
D - B4034 Buckingham Road	Entry	1	1	A, B	741	732	1.011	731	723	11.4	14.5	67.601	F
			2	B, C, D	731	733	0.997	719	731	11.6	14.9	68.352	F
		2	1	(A, B, C, D)	1505			1472	1481	4.3	14.7	24.955	C
	Exit	1	1		491			492	504	0.2	0.1	0.969	A
			2		498			498	503	0.2	0.1	0.966	A
		2	1		990			988	1007	1.0	1.1	3.826	A
3	1		988			988	1007	0.0	0.0	0.000	A		

## 08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	500	572	0.873	503	508	3.7	3.0	23.959	C
			2	A, C, D	223	575	0.387	224	229	0.8	0.7	12.898	B
		2	1	(A, B, C, D)	661			722	734	32.8	15.9	116.813	F
	Exit	1	1		608			608	634	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	370	727	0.509	369	390	1.6	0.9	8.763	A
			2	A, B, D	522	744	0.702	522	534	2.9	1.7	11.947	B
	Exit	1	1		741			749	783	3.0	1.6	10.970	B
			2		729			737	770	3.0	1.6	11.215	B
		2	1		1486			1487	1555	2.5	2.1	5.308	A
	3	1		1487			1487	1555	0.0	0.0	0.000	A	
C - Water Eaton Road	Entry	1	1	D	265	367	0.722	280	304	8.4	3.5	67.940	F
			2	A, B, C	135	365	0.372	137	151	1.3	0.7	22.593	C

		2	1	(A, B, C, D)	380			400	434	13.4	2.8	52.981	F
	Exit	1	1		390			390	404	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	620	763	0.813	648	687	14.5	4.2	45.872	E
			2	B, C, D	622	764	0.815	653	693	14.9	4.5	46.031	E
		2	1	(A, B, C, D)	1219			1242	1296	14.7	0.8	14.167	B
	Exit	1	1		436			436	460	0.1	0.1	0.635	A
			2		431			432	457	0.1	0.1	0.651	A
		2	1		868			871	918	1.1	0.8	3.611	A
		3	1		871			871	918	0.0	0.0	0.000	A

## 08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	381	649	0.588	382	429	3.0	1.3	14.937	B
			2	A, C, D	168	654	0.257	167	191	0.7	0.4	8.989	A
		2	1	(A, B, C, D)	535			549	612	15.9	0.4	20.228	C
	Exit	1	1		490			490	511	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	292	767	0.381	292	308	0.9	0.6	6.712	A
			2	A, B, D	448	783	0.572	446	457	1.7	1.1	8.643	A
	Exit	1	1		579			579	621	1.6	0.3	3.139	A
			2		577			578	617	1.6	0.3	3.208	A
		2	1		1157			1158	1242	2.1	1.2	4.421	A
		3	1		1158			1158	1242	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	212	425	0.498	217	231	3.5	1.1	25.926	D
			2	A, B, C	109	422	0.258	108	118	0.7	0.4	13.091	B
		2	1	(A, B, C, D)	319			321	337	2.8	0.0	4.695	A
	Exit	1	1		297			297	317	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	501	794	0.632	502	524	4.2	1.3	11.366	B
			2	B, C, D	524	795	0.659	524	538	4.5	1.4	11.761	B
		2	1	(A, B, C, D)	1026			1026	1038	0.8	0.0	0.254	A
	Exit	1	1		348			348	368	0.1	0.0	0.272	A
			2		348			349	372	0.1	0.0	0.289	A
		2	1		697			698	741	0.8	0.5	3.215	A
		3	1		698			698	741	0.0	0.0	0.000	A

# 2033 Base + CD + D with TP, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	82.97	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	727	100.000
B - B4034		ONE HOUR	✓	979	100.000
C - Water Eaton Road		ONE HOUR	✓	429	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	1345	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	505	122	101
	B - B4034	392	0	57	529
	C - Water Eaton Road	116	32	0	281
	D - B4034 Buckingham Road	149	974	220	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4
	C - Water Eaton Road	1	4	0	1
	D - B4034 Buckingham Road	0	2	1	0

## Results



## Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	151.50	37.6	F	668	1002
B - B4034	14.60	4.7	B	899	1349
C - Water Eaton Road	136.91	19.1	F	391	586
D - B4034 Buckingham Road	79.57	37.0	F	1231	1847

## Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	543	136	907	548	549	503	0.0	1.5	11.691	B
B - B4034	741	185	332	742	756	1125	0.0	1.6	7.561	A
C - Water Eaton Road	325	81	776	327	328	298	0.0	1.4	15.647	C
D - B4034 Buckingham Road	999	250	413	997	1017	688	0.0	2.5	8.605	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	662	166	1109	660	657	589	1.5	4.7	21.405	C
B - B4034	882	220	402	880	897	1367	1.6	2.3	9.144	A
C - Water Eaton Road	387	97	922	384	385	360	1.4	2.9	23.016	C
D - B4034 Buckingham Road	1213	303	489	1210	1218	816	2.5	4.7	13.272	B

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	807	202	1304	737	738	716	4.7	22.1	69.450	F
B - B4034	1082	270	472	1081	1104	1574	2.3	4.6	13.994	B
C - Water Eaton Road	466	116	1127	435	439	427	2.9	12.0	67.571	F
D - B4034 Buckingham Road	1486	372	590	1430	1415	970	4.7	25.2	43.946	E

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	794	198	1311	744	749	711	22.1	37.6	151.503	F
B - B4034	1084	271	465	1085	1111	1575	4.6	4.2	14.598	B
C - Water Eaton Road	465	116	1127	450	447	423	12.0	19.0	136.909	F
D - B4034 Buckingham Road	1486	372	588	1435	1452	987	25.2	37.0	79.574	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	661	165	1143	736	741	614	37.6	18.3	133.458	F
B - B4034	878	220	428	879	909	1463	4.2	2.4	10.188	B
C - Water Eaton Road	386	96	935	426	445	372	19.0	5.8	86.922	F
D - B4034 Buckingham Road	1195	299	504	1253	1346	855	37.0	6.7	45.949	E

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	538	135	918	552	616	494	18.3	2.1	31.928	D
B - B4034	731	183	337	733	762	1134	2.4	1.4	7.999	A
C - Water Eaton Road	316	79	771	317	343	299	5.8	1.4	21.466	C
D - B4034 Buckingham Road	1010	252	402	1009	1037	685	6.7	2.6	10.181	B

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	543	136	907	548	549	503	0.0	1.5	11.691	B
B - B4034	741	185	332	742	756	1125	0.0	1.6	7.561	A
C - Water Eaton Road	325	81	776	327	328	298	0.0	1.4	15.647	C
D - B4034 Buckingham Road	999	250	413	997	1017	688	0.0	2.5	8.605	A

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	376	660	0.571	379	381	0.0	1.1	11.405	B
			2	A, C, D	168	663	0.254	169	168	0.0	0.3	7.410	A
		2	1	(A, B, C, D)	543			545	555	0.0	0.2	1.503	A
	Exit	1	1		503			503	498	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	294	766	0.384	294	304	0.0	0.6	6.506	A
			2	A, B, D	447	782	0.572	448	452	0.0	1.0	8.253	A
	Exit	1	1		559			559	573	0.0	0.3	1.632	A
			2		564			565	571	0.0	0.3	1.629	A
		2	1		1124			1125	1139	0.0	1.3	4.086	A
		3	1		1125			1125	1139	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	214	424	0.503	215	216	0.0	1.1	17.594	C
			2	A, B, C	111	422	0.263	112	113	0.0	0.3	11.789	B
	Exit	1	1	(A, B, C, D)	325			325	334	0.0	0.0	0.028	A
					298			298	302	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	490	790	0.620	489	500	0.0	1.2	8.444	A
			2	B, C, D	509	790	0.645	508	518	0.0	1.3	8.760	A
		2	1	(A, B, C, D)	999			999	1028	0.0	0.0	0.000	A
	Exit	1	1		342			342	352	0.0	0.0	0.245	A
			2		347			347	353	0.0	0.0	0.252	A
		2	1		689			688	702	0.0	0.7	3.135	A
3	1		688			688	702	0.0	0.0	0.000	A		

## 07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	457	596	0.768	458	456	1.1	2.3	15.931	C
			2	A, C, D	202	599	0.337	202	201	0.3	0.6	8.840	A
		2	1	(A, B, C, D)	662			659	663	0.2	1.9	7.578	A
	Exit	1	1		589			589	589	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	363	742	0.490	363	374	0.6	0.7	7.531	A
			2	A, B, D	518	757	0.685	517	523	1.0	1.6	10.268	B
	Exit	1	1		679			679	684	0.3	0.7	3.704	A
			2		688			688	687	0.3	0.8	3.654	A
		2	1		1367			1367	1369	1.3	1.8	4.687	A
		3	1		1367			1367	1369	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	250	373	0.669	247	250	1.1	2.2	26.884	D
			2	A, B, C	137	371	0.370	137	135	0.3	0.6	15.127	C
	Exit	1	1	(A, B, C, D)	387			387	391	0.0	0.0	0.203	A
					360			360	360	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	601	763	0.787	600	604	1.2	2.3	12.941	B
			2	B, C, D	612	766	0.799	610	614	1.3	2.5	13.597	B
		2	1	(A, B, C, D)	1213			1213	1227	0.0	0.0	0.000	A
	Exit	1	1		409			409	417	0.0	0.1	0.452	A
			2		409			408	416	0.0	0.1	0.448	A
		2	1		817			816	831	0.7	0.9	3.399	A
3	1		816			816	831	0.0	0.0	0.000	A		

## 08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	510	534	0.955	508	511	2.3	3.5	22.711	C
			2	A, C, D	228	537	0.425	229	227	0.6	0.8	12.022	B
		2	1	(A, B, C, D)	807			739	744	1.9	17.8	49.775	E
	Exit	1	1		716			716	711	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	475	718	0.661	478	487	0.7	1.5	11.283	B
			2	A, B, D	607	733	0.828	604	617	1.6	3.1	16.083	C
	Exit	1	1		790			791	784	0.7	2.2	8.867	A
			2		780			783	780	0.8	2.1	8.953	A
		2	1		1575			1574	1562	1.8	2.3	5.213	A
		3	1		1574			1574	1562	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	284	304	0.935	278	280	2.2	6.6	65.027	F
			2	A, B, C	156	301	0.517	157	159	0.6	1.2	24.616	C
	Exit	1	1	(A, B, C, D)	466			440	459	0.0	4.3	15.156	C
					427			427	422	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	726	730	0.995	709	705	2.3	11.1	40.836	E
			2	B, C, D	739	729	1.013	722	710	2.5	11.3	41.563	E
		2	1	(A, B, C, D)	1486			1465	1487	0.0	2.9	2.328	A
	Exit	1	1		487			487	496	0.1	0.1	0.759	A
			2		485			485	493	0.1	0.1	0.747	A
		2	1										

		2	1		972			970	988	0.9	1.1	3.711	A
		3	1		970			970	988	0.0	0.0	0.000	A

## 08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	518	532	0.974	517	521	3.5	3.7	25.126	D
			2	A, C, D	226	536	0.421	226	228	0.8	0.9	13.405	B
		2	1	(A, B, C, D)	794			744	749	17.8	33.0	129.915	F
	Exit	1	1		711			711	713	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	480	723	0.663	481	494	1.5	1.5	11.807	B
			2	A, B, D	604	736	0.820	604	617	3.1	2.7	16.799	C
	Exit	1	1		797			791	802	2.2	3.0	11.843	B
			2		793			786	803	2.1	3.0	11.855	B
		2	1		1577			1575	1604	2.3	2.5	5.407	A
			3	1		1575			1575	1604	0.0	0.0	0.000
C - Water Eaton Road	Entry	1	1	D	295	304	0.973	293	292	6.6	7.5	89.657	F
			2	A, B, C	156	302	0.516	157	155	1.2	1.3	29.628	D
		2	1	(A, B, C, D)	465			451	452	4.3	10.3	67.518	F
	Exit	1	1		423			423	424	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	724	731	0.991	715	724	11.1	13.2	61.434	F
			2	B, C, D	729	730	0.998	719	727	11.3	13.5	62.435	F
		2	1	(A, B, C, D)	1486			1453	1469	2.9	10.3	17.121	C
	Exit	1	1		491			490	503	0.1	0.2	0.926	A
			2		499			498	505	0.1	0.2	0.925	A
		2	1		988			987	1009	1.1	1.1	3.780	A
			3	1		987			987	1009	0.0	0.0	0.000

## 08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	511	586	0.873	514	517	3.7	3.0	23.469	C
			2	A, C, D	221	589	0.375	222	224	0.9	0.6	12.294	B
		2	1	(A, B, C, D)	661			732	737	33.0	14.7	113.881	F
	Exit	1	1		614			614	628	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	359	734	0.489	359	378	1.5	0.9	8.417	A
			2	A, B, D	519	749	0.694	520	530	2.7	1.5	11.431	B
	Exit	1	1		724			729	774	3.0	1.4	9.887	A
			2		728			733	766	3.0	1.4	10.012	B
		2	1		1462			1463	1542	2.5	2.0	5.288	A
			3	1		1463			1463	1542	0.0	0.0	0.000
C - Water Eaton Road	Entry	1	1	D	269	370	0.728	281	294	7.5	3.3	62.712	F
			2	A, B, C	144	369	0.391	145	151	1.3	0.7	21.635	C
		2	1	(A, B, C, D)	386			414	426	10.3	1.8	41.685	E
	Exit	1	1		372			372	394	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	603	760	0.793	626	670	13.2	3.0	38.323	E
			2	B, C, D	604	760	0.795	627	675	13.5	3.2	39.051	E
		2	1	(A, B, C, D)	1195			1207	1263	10.3	0.4	8.932	A
	Exit	1	1		426			425	445	0.2	0.1	0.680	A
			2		430			430	447	0.2	0.1	0.668	A
		2	1		856			855	893	1.1	0.9	3.580	A
			3	1		855			855	893	0.0	0.0	0.000

## 08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	381	655	0.582	383	430	3.0	1.2	14.783	B
			2	A, C, D	168	659	0.255	169	186	0.6	0.4	8.656	A
		2	1	(A, B, C, D)	538			549	608	14.7	0.5	19.576	C
	Exit	1	1		494			494	507	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	293	759	0.385	293	309	0.9	0.5	6.714	A
			2	A, B, D	439	778	0.563	440	453	1.5	0.9	8.860	A
	Exit	1	1		565			565	606	1.4	0.3	2.700	A
			2		568			569	609	1.4	0.3	2.665	A
		2	1		1134			1134	1219	2.0	1.2	4.319	A
			3	1		1134			1134	1219	0.0	0.0	0.000
C - Water Eaton Road	Entry	1	1	D	206	425	0.485	207	226	3.3	1.0	23.934	C
			2	A, B, C	110	421	0.262	110	117	0.7	0.4	12.958	B
		2	1	(A, B, C, D)	316			317	333	1.8	0.0	2.342	A
	Exit	1	1		299			299	314	0.0	0.0	0.000	A
		1	1	A, B	496	795	0.624	495	508	3.0	1.3	10.033	B

D - B4034 Buckingham Road	Entry		2	B, C, D	514	795	0.646	514	530	3.2	1.3	10.217	B
		2	1	(A, B, C, D)	1010			1010	1023	0.4	0.0	0.185	A
	Exit	1	1		345			345	368	0.1	0.0	0.304	A
			2		341			341	364	0.1	0.0	0.313	A
		2	1		685			685	733	0.9	0.6	3.213	A
			3	1		685			685	733	0.0	0.0	0.000

# 2033 Base + CD + D - ST, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	113.36	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D21	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	738	100.000
B - B4034		ONE HOUR	✓	1002	100.000
C - Water Eaton Road		ONE HOUR	✓	434	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	1424	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	505	122	112
	B - B4034	392	0	57	552
	C - Water Eaton Road	116	32	0	286
	D - B4034 Buckingham Road	167	1030	225	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4
	C - Water Eaton Road	1	4	0	1
	D - B4034 Buckingham Road	0	2	1	0

## Results



## Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	161.79	40.5	F	680	1020
B - B4034	15.40	5.1	C	919	1378
C - Water Eaton Road	187.46	27.5	F	394	590
D - B4034 Buckingham Road	136.01	67.9	F	1305	1957

## Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	560	140	959	560	554	505	0.0	2.0	12.405	B
B - B4034	770	192	345	769	775	1171	0.0	1.8	7.740	A
C - Water Eaton Road	318	79	811	318	323	302	0.0	1.4	15.647	C
D - B4034 Buckingham Road	1066	266	405	1059	1068	721	0.0	3.0	9.210	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	660	165	1154	653	657	605	2.0	5.2	23.663	C
B - B4034	894	223	412	895	917	1405	1.8	2.5	9.723	A
C - Water Eaton Road	385	96	946	385	385	360	1.4	3.1	25.988	D
D - B4034 Buckingham Road	1277	319	487	1272	1283	845	3.0	6.4	15.973	C

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	811	203	1316	737	743	716	5.2	23.6	74.241	F
B - B4034	1101	275	461	1103	1125	1582	2.5	4.3	14.862	B
C - Water Eaton Road	473	118	1149	426	428	415	3.1	15.9	87.959	F
D - B4034 Buckingham Road	1565	391	574	1458	1457	1000	6.4	38.8	61.516	F

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	822	206	1320	747	756	726	23.6	40.4	158.261	F
B - B4034	1103	276	462	1100	1135	1602	4.3	5.0	15.398	C
C - Water Eaton Road	474	118	1151	434	438	411	15.9	27.4	187.463	F
D - B4034 Buckingham Road	1565	391	587	1458	1474	996	38.8	68.0	136.007	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	669	167	1280	716	730	632	40.4	26.0	161.786	F
B - B4034	897	224	457	900	940	1552	5.0	2.5	10.897	B
C - Water Eaton Road	391	98	963	445	465	394	27.4	11.2	141.073	F
D - B4034 Buckingham Road	1284	321	498	1413	1461	908	68.0	26.6	111.538	F

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	558	139	977	603	652	521	26.0	3.9	58.170	F
B - B4034	750	187	363	749	780	1224	2.5	1.6	8.185	A
C - Water Eaton Road	323	81	801	336	367	311	11.2	1.7	37.694	E
D - B4034 Buckingham Road	1069	267	413	1085	1181	725	26.6	2.9	23.972	C

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	560	140	959	560	554	505	0.0	2.0	12.405	B
B - B4034	770	192	345	769	775	1171	0.0	1.8	7.740	A
C - Water Eaton Road	318	79	811	318	323	302	0.0	1.4	15.647	C
D - B4034 Buckingham Road	1066	266	405	1059	1068	721	0.0	3.0	9.210	A

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	382	643	0.595	383	379	0.0	1.3	11.980	B
			2	A, C, D	177	646	0.275	177	175	0.0	0.4	7.707	A
		2	1	(A, B, C, D)	560			560	561	0.0	0.3	1.754	A
	Exit	1	1		505			505	506	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	310	760	0.408	310	316	0.0	0.5	6.612	A
			2	A, B, D	460	775	0.593	458	460	0.0	1.2	8.497	A
	Exit	1	1		586			585	589	0.0	0.3	1.754	A
			2		588			587	591	0.0	0.3	1.735	A
		2	1		1173			1171	1174	0.0	1.5	4.215	A
		3	1		1171			1171	1174	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	212	412	0.516	212	212	0.0	1.1	17.563	C
			2	A, B, C	106	409	0.258	106	111	0.0	0.3	11.909	B
	Exit	1	1		318			318	329	0.0	0.0	0.007	A
					302			302	303	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	527	792	0.666	524	528	0.0	1.5	9.013	A
			2	B, C, D	539	794	0.679	535	540	0.0	1.5	9.402	A
		2	1	(A, B, C, D)	1066			1066	1080	0.0	0.0	0.000	A
	Exit	1	1		362			361	366	0.0	0.0	0.322	A
			2		362			361	364	0.0	0.1	0.321	A
		2	1		723			721	726	0.0	0.7	3.232	A
		3	1		721			726	0.0	0.0	0.000	A	

## 07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	447	583	0.767	448	449	1.3	2.1	16.566	C
			2	A, C, D	205	585	0.351	205	208	0.4	0.6	9.670	A
		2	1	(A, B, C, D)	660			652	661	0.3	2.5	9.215	A
	Exit	1	1		605			605	602	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	371	736	0.504	372	386	0.5	0.8	8.034	A
			2	A, B, D	523	755	0.693	523	531	1.2	1.7	10.928	B
	Exit	1	1		701			705	706	0.3	0.8	4.356	A
			2		694			698	704	0.3	0.8	4.377	A
		2	1		1403			1405	1409	1.5	1.8	4.789	A
		3	1		1405			1405	1409	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	251	366	0.684	251	252	1.1	2.4	30.650	D
			2	A, B, C	135	364	0.370	134	133	0.3	0.5	15.006	C
	Exit	1	1		385			385	391	0.0	0.1	0.640	A
					360			360	363	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	637	766	0.831	634	637	1.5	3.2	15.735	C
			2	B, C, D	640	765	0.837	638	646	1.5	3.2	16.172	C
		2	1	(A, B, C, D)	1277			1277	1296	0.0	0.0	0.012	A
	Exit	1	1		420			421	430	0.0	0.1	0.506	A
			2		423			424	433	0.1	0.0	0.498	A
		2	1		844			845	862	0.7	0.8	3.475	A
		3	1		845			862	0.0	0.0	0.000	A	

## 08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	507	531	0.956	507	510	2.1	3.5	23.083	C
			2	A, C, D	230	534	0.430	230	233	0.6	0.8	12.374	B
		2	1	(A, B, C, D)	811			737	749	2.5	19.2	54.265	F
	Exit	1	1		716			716	717	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	484	720	0.672	485	502	0.8	1.5	12.138	B
			2	A, B, D	616	737	0.836	618	623	1.7	2.8	17.001	C
	Exit	1	1		798			794	793	0.8	3.0	10.651	B
			2		793			791	792	0.8	3.0	10.675	B
		2	1		1585			1582	1582	1.8	2.5	5.357	A
		3	1		1582			1582	1582	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	286	296	0.965	281	278	2.4	7.2	73.761	F
			2	A, B, C	144	295	0.487	145	150	0.5	1.2	25.702	D
	Exit	1	1		473			430	450	0.1	7.5	28.369	D
					415			415	417	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	737	735	1.003	722	723	3.2	14.0	51.637	F
			2	B, C, D	753	736	1.023	736	734	3.2	14.5	51.811	F
		2	1	(A, B, C, D)	1565			1490	1547	0.0	10.4	8.724	A
	Exit	1	1		497			497	505	0.1	0.1	0.996	A
2				503			503	511	0.0	0.2	0.984	A	

		2	1		1000			1000	1015	0.8	1.1	3.833	A
		3	1		1000			1000	1015	0.0	0.0	0.000	A

## 08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	513	531	0.966	512	519	3.5	3.7	25.259	D
			2	A, C, D	235	534	0.439	235	236	0.8	1.0	13.768	B
		2	1	(A, B, C, D)	822			748	757	19.2	35.7	136.553	F
	Exit	1	1		726			726	729	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	487	720	0.676	485	508	1.5	1.9	12.578	B
			2	A, B, D	616	737	0.836	615	628	2.8	3.2	17.633	C
		2	1		804			803	814	3.0	2.9	12.965	B
	Exit	1	2		801			800	811	3.0	3.0	12.989	B
			2	1		1603			1602	1624	2.5	2.6	5.464
		3	1		1602			1602	1624	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	283	295	0.960	284	288	7.2	8.3	100.734	F
			2	A, B, C	147	294	0.499	150	150	1.2	1.2	31.033	D
		2	1	(A, B, C, D)	474			430	442	7.5	18.0	110.261	F
	Exit	1	1		411			411	422	0.0	0.0	0.000	A
	D - B4034 Buckingham Road	Entry	1	1	A, B	727	732	0.994	724	733	14.0	17.1	80.037
2				B, C, D	739	732	1.010	734	741	14.5	17.4	80.107	F
2			1	(A, B, C, D)	1565			1466	1499	10.4	33.4	55.388	F
Exit			1	1		505			504	514	0.1	0.2	0.979
		2			493			492	514	0.2	0.2	0.987	A
		2	1		997			996	1028	1.1	1.1	3.825	A
3		1		996			996	1028	0.0	0.0	0.000	A	

## 08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	488	543	0.900	489	503	3.7	3.2	24.570	C
			2	A, C, D	225	545	0.413	228	227	1.0	0.7	13.519	B
		2	1	(A, B, C, D)	669			713	727	35.7	22.1	140.929	F
	Exit	1	1		632			632	652	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	376	725	0.520	377	401	1.9	0.9	9.104	A
			2	A, B, D	521	739	0.705	523	539	3.2	1.6	12.207	B
		2	1		769			776	798	2.9	2.2	11.833	B
	Exit	1	2		770			775	800	3.0	2.2	11.751	B
			2	1		1551			1552	1600	2.6	2.2	5.359
		3	1		1552			1552	1600	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	282	360	0.782	297	309	8.3	4.9	78.663	F
			2	A, B, C	143	358	0.400	147	155	1.2	0.8	24.479	C
		2	1	(A, B, C, D)	391			425	449	18.0	5.6	84.522	F
	Exit	1	1		394			394	407	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	666	762	0.874	699	727	17.1	9.2	67.584	F
			2	B, C, D	678	760	0.893	714	734	17.4	9.2	67.659	F
		2	1	(A, B, C, D)	1284			1344	1396	33.4	8.3	45.796	E
		Exit	1	1		451			451	470	0.2	0.1	0.806
	2				458			458	475	0.2	0.1	0.791	A
	2		1		909			908	946	1.1	0.9	3.670	A
	3	1		908			908	946	0.0	0.0	0.000	A	

## 08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	409	637	0.643	414	450	3.2	1.6	17.993	C
			2	A, C, D	188	642	0.292	189	202	0.7	0.3	9.960	A
		2	1	(A, B, C, D)	558			597	644	22.1	2.0	43.330	E
	Exit	1	1		521			521	538	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	299	757	0.395	299	316	0.9	0.6	6.950	A
			2	A, B, D	450	769	0.585	450	463	1.6	1.0	9.014	A
		2	1		609			611	670	2.2	0.4	5.617	A
	Exit	1	2		608			612	676	2.2	0.4	5.561	A
			2	1		1223			1224	1349	2.2	1.4	4.730
		3	1		1224			1224	1349	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	216	415	0.521	219	245	4.9	1.3	34.074	D
			2	A, B, C	116	413	0.281	117	122	0.8	0.4	15.224	C
		2	1	(A, B, C, D)	323			332	351	5.6	0.1	12.929	B
	Exit	1	1		311			311	336	0.0	0.0	0.000	A
		1	1	A, B	526	790	0.665	534	583	9.2	1.3	21.921	C

D - B4034 Buckingham Road	Entry		2	B, C, D	544	791	0.688	551	598	9.2	1.6	21.963	C
		2	1	(A, B, C, D)	1069			1070	1118	8.3	0.0	4.009	A
	Exit	1	1		367			367	388	0.1	0.0	0.333	A
			2		357			357	386	0.1	0.0	0.341	A
		2	1		723			725	775	0.9	0.6	3.265	A
			3	1		725			725	775	0.0	0.0	0.000

<b>Junctions 9</b>
<b>ARCADY 9 - Roundabout Module</b>
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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**Filename:** J1- Post Calibration - Two lane Exits B4034 PM with taper\_V4.3 ST.j9  
**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J1  
**Report generation date:** 28/01/2021 16:04:58

- »2033 Base + CD + D, PM
- »2033 Base + CD + D with TP, PM
- »2033 Base + CD + D - ST, PM

### Summary of junction performance

PM					
Set ID	Queue (Veh)	Delay (s)	RFC	LOS	
[Lane Simulation] - 2033 Base + CD + D					
A - Sherwood Drive	29.9	111.96		F	D16
B - B4034	156.3	372.09		F	
C - Water Eaton Road	30.9	206.97		F	
D - B4034 Buckingham Road	3.5	12.27		B	
[Lane Simulation] - 2033 Base + CD + D with TP					
A - Sherwood Drive	30.5	115.95		F	D18
B - B4034	145.9	346.35		F	
C - Water Eaton Road	27.2	200.12		F	
D - B4034 Buckingham Road	3.3	11.54		B	
[Lane Simulation] - 2033 Base + CD + D - ST					
A - Sherwood Drive	35.7	130.20		F	D22
B - B4034	177.1	440.52		F	
C - Water Eaton Road	32.5	240.46		F	
D - B4034 Buckingham Road	3.5	12.10		B	

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.*

### File summary

#### File Description

Title	Buckingham Road / Sherwood Drive / Water Eaton Road
Location	
Site number	1
Date	26/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
Description	

### Units

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

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓		✓	1235386999	168	58.30

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D22	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

### Analysis Set Details

ID	Use Lane Simulation	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	✓	D16,D18,D22	100.000	100.000



# 2033 Base + CD + D, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	208.46	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Sherwood Drive	
B	B4034	
C	Water Eaton Road	
D	B4034 Buckingham Road	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Sherwood Drive	3.80	6.00	28.0	13.3	31.4	36.0	
B - B4034	6.00	6.40	0.5	13.6	31.4	29.0	
C - Water Eaton Road	3.50	7.00	52.9	10.8	31.4	33.0	
D - B4034 Buckingham Road	3.40	6.70	118.7	14.3	31.4	33.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Sherwood Drive	Direct		50
B - B4034	None		
C - Water Eaton Road	Direct		-150
D - B4034 Buckingham Road	None		

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	0.623	1658
B - B4034	0.674	1816
C - Water Eaton Road	0.668	1685
D - B4034 Buckingham Road	0.686	1890

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

### Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
A - Sherwood Drive	Evenly split	10.00
B - B4034	Evenly split	10.00

C - Water Eaton Road	Evenly split	10.00
D - B4034 Buckingham Road	Evenly split	10.00

## Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Bottleneck capacity (PCU/hr)	Bottleneck type	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
A - Sherwood Drive	Entry	1	1	B	✓	4.00				0	99999	
			2	A, C, D	✓	4.00				0	99999	
	Exit	1	1	(A, B, C, D)		Infinity				0	99999	
			1			Infinity				0	99999	
B - B4034	Entry	1	1	C, D		Infinity				0	99999	
			2	A, B, D		Infinity				0	99999	
	Exit	1	1		✓	15.00				0	99999	
			2		✓	15.00				0	99999	
	Exit	2	1		✓	3.00	✓	1800	Random	0	99999	
			3	1		Infinity				0	99999	
C - Water Eaton Road	Entry	1	1	D	✓	10.00				0	99999	
			2	A, B, C	✓	10.00				0	99999	
	Exit	1	1	(A, B, C, D)		Infinity				0	99999	
			1			Infinity				0	99999	
D - B4034 Buckingham Road	Entry	1	1	A, B	✓	20.00				0	99999	
			2	B, C, D	✓	20.00				0	99999	
	Exit	1	1	(A, B, C, D)		Infinity				0	99999	
			1		✓	8.00				0	99999	
	Exit	2	1		✓	8.00				0	99999	
			3	1		✓	3.00	✓	1800	Random	0	99999
Exit	3	1			Infinity				0	99999		

## Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	Entry	1	1	0.312	829
			2	0.312	829
B - B4034	Entry	1	1	0.337	908
			2	0.337	908
C - Water Eaton Road	Entry	1	1	0.334	842
			2	0.334	842
D - B4034 Buckingham Road	Entry	1	1	0.343	945
			2	0.343	945

## Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			Sherwood Drive	B4034	Water Eaton Road	B4034 Buckingham Road
A - Sherwood Drive	1	1		✓		
		2	✓		✓	✓
B - B4034	1	1			✓	✓
		2	✓	✓		✓
C - Water Eaton Road	1	1				✓
		2	✓	✓	✓	
D - B4034 Buckingham Road	1	1	✓	✓		
		2		✓	✓	✓
		2	✓	✓	✓	✓

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

--	--	--	--	--	--	--	--

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	771	100.000
B - B4034		ONE HOUR	✓	1552	100.000
C - Water Eaton Road		ONE HOUR	✓	464	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	912	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	462	133	177
	B - B4034	502	1	17	1032
	C - Water Eaton Road	104	68	0	292
	D - B4034 Buckingham Road	121	582	206	3

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0
	D - B4034 Buckingham Road	0	3	0	0

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	111.96	29.9	F	704	1056
B - B4034	372.09	156.3	F	1422	2132
C - Water Eaton Road	206.97	30.9	F	423	635
D - B4034 Buckingham Road	12.27	3.5	B	836	1254

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	581	145	635	586	575	546	0.0	1.8	12.177	B
B - B4034	1174	294	390	1171	1171	830	0.0	4.1	12.761	B
C - Water Eaton Road	345	86	1293	342	339	268	0.0	1.8	16.028	C
D - B4034 Buckingham Road	674	169	508	674	692	1130	0.0	1.3	6.863	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	684	171	768	690	680	655	1.8	3.6	18.493	C
B - B4034	1392	348	463	1373	1368	995	4.1	14.9	31.041	D
C - Water Eaton Road	418	105	1523	410	408	314	1.8	5.0	33.622	D
D - B4034 Buckingham Road	815	204	607	816	824	1322	1.3	1.8	8.221	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	845	211	939	806	789	699	3.6	18.1	55.291	F
B - B4034	1692	423	555	1426	1444	1184	14.9	85.2	129.968	F
C - Water Eaton Road	510	127	1598	462	455	382	5.0	19.0	105.774	F
D - B4034 Buckingham Road	1000	250	638	1000	1016	1416	1.8	3.2	11.189	B

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	845	211	943	811	806	713	18.1	29.9	111.958	F
B - B4034	1694	424	554	1428	1442	1201	85.2	156.3	308.778	F
C - Water Eaton Road	517	129	1608	473	465	373	19.0	30.9	204.423	F
D - B4034 Buckingham Road	1013	253	647	1009	1022	1432	3.2	3.5	12.268	B

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	689	172	776	740	778	688	29.9	8.2	74.362	F
B - B4034	1403	351	471	1470	1471	1041	156.3	143.4	372.093	F
C - Water Eaton Road	407	102	1618	447	449	322	30.9	21.6	206.971	F
D - B4034 Buckingham Road	822	205	644	821	841	1424	3.5	2.2	8.809	A

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	582	145	653	586	610	646	8.2	2.0	18.133	C
B - B4034	1173	293	395	1475	1524	844	143.4	59.9	234.763	F
C - Water Eaton Road	343	86	1599	370	388	271	21.6	11.6	122.116	F
D - B4034 Buckingham Road	692	173	608	691	705	1362	2.2	1.5	7.763	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

## 16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	352	624	0.564	353	347	0.0	1.1	11.989	B
			2	A, C, D	231	627	0.368	233	229	0.0	0.5	9.077	A
		2	1	(A, B, C, D)	581			583	582	0.0	0.1	1.341	A
	Exit	1	1		546			546	535	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	533	764	0.697	531	531	0.0	1.6	11.157	B
			2	A, B, D	642	768	0.836	640	640	0.0	2.5	14.082	B
		1	1		419			418	421	0.0	0.0	0.429	A
	Exit	1	2		413			413	424	0.0	0.1	0.437	A
			2	1		831			830	842	0.0	0.7	3.374
		3	1		830			830	842	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	219	406	0.540	217	214	0.0	1.3	18.043	C
			2	A, B, C	126	406	0.310	126	125	0.0	0.5	12.245	B
	Exit	1	1	(A, B, C, D)	345			345	346	0.0	0.0	0.103	A
			1	1		268			268	264	0.0	0.0	0.000
D - B4034 Buckingham Road	Entry	1	1	A, B	322	756	0.426	320	328	0.0	0.6	6.653	A
			2	B, C, D	353	760	0.464	353	364	0.0	0.7	7.051	A
		2	1	(A, B, C, D)	674			674	698	0.0	0.0	0.000	A
	Exit	1	1		558			559	565	0.0	0.1	1.372	A
			2		570			571	565	0.0	0.2	1.363	A
		2	1		1130			1130	1124	0.0	1.4	4.033	A
			3	1		1130			1130	1124	0.0	0.0	0.000

## 17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	408	582	0.701	411	409	1.1	1.7	15.050	C	
			2	A, C, D	280	585	0.479	279	271	0.5	0.9	11.214	B	
		2	1	(A, B, C, D)	684			688	684	0.1	1.0	4.933	A	
	Exit	1	1		655			655	641	0.0	0.0	0.000	A	
B - B4034	Entry	1	1	C, D	679	741	0.915	668	657	1.6	6.8	28.507	D	
			2	A, B, D	714	744	0.959	705	711	2.5	8.1	33.377	D	
	Exit	1	1		491			490	494	0.0	0.1	0.848	A	
			2		504			504	504	0.1	0.1	0.823	A	
		2	1		995			995	997	0.7	1.0	3.738	A	
			3	1		995			995	997	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	263	328	0.801	261	258	1.3	3.6	39.509	E	
			2	A, B, C	151	328	0.459	150	150	0.5	0.9	18.524	C	
			2	1	(A, B, C, D)	418			414	419	0.0	0.5	1.447	A

Exit	1	1		314			314	315	0.0	0.0	0.000	A	
D - B4034 Buckingham Road	Entry	1	1	A, B	393	721	0.545	393	393	0.6	0.8	7.872	A
		2	2	B, C, D	422	724	0.583	423	431	0.7	1.0	8.539	A
		2	1	(A, B, C, D)	815			815	826	0.0	0.0	0.000	A
	Exit	1	1		661			658	659	0.1	0.7	2.844	A
		2	2		666			665	662	0.2	0.7	2.840	A
		2	1		1323			1322	1320	1.4	1.8	4.508	A
3	1		1322			1322	1320	0.0	0.0	0.000	A		

## 17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	478	528	0.906	481	473	1.7	3.0	21.284	C
		2	2	A, C, D	326	530	0.615	326	316	0.9	1.4	15.570	C
		2	1	(A, B, C, D)	845			804	796	1.0	13.8	36.120	E
B - B4034	Exit	1	1		699			699	698	0.0	0.0	0.000	A
		1	1	C, D	847	709	1.194	712	720	6.8	41.6	126.164	F
		2	2	A, B, D	845	714	1.184	714	724	8.1	43.5	133.728	F
	Entry	1	1		596			594	600	0.1	0.5	1.860	A
		2	2		594			593	597	0.1	0.4	1.894	A
		2	1		1186			1184	1195	1.0	1.6	4.232	A
C - Water Eaton Road	Exit	3	1		1184			1184	1195	0.0	0.0	0.000	A
		1	1	D	293	303	0.968	284	282	3.6	7.6	80.582	F
		2	2	A, B, C	180	303	0.595	178	172	0.9	1.8	32.718	D
	Entry	2	1	(A, B, C, D)	510			473	474	0.5	9.5	40.954	E
		1	1		382			382	376	0.0	0.0	0.000	A
		1	1	A, B	485	710	0.683	486	488	0.8	1.4	10.817	B
D - B4034 Buckingham Road	Entry	2	2	B, C, D	515	714	0.721	515	528	1.0	1.8	11.529	B
		2	1	(A, B, C, D)	1000			1000	1022	0.0	0.0	0.000	A
		1	1		705			703	711	0.7	1.1	4.580	A
	Exit	1	2		717			715	716	0.7	1.1	4.575	A
		2	1		1417			1416	1426	1.8	2.0	4.857	A
		3	1		1416			1416	1426	0.0	0.0	0.000	A

## 17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	486	526	0.924	488	487	3.0	3.1	23.755	C
		2	2	A, C, D	327	529	0.618	324	318	1.4	1.8	17.409	C
		2	1	(A, B, C, D)	845			812	808	13.8	24.9	90.712	F
B - B4034	Exit	1	1		713			713	705	0.0	0.0	0.000	A
		1	1	C, D	843	708	1.185	709	718	41.6	77.1	305.659	F
		2	2	A, B, D	852	714	1.194	719	724	43.5	79.2	311.853	F
	Entry	1	1		596			595	610	0.5	0.3	1.971	A
		2	2		605			605	608	0.4	0.3	1.965	A
		2	1		1200			1201	1218	1.6	1.4	4.301	A
C - Water Eaton Road	Exit	3	1		1201			1201	1218	0.0	0.0	0.000	A
		1	1	D	301	299	1.006	293	288	7.6	8.8	100.530	F
		2	2	A, B, C	181	299	0.606	180	177	1.8	1.9	39.357	E
	Entry	2	1	(A, B, C, D)	517			482	470	9.5	20.2	126.263	F
		1	1		373			373	375	0.0	0.0	0.000	A
		1	1	A, B	488	706	0.690	487	495	1.4	1.6	11.887	B
D - B4034 Buckingham Road	Entry	2	2	B, C, D	525	711	0.738	522	527	1.8	1.9	12.625	B
		2	1	(A, B, C, D)	1013			1013	1024	0.0	0.0	0.000	A
		1	1		725			724	726	1.1	1.0	5.090	A
	Exit	1	2		709			708	713	1.1	1.1	5.232	A
		2	1		1432			1432	1439	2.0	1.9	4.917	A
		3	1		1432			1432	1439	0.0	0.0	0.000	A

## 17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	449	579	0.775	451	468	3.1	2.2	19.714	C
		2	2	A, C, D	288	582	0.495	289	310	1.8	1.0	14.220	B
		2	1	(A, B, C, D)	689			737	771	24.9	5.0	57.361	F
B - B4034	Exit	1	1		688			688	683	0.0	0.0	0.000	A
		1	1	C, D	704	739	0.955	736	735	77.1	70.6	366.755	F
		2	2	A, B, D	699	742	0.943	733	736	79.2	72.8	377.399	F
	Entry	1	1		523			521	538	0.3	0.2	1.166	A
		2	2		522			521	538	0.3	0.2	1.160	A
		2	1		1042			1041	1077	1.4	1.2	3.907	A

		3	1		1041			1041	1077	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	269	296	0.909	279	283	8.8	6.9	99.602	F
			2	A, B, C	162	296	0.545	167	166	1.9	1.4	37.648	E
		2	1	(A, B, C, D)	407			431	439	20.2	13.3	130.817	F
	Exit	1	1		322			322	337	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	395	710	0.556	395	401	1.6	1.0	8.527	A
			2	B, C, D	427	712	0.599	426	440	1.9	1.1	9.065	A
		2	1	(A, B, C, D)	822			822	836	0.0	0.0	0.000	A
	Exit	1	1		709			708	719	1.0	1.1	5.143	A
			2		713			712	725	1.1	1.1	5.105	A
		2	1		1421			1424	1444	1.9	1.8	4.881	A
		3	1		1424			1424	1444	0.0	0.0	0.000	A

## 18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	349	620	0.564	350	367	2.2	1.3	13.536	B
			2	A, C, D	233	622	0.375	236	243	1.0	0.5	10.268	B
		2	1	(A, B, C, D)	582			583	604	5.0	0.2	6.165	A
	Exit	1	1		646			646	667	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	577	763	0.757	727	759	70.6	29.0	231.965	F
			2	A, B, D	596	766	0.777	748	764	72.8	30.9	237.545	F
	Exit	1	1		432			433	442	0.2	0.0	0.518	A
			2		411			411	435	0.2	0.0	0.518	A
		2	1		844			844	879	1.2	0.7	3.469	A
3	1		844			844	879	0.0	0.0	0.000	A		
C - Water Eaton Road	Entry	1	1	D	231	302	0.764	241	250	6.9	4.6	80.582	F
			2	A, B, C	130	302	0.429	129	138	1.4	1.0	27.803	D
	2	1	(A, B, C, D)	343			360	377	13.3	6.1	67.244	F	
Exit	1	1		271			271	278	0.0	0.0	0.000	A	
D - B4034 Buckingham Road	Entry	1	1	A, B	327	722	0.454	326	336	1.0	0.7	7.488	A
			2	B, C, D	365	725	0.502	365	369	1.1	0.8	8.011	A
		2	1	(A, B, C, D)	692			692	702	0.0	0.0	0.000	A
	Exit	1	1		679			679	703	1.1	1.0	4.692	A
			2		682			683	703	1.1	0.9	4.659	A
		2	1		1362			1362	1406	1.8	1.9	4.814	A
		3	1		1362			1362	1406	0.0	0.0	0.000	A



# 2033 Base + CD + D with TP, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	197.56	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	765	100.000
B - B4034		ONE HOUR	✓	1540	100.000
C - Water Eaton Road		ONE HOUR	✓	463	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	898	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	462	133	171
	B - B4034	502	1	17	1020
	C - Water Eaton Road	104	68	0	291
	D - B4034 Buckingham Road	116	575	204	3

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0
	D - B4034 Buckingham Road	0	3	0	0

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	115.95	30.5	F	702	1053
B - B4034	346.35	145.9	F	1410	2114
C - Water Eaton Road	200.12	27.2	F	425	637
D - B4034 Buckingham Road	11.54	3.3	B	824	1236

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	573	143	641	573	568	536	0.0	2.1	12.003	B
B - B4034	1146	287	384	1150	1149	829	0.0	4.0	12.554	B
C - Water Eaton Road	344	86	1266	347	345	268	0.0	1.6	16.302	C
D - B4034 Buckingham Road	674	169	504	674	680	1113	0.0	1.3	6.663	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	691	173	764	691	682	638	2.1	3.9	19.191	C
B - B4034	1374	344	455	1361	1362	1001	4.0	13.1	27.637	D
C - Water Eaton Road	412	103	1502	407	403	314	1.6	4.2	30.225	D
D - B4034 Buckingham Road	807	202	598	804	817	1316	1.3	2.0	8.063	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	841	210	932	792	778	706	3.9	19.5	59.969	F
B - B4034	1698	424	542	1428	1447	1182	13.1	79.1	118.479	F
C - Water Eaton Road	510	128	1591	459	455	378	4.2	17.2	92.535	F
D - B4034 Buckingham Road	992	248	646	992	1001	1403	2.0	3.3	11.411	B

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	842	211	938	803	803	708	19.5	30.5	115.947	F
B - B4034	1693	423	552	1433	1444	1192	79.1	145.9	288.137	F
C - Water Eaton Road	515	129	1602	467	468	383	17.2	27.2	178.180	F
D - B4034 Buckingham Road	996	249	649	996	1008	1421	3.3	3.1	11.544	B

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	687	172	763	735	779	669	30.5	8.2	74.879	F
B - B4034	1387	347	479	1460	1465	1022	145.9	130.1	346.347	F
C - Water Eaton Road	423	106	1613	439	442	326	27.2	22.1	200.118	F
D - B4034 Buckingham Road	802	201	632	800	820	1419	3.1	2.1	8.928	A

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	577	144	641	579	600	642	8.2	2.0	16.731	C
B - B4034	1160	290	382	1454	1495	838	130.1	50.3	212.105	F
C - Water Eaton Road	342	86	1571	380	393	265	22.1	10.4	120.443	F
D - B4034 Buckingham Road	673	168	611	672	695	1344	2.1	1.5	7.499	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	347	623	0.557	346	343	0.0	1.3	11.610	B
			2	A, C, D	226	626	0.362	227	225	0.0	0.6	9.094	A
		2	1	(A, B, C, D)	573			573	576	0.0	0.3	1.376	A
	Exit	1	1		536			536	531	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	521	766	0.680	523	521	0.0	1.6	10.965	B
			2	A, B, D	625	770	0.812	627	628	0.0	2.4	13.864	B
		2	1		413			413	417	0.0	0.0	0.403	A
	Exit	2	1		417			417	417	0.0	0.1	0.423	A
			2	1		829			829	831	0.0	0.8	3.369
		3	1		829			829	831	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	215	415	0.519	217	218	0.0	1.2	18.369	C
			2	A, B, C	129	415	0.311	130	127	0.0	0.4	12.469	B
		2	1	(A, B, C, D)	344			344	352	0.0	0.0	0.080	A
	Exit	1	1		268			268	265	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	317	760	0.417	317	320	0.0	0.6	6.443	A
			2	B, C, D	357	759	0.471	357	360	0.0	0.8	6.858	A
		2	1	(A, B, C, D)	674			674	686	0.0	0.0	0.000	A
	Exit	1	1		554			556	557	0.0	0.2	1.319	A
			2		555			556	554	0.0	0.2	1.326	A
		2	1		1112			1113	1106	0.0	1.2	4.021	A
			3	1		1113			1113	1106	0.0	0.0	0.000

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	420	583	0.720	421	414	1.3	1.8	15.062	C
			2	A, C, D	272	586	0.464	270	269	0.6	0.9	11.375	B
		2	1	(A, B, C, D)	691			692	686	0.3	1.2	5.554	A
	Exit	1	1		638			638	636	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	664	744	0.893	660	654	1.6	5.7	25.075	D
			2	A, B, D	710	748	0.950	701	708	2.4	7.4	29.982	D
		2	1		503			503	504	0.0	0.1	0.798	A
	Exit	2	1		497			497	499	0.1	0.1	0.810	A
			2	1		1000			1001	1002	0.8	1.1	3.749
		3	1		1001			1001	1002	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	256	336	0.763	254	251	1.2	3.0	35.334	E
			2	A, B, C	153	336	0.457	153	152	0.4	0.9	18.670	C
		2	1	(A, B, C, D)	412			409	412	0.0	0.3	0.941	A
	Exit	1	1		314			314	314	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	384	724	0.532	383	388	0.6	0.9	7.820	A
			2	B, C, D	422	729	0.579	421	429	0.8	1.1	8.282	A
		2	1	(A, B, C, D)	807			807	819	0.0	0.0	0.000	A
	Exit	1	1		656			658	656	0.2	0.5	2.753	A
			2		655			657	652	0.2	0.5	2.753	A
		2	1		1314			1316	1306	1.2	1.6	4.502	A
			3	1		1316			1316	1306	0.0	0.0	0.000

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	482	530	0.909	480	470	1.8	3.1	21.908	C
			2	A, C, D	314	533	0.588	312	308	0.9	1.5	15.262	C
		2	1	(A, B, C, D)	841			795	786	1.2	14.8	40.448	E
	Exit	1	1		706			706	701	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	850	715	1.189	713	719	5.7	38.6	114.755	F
			2	A, B, D	848	719	1.180	715	728	7.4	40.6	122.145	F
		2	1		589			588	592	0.1	0.3	1.711	A
	Exit	2	1		594			593	594	0.1	0.3	1.704	A
			2	1		1182			1182	1185	1.1	1.3	4.183
		3	1		1182			1182	1185	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	298	306	0.975	286	280	3.0	7.6	75.990	F
			2	A, B, C	174	306	0.570	173	174	0.9	1.7	30.428	D
		2	1	(A, B, C, D)	510			472	476	0.3	7.9	31.555	D
	Exit	1	1		378			378	375	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	479	710	0.675	479	481	0.9	1.6	11.064	B
			2	B, C, D	513	711	0.721	513	520	1.1	1.7	11.731	B
		2	1	(A, B, C, D)	992			992	1006	0.0	0.0	0.000	A

D - B4034 Buckingham Road	Exit	1	1		702			702	707	0.5	0.8	4.080	A
			2		702			701	706	0.5	0.9	4.094	A
	2	1			1403			1403	1412	1.6	1.9	4.764	A
			3	1			1403		1403	1412	0.0	0.0	0.000

## 17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	483	529	0.915	483	486	3.1	3.3	24.218	C	
			2	A, C, D	319	531	0.600	320	318	1.5	1.4	17.049	C	
	Exit	1	1	(A, B, C, D)	842			802	804	14.8	25.8	94.668	F	
			2	1		708			708	709	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	840	711	1.181	710	720	38.6	71.9	284.248	F	
			2	A, B, D	853	715	1.193	723	724	40.6	74.0	291.988	F	
	Exit	1	1		594			594	602	0.3	0.3	1.838	A	
			2	1		596			596	603	0.3	0.3	1.821	A
			3	1		1190			1192	1205	1.3	1.3	4.246	A
	C - Water Eaton Road	Entry	1	1	D	292	302	0.970	292	292	7.6	8.4	99.524	F
2				A, B, C	175	302	0.581	174	176	1.7	1.8	35.493	E	
Exit		1	1	(A, B, C, D)	515			468	471	7.9	17.1	101.483	F	
			2	1		383			383	379	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	481	707	0.680	482	487	1.6	1.4	11.013	B	
			2	B, C, D	515	712	0.723	515	520	1.7	1.7	12.039	B	
	Exit	1	1	(A, B, C, D)	996			996	1007	0.0	0.0	0.000	A	
			2	1		711			712	710	0.8	1.0	5.025	A
			3	1		708			708	719	0.9	1.0	4.974	A
			3	1		1420			1421	1430	1.9	1.9	4.878	A

## 17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	437	584	0.749	441	471	3.3	2.1	19.863	C	
			2	A, C, D	295	586	0.503	295	308	1.4	1.0	13.998	B	
	Exit	1	1	(A, B, C, D)	687			732	772	25.8	5.0	57.854	F	
			2	1		669			669	675	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	696	735	0.948	737	735	71.9	63.8	340.399	F	
			2	A, B, D	691	739	0.934	724	730	74.0	66.3	352.286	F	
	Exit	1	1		511			512	536	0.3	0.1	1.122	A	
			2	1		508			508	533	0.3	0.1	1.119	A
			3	1		1020			1022	1070	1.3	1.0	3.910	A
	C - Water Eaton Road	Entry	1	1	D	273	297	0.919	276	279	8.4	7.1	98.363	F
2				A, B, C	162	297	0.545	163	163	1.8	1.5	33.389	D	
Exit		1	1	(A, B, C, D)	423			435	436	17.1	13.5	126.849	F	
			2	1		326			326	330	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	384	712	0.540	383	392	1.4	1.0	8.611	A	
			2	B, C, D	418	716	0.584	418	428	1.7	1.1	9.217	A	
	Exit	1	1	(A, B, C, D)	802			802	816	0.0	0.0	0.000	A	
			2	1		713			714	718	1.0	0.9	4.998	A
			3	1		708			708	717	1.0	0.9	4.997	A
			3	1		1421			1419	1434	1.9	2.0	4.901	A

## 18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	350	622	0.562	350	362	2.1	1.2	12.976	B	
			2	A, C, D	229	625	0.366	229	238	1.0	0.6	10.076	B	
	Exit	1	1	(A, B, C, D)	577			579	594	5.0	0.2	5.161	A	
B - B4034	Entry	1	1	C, D	573	767	0.745	716	744	63.8	24.2	208.202	F	
			2	A, B, D	587	771	0.760	738	751	66.3	26.1	215.983	F	
	Exit	1	1		418			418	435	0.1	0.0	0.519	A	
			2	1		420			420	435	0.1	0.0	0.518	A
			3	1		839			838	871	1.0	0.8	3.476	A
	C - Water Eaton Road	Entry	1	1	D	236	312	0.756	243	252	7.1	4.5	79.008	F
2				A, B, C	136	312	0.438	137	141	1.5	1.0	28.277	D	
Exit		1	1	(A, B, C, D)	342			372	381	13.5	4.8	65.565	F	

	<b>Exit</b>	1	1		265			265	275	0.0	0.0	0.000	A
<b>D - B4034 Buckingham Road</b>	<b>Entry</b>	1	1	A, B	320	719	0.446	321	331	1.0	0.6	7.237	A
			2	B, C, D	353	724	0.488	352	365	1.1	0.8	7.734	A
		2	1	(A, B, C, D)	673			673	692	0.0	0.0	0.000	A
	<b>Exit</b>	1	1		665			667	691	0.9	0.6	3.994	A
			2		675			676	693	0.9	0.6	3.962	A
		2	1		1343			1344	1385	2.0	1.7	4.722	A
		3	1		1344			1344	1385	0.0	0.0	0.000	A

# 2033 Base + CD + D - ST, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	245.28	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D22	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Sherwood Drive		ONE HOUR	✓	780	100.000
B - B4034		ONE HOUR	✓	1590	100.000
C - Water Eaton Road		ONE HOUR	✓	466	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	935	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	462	133	186
	B - B4034	502	1	17	1070
	C - Water Eaton Road	104	68	0	294
	D - B4034 Buckingham Road	125	600	207	3

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0
	D - B4034 Buckingham Road	0	3	0	0



## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	130.20	35.7	F	716	1074
B - B4034	440.52	177.1	F	1455	2182
C - Water Eaton Road	240.46	32.5	F	426	638
D - B4034 Buckingham Road	12.10	3.5	B	855	1283

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	585	146	660	585	585	554	0.0	2.0	12.123	B
B - B4034	1187	297	403	1197	1191	844	0.0	4.5	13.851	B
C - Water Eaton Road	351	88	1326	352	346	273	0.0	1.7	17.352	C
D - B4034 Buckingham Road	705	176	508	706	712	1170	0.0	1.4	6.909	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	698	174	787	695	694	646	2.0	4.5	20.218	C
B - B4034	1418	354	472	1396	1385	1006	4.5	18.0	35.397	E
C - Water Eaton Road	411	103	1545	405	399	322	1.7	5.2	36.179	E
D - B4034 Buckingham Road	847	212	590	843	860	1357	1.4	2.1	8.452	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	851	213	958	799	793	685	4.5	21.0	63.900	F
B - B4034	1751	438	559	1421	1444	1195	18.0	97.9	148.139	F
C - Water Eaton Road	515	129	1598	463	446	382	5.2	21.2	118.257	F
D - B4034 Buckingham Road	1028	257	616	1027	1041	1448	2.1	3.4	12.101	B

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	865	216	952	811	805	681	21.0	35.7	130.203	F
B - B4034	1741	435	562	1423	1439	1200	97.9	177.1	351.298	F
C - Water Eaton Road	508	127	1604	462	462	381	21.2	32.5	218.610	F
D - B4034 Buckingham Road	1016	254	614	1019	1044	1452	3.4	3.4	11.871	B

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	710	178	793	777	799	657	35.7	11.4	95.183	F
B - B4034	1441	360	504	1442	1454	1066	177.1	176.2	440.521	F
C - Water Eaton Road	422	105	1613	436	444	333	32.5	26.7	240.465	F
D - B4034 Buckingham Road	839	210	611	839	861	1441	3.4	2.0	9.057	A

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	586	147	659	584	622	662	11.4	2.5	21.241	C
B - B4034	1188	297	397	1517	1519	844	176.2	100.7	335.552	F
C - Water Eaton Road	347	87	1639	386	400	274	26.7	14.2	143.579	F
D - B4034 Buckingham Road	698	175	620	700	715	1414	2.0	1.4	7.622	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	343	616	0.557	343	347	0.0	1.2	11.913	B
			2	A, C, D	243	619	0.393	242	238	0.0	0.6	9.219	A
		2	1	(A, B, C, D)	585			586	592	0.0	0.2	1.291	A
	Exit	1	1		554			554	543	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	545	760	0.718	549	549	0.0	1.8	12.217	B
			2	A, B, D	641	764	0.840	647	642	0.0	2.7	15.238	C
		2	1		421			421	430	0.0	0.0	0.428	A
	Exit	2	1		421			421	431	0.0	0.0	0.423	A
			2	1		842			844	857	0.0	0.8	3.381
		3	1		844			844	857	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	222	394	0.562	223	216	0.0	1.3	19.915	C
			2	A, B, C	129	394	0.326	129	129	0.0	0.4	12.864	B
		2	1	(A, B, C, D)	351			350	352	0.0	0.0	0.052	A
	Exit	1	1		273			273	266	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	334	755	0.443	334	337	0.0	0.7	6.742	A
			2	B, C, D	371	758	0.489	371	375	0.0	0.7	7.059	A
		2	1	(A, B, C, D)	705			705	718	0.0	0.0	0.000	A
	Exit	1	1		584			583	581	0.0	0.3	1.565	A
			2		586			587	581	0.0	0.3	1.576	A
		2	1		1170			1170	1156	0.0	1.4	4.132	A
3	1		1170			1170	1156	0.0	0.0	0.000	A		

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	411	576	0.713	412	411	1.2	1.9	15.849	C
			2	A, C, D	285	579	0.492	283	283	0.6	1.0	11.870	B
		2	1	(A, B, C, D)	698			696	698	0.2	1.5	5.952	A
	Exit	1	1		646			646	637	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	699	737	0.950	689	673	1.8	8.2	32.745	D
			2	A, B, D	718	741	0.969	707	712	2.7	9.8	37.885	E
		2	1		511			511	516	0.0	0.1	0.849	A
	Exit	2	1		498			498	511	0.0	0.1	0.852	A
			2	1		1009			1006	1025	0.8	1.2	3.771
		3	1		1006			1006	1025	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	256	320	0.800	254	251	1.3	3.7	41.306	E
			2	A, B, C	151	320	0.472	151	148	0.4	1.0	20.341	C
		2	1	(A, B, C, D)	411			407	411	0.0	0.5	2.240	A
	Exit	1	1		322			322	319	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	407	728	0.560	406	414	0.7	1.0	8.160	A
			2	B, C, D	439	730	0.602	437	447	0.7	1.2	8.722	A
		2	1	(A, B, C, D)	847			847	863	0.0	0.0	0.000	A
	Exit	1	1		685			683	677	0.3	0.7	3.372	A
			2		676			674	675	0.3	0.7	3.376	A
		2	1		1357			1357	1351	1.4	1.7	4.611	A
3	1		1357			1357	1351	0.0	0.0	0.000	A		

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	472	522	0.903	472	468	1.9	3.1	22.079	C
			2	A, C, D	329	524	0.628	327	325	1.0	1.7	16.679	C
		2	1	(A, B, C, D)	851			801	800	1.5	16.2	43.840	E
	Exit	1	1		685			685	688	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	871	709	1.230	707	720	8.2	48.0	144.710	F
			2	A, B, D	880	712	1.234	714	724	9.8	49.9	151.533	F
		2	1		595			594	604	0.1	0.4	2.033	A
	Exit	2	1		604			602	606	0.1	0.4	2.003	A
			2	1		1196			1195	1208	1.2	1.5	4.306
		3	1		1195			1195	1208	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	295	303	0.973	289	277	3.7	8.1	87.245	F
			2	A, B, C	175	303	0.576	174	170	1.0	1.8	33.658	D
		2	1	(A, B, C, D)	515			469	467	0.5	11.3	48.728	E
	Exit	1	1		382			382	375	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	497	719	0.690	495	507	1.0	1.7	11.610	B
			2	B, C, D	531	721	0.736	532	535	1.2	1.7	12.565	B
		2	1	(A, B, C, D)	1028			1028	1047	0.0	0.0	0.000	A

D - B4034 Buckingham Road	Exit	1	1		722			724	722	0.7	1.0	5.029	A
			2		723			724	725	0.7	1.0	5.026	A
	2	1			1448			1448	1445	1.7	2.0	4.895	A
					1448			1448	1445	0.0	0.0	0.000	A

## 17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	479	524	0.913	477	476	3.1	3.3	24.477	C	
			2	A, C, D	338	526	0.643	334	328	1.7	1.8	17.761	C	
				865	(A, B, C, D)			817	806	16.2	30.6	108.504	F	
	Exit	1	1		681			681	689	0.0	0.0	0.000	A	
B - B4034	Entry	1	1	C, D	873	708	1.234	715	721	48.0	87.5	346.651	F	
			2	A, B, D	868	712	1.219	708	718	49.9	89.6	355.936	F	
	Exit	1	1		601			600	613	0.4	0.4	2.028	A	
			2		601			600	610	0.4	0.3	2.048	A	
		2	1			1200			1200	1223	1.5	1.5	4.303	A
						1200			1200	1223	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	294	301	0.976	290	290	8.1	8.7	103.500	F	
			2	A, B, C	173	301	0.576	172	172	1.8	1.9	36.100	E	
	Exit	1	1			508			467	465	11.3	21.9	139.224	F
						381			381	380	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	485	718	0.675	487	503	1.7	1.6	11.682	B	
			2	B, C, D	531	723	0.734	533	541	1.7	1.8	12.045	B	
	2	1			1016			1016	1043	0.0	0.0	0.000	A	
					724			723	728	1.0	1.2	5.312	A	
	Exit	1	2			729			729	729	1.0	1.2	5.308	A
				2	1			1452			1452	1457	2.0	2.1
		1452					1452	1457	0.0	0.0	0.000	A		

## 17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	458	574	0.797	460	475	3.3	2.4	21.079	C	
			2	A, C, D	314	577	0.544	316	324	1.8	1.1	15.299	C	
				710	(A, B, C, D)			772	793	30.6	7.9	76.959	F	
	Exit	1	1		657			657	669	0.0	0.0	0.000	A	
B - B4034	Entry	1	1	C, D	722	729	0.992	724	724	87.5	87.1	438.370	F	
			2	A, B, D	719	731	0.984	718	729	89.6	89.1	442.649	F	
	Exit	1	1		533			533	555	0.4	0.2	1.344	A	
			2		533			533	548	0.3	0.2	1.341	A	
		2	1			1066			1066	1104	1.5	1.1	3.999	A
						1066			1066	1104	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	274	298	0.917	275	281	8.7	7.6	102.515	F	
			2	A, B, C	161	298	0.539	162	164	1.9	1.4	36.776	E	
	Exit	1	1			422			434	438	21.9	17.7	162.685	F
						333			333	338	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	402	721	0.559	404	414	1.6	0.9	8.695	A	
			2	B, C, D	437	723	0.604	435	448	1.8	1.1	9.390	A	
	2	1			839			839	856	0.0	0.0	0.000	A	
					720			722	724	1.2	1.0	5.332	A	
	Exit	1	2			718			719	727	1.2	1.0	5.318	A
				2	1			1441			1441	1452	2.1	2.0
		1441					1441	1452	0.0	0.0	0.000	A		

## 18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Sherwood Drive	Entry	1	1	B	349	618	0.565	347	370	2.4	1.3	13.734	B	
			2	A, C, D	237	620	0.382	237	252	1.1	0.7	10.531	B	
				586	(A, B, C, D)			586	616	7.9	0.6	9.164	A	
	Exit	1	1		662			662	657	0.0	0.0	0.000	A	
B - B4034	Entry	1	1	C, D	597	763	0.783	759	760	87.1	49.4	329.729	F	
			2	A, B, D	590	767	0.770	758	759	89.1	51.4	341.419	F	
	Exit	1	1		419			418	444	0.2	0.1	0.584	A	
			2		428			427	446	0.2	0.0	0.586	A	
		2	1			845			844	891	1.1	0.9	3.498	A
						844			844	891	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	241	289	0.835	244	255	7.6	5.5	86.157	F	
			2	A, B, C	142	289	0.491	142	145	1.4	1.2	29.851	D	
	Exit	2	1	(A, B, C, D)	347			383	390	17.7	7.5	85.608	F	

	<b>Exit</b>	1	1		274			274	278	0.0	0.0	0.000	A
<b>D - B4034 Buckingham Road</b>	<b>Entry</b>	1	1	A, B	334	717	0.465	335	340	0.9	0.7	7.438	A
			2	B, C, D	365	721	0.506	366	374	1.1	0.8	7.789	A
		2	1	(A, B, C, D)	698			698	712	0.0	0.0	0.000	A
	<b>Exit</b>	1	1		701			703	717	1.0	0.9	4.976	A
			2		705			708	717	1.0	0.8	4.995	A
		2	1		1412			1414	1434	2.0	1.9	4.914	A
		3	1		1414			1414	1434	0.0	0.0	0.000	A

<b>Junctions 9</b>	
<b>ARCADY 9 - Roundabout Module</b>	
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Filename: J2 - Buckingham Rd Shenley Rd Newton Rd Miti v2.j9

Path: \\uk.wspgroup.com\central\_data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J2

Report generation date: 28/01/2021 16:18:29

- »2033 Base + CD + D, AM
- »2033 Base + CD + D, PM
- »2033 Base + CD + D with TP, AM
- »2033 Base + CD + D with TP, PM
- »2033 Base + CD + D - ST, AM
- »2033 Base + CD + D - ST, PM

### Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2033 Base + CD + D</b>										
2E - Buckingham Road/ Shenley Road - A - Shenley Road	D15	1.2	10.32	0.55	B	D16	2.4	21.74	0.72	C
2E - Buckingham Road/ Shenley Road - B - Buckingham Road East		1.0	5.46	0.51	A		133.5	448.74	1.28	F
2E - Buckingham Road/ Shenley Road - C - Buckingham Road West		5.9	18.70	0.87	C		1.6	6.98	0.61	A
2W - Newford Road/ Buckingham Road - A - Buckingham Road East		1.8	8.53	0.65	A		5.9	21.13	0.87	C
2W - Newford Road/ Buckingham Road - B - Newton Road		28.7	163.44	1.10	F		1.9	17.26	0.66	C
2W - Newford Road/ Buckingham Road - C - Buckingham Road West		32.5	137.80	1.08	F		0.9	6.05	0.46	A
<b>2033 Base + CD + D with TP</b>										
2E - Buckingham Road/ Shenley Road - A - Shenley Road	D17	1.2	10.17	0.54	B	D18	6.9	54.90	0.94	F
2E - Buckingham Road/ Shenley Road - B - Buckingham Road East		1.0	5.37	0.50	A		120.0	392.42	1.27	F
2E - Buckingham Road/ Shenley Road - C - Buckingham Road West		5.9	18.69	0.87	C		1.5	6.79	0.60	A
2W - Newford Road/ Buckingham Road - A - Buckingham Road East		1.8	8.32	0.64	A		5.9	20.98	0.87	C
2W - Newford Road/ Buckingham Road - B - Newton Road		24.7	140.86	1.08	F		1.9	16.93	0.66	C
2W - Newford Road/ Buckingham Road - C - Buckingham Road West		26.9	117.25	1.06	F		0.8	5.89	0.45	A
<b>2033 Base + CD + D - ST</b>										
2E - Buckingham Road/ Shenley Road - A - Shenley Road	D19	1.2	10.84	0.56	B	D20	0.9	8.04	0.47	A
2E - Buckingham Road/ Shenley Road - B - Buckingham Road East		1.1	5.75	0.54	A		179.6	603.74	1.34	F
2E - Buckingham Road/ Shenley Road - C - Buckingham Road West		5.9	18.93	0.87	C		1.7	7.30	0.63	A
2W - Newford Road/ Buckingham Road - A - Buckingham Road East		2.1	9.22	0.68	A		5.9	20.40	0.87	C
2W - Newford Road/ Buckingham Road - B - Newton Road		41.5	255.30	1.16	F		2.0	17.99	0.67	C
2W - Newford Road/ Buckingham Road - C - Buckingham Road West		57.1	262.31	1.16	F		0.9	6.33	0.49	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

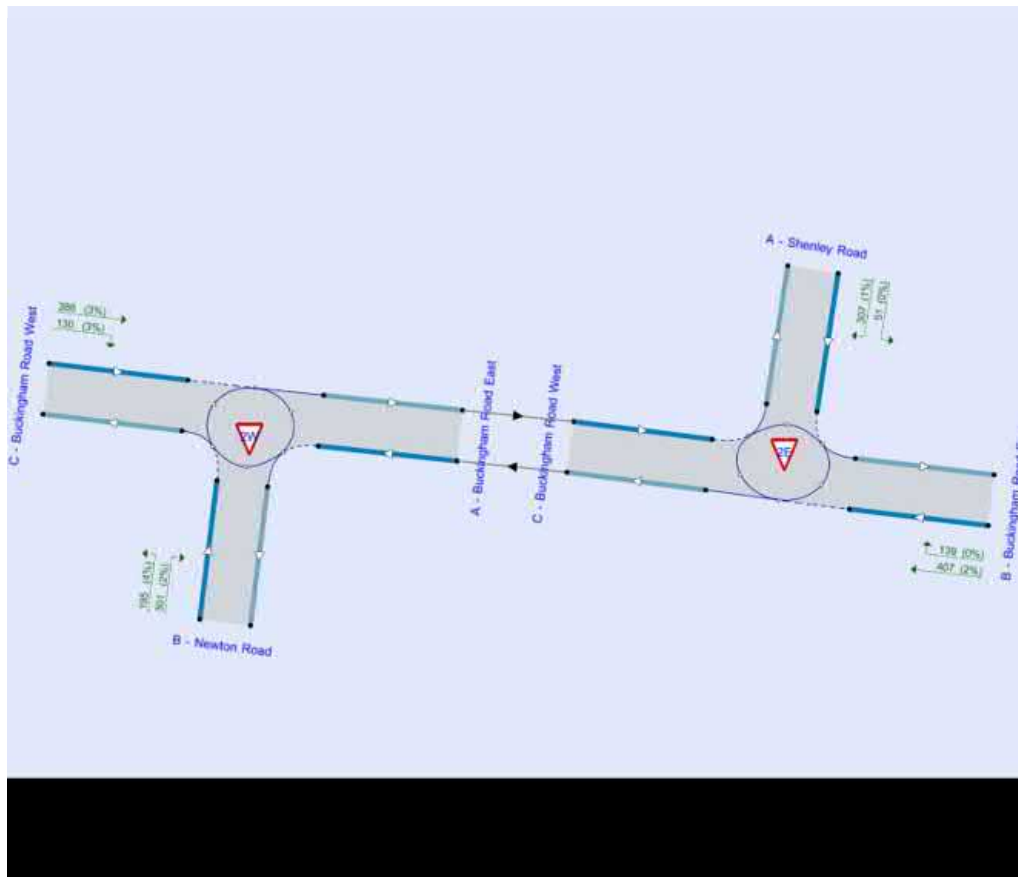
### File summary

#### File Description

Title	Newford Road/ Buckingham Road
Location	51°59'28.63"N, 0°45'16.56"W
Site number	2E
Date	06/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
Description	

### Units

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



The junction diagram reflects the last run of Junctions.

### Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	✓
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	✓
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D11	2026 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D12	2026 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓

### Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D15,D16,D17,D18,D19,D20	100.000	100.000



# 2033 Base + CD + D, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 82% of the total flow for the roundabout for one or more time segments]

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	13.30	B
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	96.76	F

### Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

## Arms

### Arms

Junction	Arm	Name	Description
2E - Buckingham Road/ Shenley Road	A	Shenley Road	
	B	Buckingham Road East	
	C	Buckingham Road West	
2W - Newford Road/ Buckingham Road	A	Buckingham Road East	
	B	Newton Road	
	C	Buckingham Road West	

### Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
2E - Buckingham Road/ Shenley Road	A - Shenley Road	3.10	3.10	7.00	26.2	12.50	6.68	-3.9	
	B - Buckingham Road East	3.40	3.40	8.00	41.6	16.00	15.27	-4.8	
	C - Buckingham Road West	7.30	7.30	8.00	1.3	13.70	7.56	-2.3	✓
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	5.60	5.60	8.00	2.8	11.10	6.60	-0.5	✓
	B - Newton Road	4.10	4.10	8.10	3.3	13.00	10.25	-1.3	✓
	C - Buckingham Road West	2.90	2.90	6.90	16.6	18.90	19.53	-3.6	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Junction	Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	None		
	B - Buckingham Road East	None		
	C - Buckingham Road West	None		
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	None		
	B - Newton Road	None		
	C - Buckingham Road West	Direct	Calibration against queue length	-250

#### Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.741	1319
	B - Buckingham Road East	0.820	1618
	C - Buckingham Road West	0.681	1466
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.608	1275
	B - Newton Road	0.570	995
	C - Buckingham Road West	0.955	1486

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00

2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00
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**Demand overview (Traffic)**

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	380	100.000
	B - Buckingham Road East		ONE HOUR	✓	629	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	527	100.000
	C - Buckingham Road West		ONE HOUR	✓	700	100.000

**Origin-Destination Data**

**Demand (Veh/hr)**

		To			
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West	
2W - Newford Road/ Buckingham Road	From				
		A - Buckingham Road East	0	325	393
		B - Newton Road	478	0	49
		C - Buckingham Road West	660	40	0

**Proportions**

		To			
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West	
From					
		A - Buckingham Road East	0.00	0.45	0.55
		B - Newton Road	0.91	0.00	0.09
		C - Buckingham Road West	0.94	0.06	0.00

**Demand (Veh/hr)**

		To			
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West	
2E - Buckingham Road/ Shenley Road	From				
		A - Shenley Road	0	139	241
		B - Buckingham Road East	153	0	476
		C - Buckingham Road West	419	720	0

**Proportions**

		To			
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West	
From					
		A - Shenley Road	0.00	0.37	0.63
		B - Buckingham Road East	0.24	0.00	0.76
		C - Buckingham Road West	0.37	0.63	0.00

**Vehicle Mix**

**Heavy Vehicle Percentages**

		To			
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West	
2W - Newford Road/ Buckingham Road	From				
		A - Buckingham Road East	0	2	4
		B - Newton Road	2	0	5
		C - Buckingham Road West	2	3	0

**Average PCU Per Veh**

		To			
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West	
From					
		A - Buckingham Road East	1.000	1.021	1.041
		B - Newton Road	1.024	1.000	1.047
		C - Buckingham Road West	1.015	1.029	1.000

**Heavy Vehicle Percentages**

		To			
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West	
2E - Buckingham Road/ Shenley Road	From				
		A - Shenley Road	0	1	1
		B - Buckingham Road East	1	0	4
		C - Buckingham Road West	1	2	0

**Average PCU Per Veh**

		To			
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West	
From					
		A - Shenley Road	1.000	1.008	1.010
		B - Buckingham Road East	1.008	1.000	1.043
		C - Buckingham Road West	1.008	1.020	1.000

**Detailed Demand Data**

**Demand for each time segment**

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	07:30-07:45	286	289
		07:45-08:00	342	345
		08:00-08:15	418	422
		08:15-08:30	418	422
		08:30-08:45	342	345
		08:45-09:00	286	289
	B - Buckingham Road East	07:30-07:45	474	490
		07:45-08:00	565	585
		08:00-08:15	693	716
		08:15-08:30	693	716
		08:30-08:45	565	585
		08:45-09:00	474	490
	C - Buckingham Road West	07:30-07:45	857	871
		07:45-08:00	1024	1040
		08:00-08:15	1254	1274
		08:15-08:30	1254	1274
		08:30-08:45	1024	1040
		08:45-09:00	857	871
A - Buckingham Road East	07:30-07:45	541	558	
	07:45-08:00	645	666	
	08:00-08:15	791	816	
	08:15-08:30	791	816	
	08:30-08:45	645	666	
	08:45-09:00	541	558	

2W - Newford Road/ Buckingham Road	B - Newton Road	07:30-07:45	397	407
		07:45-08:00	474	486
		08:00-08:15	580	595
		08:15-08:30	580	595
		08:30-08:45	474	486
		08:45-09:00	397	407
	C - Buckingham Road West	07:30-07:45	527	535
		07:45-08:00	629	639
		08:00-08:15	771	783
		08:15-08:30	771	783
		08:30-08:45	629	639
		08:45-09:00	527	535

## Results

### Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.55	10.32	1.2	B	349	523
	B - Buckingham Road East	0.51	5.46	1.0	A	577	866
	C - Buckingham Road West	0.87	18.70	5.9	C	1046	1569
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.65	8.53	1.8	A	657	986
	B - Newton Road	1.10	163.44	28.7	F	484	725
	C - Buckingham Road West	1.08	137.80	32.5	F	642	963

### Main Results for each time segment

#### 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	535	906	0.316	284	426	0.0	0.5	5.771	A
	B - Buckingham Road East	474	118	180	1420	0.333	472	639	0.0	0.5	3.787	A
	C - Buckingham Road West	853	213	115	1366	0.624	846	537	0.0	1.6	6.835	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	537	134	30	1217	0.441	534	850	0.0	0.8	5.246	A
	B - Newton Road	397	99	292	801	0.495	393	272	0.0	1.0	8.744	A
	C - Buckingham Road West	527	132	356	1119	0.471	523	329	0.0	0.9	6.007	A

#### 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	643	826	0.414	341	511	0.5	0.7	7.406	A
	B - Buckingham Road East	565	141	216	1391	0.406	565	767	0.5	0.7	4.351	A
	C - Buckingham Road West	1022	255	137	1351	0.756	1017	643	1.6	3.0	10.587	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	643	161	36	1213	0.530	642	1019	0.8	1.1	6.285	A
	B - Newton Road	474	118	351	767	0.618	471	326	1.0	1.6	12.078	B
	C - Buckingham Road West	629	157	428	1051	0.599	627	395	0.9	1.5	8.445	A

#### 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	726	763	0.548	416	590	0.7	1.2	10.317	B
	B - Buckingham Road East	693	173	264	1353	0.512	691	878	0.7	1.0	5.427	A
	C - Buckingham Road West	1160	290	168	1330	0.872	1148	787	3.0	5.9	18.582	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	787	197	41	1210	0.650	784	1156	1.1	1.8	8.393	A
	B - Newton Road	580	145	429	566	1.026	532	396	1.6	13.7	69.638	F
	C - Buckingham Road West	771	193	482	756	1.020	715	479	1.5	15.5	57.967	F

#### 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	719	768	0.545	418	587	1.2	1.2	10.283	B
	B - Buckingham Road East	693	173	265	1352	0.512	693	872	1.0	1.0	5.458	A
	C - Buckingham Road West	1138	284	168	1330	0.855	1138	789	5.9	5.9	18.696	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	789	197	40	1211	0.652	789	1134	1.8	1.8	8.533	A
	B - Newton Road	580	145	432	527	1.102	520	397	13.7	28.7	163.437	F
	C - Buckingham Road West	771	193	472	711	1.085	703	480	15.5	32.5	137.796	F

#### 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	730	760	0.449	343	563	1.2	0.8	8.663	A
	B - Buckingham Road East	565	141	218	1390	0.407	567	856	1.0	0.7	4.379	A
	C - Buckingham Road West	1155	289	138	1351	0.855	1155	647	5.9	5.9	18.410	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	647	162	40	1211	0.534	649	1152	1.8	1.2	6.441	A
	B - Newton Road	474	118	355	557	0.850	538	334	28.7	12.6	143.217	F
	C - Buckingham Road West	629	157	488	725	0.868	703	405	32.5	14.0	123.712	F

08:45 - 09:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	610	850	0.337	287	470	0.8	0.5	6.413	A
	B - Buckingham Road East	474	118	182	1419	0.334	474	715	0.7	0.5	3.817	A
	C - Buckingham Road West	951	238	115	1366	0.696	965	541	5.9	2.4	9.278	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	541	135	33	1215	0.445	543	948	1.2	0.8	5.363	A
	B - Newton Road	397	99	297	798	0.497	443	279	12.6	1.0	11.487	B
	C - Buckingham Road West	527	132	402	1076	0.490	579	338	14.0	1.0	8.038	A

# 2033 Base + CD + D, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2W - Newford Road/ Buckingham Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 81% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 84% of the total flow for the roundabout for one or more time segments]

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	234.85	F
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	16.72	C

### Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	359	100.000
	B - Buckingham Road East		ONE HOUR	✓	1146	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	364	100.000
	C - Buckingham Road West		ONE HOUR	✓	468	100.000

## Origin-Destination Data

### Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	430	728
	B - Newton Road	319	0	45
	C - Buckingham Road West	416	52	0

### Proportions

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.37	0.63
	B - Newton Road	0.88	0.00	0.12
	C - Buckingham Road West	0.89	0.11	0.00

### Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	149	210
	B - Buckingham Road East	198	0	948
	C - Buckingham Road West	193	541	0

### Proportions

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.42	0.58
	B - Buckingham Road East	0.17	0.00	0.83
	C - Buckingham Road West	0.26	0.74	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	1	1
	B - Newton Road	1	0	0

### Average PCU Per Veh

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.013	1.009
	B - Newton Road	1.014	1.000	1.000

C - Buckingham Road West	3	7	0
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C - Buckingham Road West	1.027	1.067	1.000
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## Heavy Vehicle Percentages

2E -  
Buckingham  
Road/  
Shenley  
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	0	1
	B - Buckingham Road East	1	0	1
	C - Buckingham Road West	0	2	0

## Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.000	1.005
	B - Buckingham Road East	1.006	1.000	1.011
	C - Buckingham Road West	1.003	1.021	1.000

## Detailed Demand Data

## Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	16:45-17:00	270	271
		17:00-17:15	323	324
		17:15-17:30	395	396
		17:30-17:45	395	396
		17:45-18:00	323	324
	B - Buckingham Road East	18:00-18:15	270	271
		16:45-17:00	863	872
		17:00-17:15	1030	1041
		17:15-17:30	1262	1275
		17:30-17:45	1262	1275
	C - Buckingham Road West	17:45-18:00	1030	1041
		18:00-18:15	863	872
		16:45-17:00	553	562
		17:00-17:15	660	671
		17:15-17:30	808	821
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	17:30-17:45	808	821
		17:45-18:00	660	671
		18:00-18:15	553	562
		16:45-17:00	872	881
		17:00-17:15	1041	1052
	B - Newton Road	17:15-17:30	1275	1288
		17:30-17:45	1275	1288
		17:45-18:00	1041	1052
		18:00-18:15	872	881
		16:45-17:00	274	277
	C - Buckingham Road West	17:00-17:15	327	331
		17:15-17:30	401	406
		17:30-17:45	401	406
		17:45-18:00	327	331
		18:00-18:15	274	277
C - Buckingham Road West	16:45-17:00	352	363	
	17:00-17:15	421	434	
	17:15-17:30	515	531	
	17:30-17:45	515	531	
	17:45-18:00	421	434	
		18:00-18:15	352	363

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.72	21.74	2.4	C	329	494
	B - Buckingham Road East	1.28	448.74	133.5	F	1052	1577
	C - Buckingham Road West	0.61	6.98	1.6	A	677	1016
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.87	21.13	5.9	C	1021	1532
	B - Newton Road	0.66	17.26	1.9	C	334	501
	C - Buckingham Road West	0.46	6.05	0.9	A	429	644

## Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	405	1010	0.268	269	293	0.0	0.4	4.850	A
	B - Buckingham Road East	863	216	157	1474	0.585	857	517	0.0	1.4	5.787	A
	C - Buckingham Road West	552	138	148	1343	0.411	550	866	0.0	0.7	4.521	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	866	216	39	1236	0.700	857	550	0.0	2.3	9.279	A
	B - Newton Road	274	69	539	677	0.405	271	357	0.0	0.7	8.814	A
	C - Buckingham Road West	352	88	238	1217	0.290	351	572	0.0	0.4	4.148	A



## 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	487	948	0.341	322	351	0.4	0.5	5.749	A
	B - Buckingham Road East	1030	258	188	1448	0.711	1026	621	1.4	2.4	8.447	A
	C - Buckingham Road West	662	165	177	1323	0.500	661	1037	0.7	1.0	5.423	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1037	259	47	1231	0.842	1027	659	2.3	4.8	16.783	C
	B - Newton Road	327	82	645	617	0.531	326	428	0.7	1.1	12.289	B
	C - Buckingham Road West	421	105	285	1172	0.359	420	686	0.4	0.6	4.780	A

## 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	595	547	0.723	388	388	0.5	2.4	21.739	C
	B - Buckingham Road East	1262	315	227	1026	1.230	1015	756	2.4	64.1	128.851	F
	C - Buckingham Road West	809	202	175	1325	0.611	807	1066	1.0	1.5	6.926	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1066	266	57	1225	0.870	1061	805	4.8	5.9	21.133	C
	B - Newton Road	401	100	667	604	0.663	398	451	1.1	1.9	17.154	C
	C - Buckingham Road West	515	129	349	1113	0.463	514	716	0.6	0.9	5.997	A

## 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	599	863	0.458	401	384	2.4	0.9	7.897	A
	B - Buckingham Road East	1262	315	235	985	1.281	984	766	64.1	133.5	362.137	F
	C - Buckingham Road West	813	203	170	1328	0.612	813	1049	1.5	1.6	6.985	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1048	262	57	1225	0.856	1048	809	5.9	5.9	20.394	C
	B - Newton Road	401	100	659	609	0.658	401	446	1.9	1.9	17.259	C
	C - Buckingham Road West	515	129	351	1111	0.464	515	708	0.9	0.9	6.046	A

## 17:45 - 18:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	494	943	0.342	324	357	0.9	0.5	5.830	A
	B - Buckingham Road East	1030	258	190	1053	0.978	1046	628	133.5	129.7	448.744	F
	C - Buckingham Road West	667	167	181	1321	0.505	670	1054	1.6	1.0	5.544	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1054	263	47	1231	0.856	1054	664	5.9	5.9	20.290	C
	B - Newton Road	327	82	663	607	0.539	330	438	1.9	1.2	13.123	B
	C - Buckingham Road West	421	105	289	1169	0.360	422	703	0.9	0.6	4.828	A

## 18:00 - 18:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	412	1004	0.269	271	335	0.5	0.4	4.913	A
	B - Buckingham Road East	863	216	158	1096	0.787	1088	524	129.7	73.4	337.549	F
	C - Buckingham Road West	558	139	188	1316	0.424	559	1058	1.0	0.7	4.763	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1058	265	39	1236	0.856	1058	555	5.9	5.9	20.205	C
	B - Newton Road	274	69	665	605	0.453	275	432	1.2	0.8	10.957	B
	C - Buckingham Road West	352	88	241	1214	0.290	353	699	0.6	0.4	4.187	A

## 2033 Base + CD + D with TP, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 82% of the total flow for the roundabout for one or more time segments]

### Junction Network

#### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	13.24	B
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	83.33	F

#### Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

### Traffic Demand

#### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

#### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

#### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	380	100.000
	B - Buckingham Road East		ONE HOUR	✓	619	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	527	100.000
	C - Buckingham Road West		ONE HOUR	✓	684	100.000

### Origin-Destination Data

**Demand (Veh/hr)**

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	325	383
	B - Newton Road	478	0	49
	C - Buckingham Road West	644	40	0

**Proportions**

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.46	0.54
	B - Newton Road	0.91	0.00	0.09
	C - Buckingham Road West	0.94	0.06	0.00

**Demand (Veh/hr)**

2E - Buckingham Road/ Shenley Road

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	139	241
	B - Buckingham Road East	153	0	466
	C - Buckingham Road West	419	703	0

**Proportions**

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.37	0.63
	B - Buckingham Road East	0.25	0.00	0.75
	C - Buckingham Road West	0.37	0.63	0.00

### Vehicle Mix

**Heavy Vehicle Percentages**

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	2	4
	B - Newton Road	2	0	5
	C - Buckingham Road West	2	3	0

**Average PCU Per Veh**

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.021	1.041
	B - Newton Road	1.024	1.000	1.047
	C - Buckingham Road West	1.015	1.029	1.000

## Heavy Vehicle Percentages

2E -  
Buckingham  
Road/  
Shenley  
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	1	1
	B - Buckingham Road East	1	0	4
	C - Buckingham Road West	1	2	0

## Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.008	1.010
	B - Buckingham Road East	1.008	1.000	1.043
	C - Buckingham Road West	1.008	1.019	1.000

## Detailed Demand Data

## Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	07:30-07:45	286	289
		07:45-08:00	342	345
		08:00-08:15	418	422
		08:15-08:30	418	422
		08:30-08:45	342	345
	B - Buckingham Road East	08:45-09:00	286	289
		07:30-07:45	466	482
		07:45-08:00	556	576
		08:00-08:15	682	705
		08:15-08:30	682	705
	C - Buckingham Road West	08:30-08:45	556	576
		08:45-09:00	466	482
		07:30-07:45	845	857
		07:45-08:00	1009	1024
		08:00-08:15	1235	1254
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	08:15-08:30	1235	1254
		08:30-08:45	1009	1024
		08:45-09:00	845	857
		07:30-07:45	533	550
		07:45-08:00	636	657
	B - Newton Road	08:00-08:15	780	804
		08:15-08:30	780	804
		08:30-08:45	636	657
		08:45-09:00	533	550
		07:30-07:45	397	407
	C - Buckingham Road West	07:45-08:00	474	486
		08:00-08:15	580	595
		08:15-08:30	580	595
		08:30-08:45	474	486
		08:45-09:00	397	407
C - Buckingham Road West	07:30-07:45	515	523	
	07:45-08:00	615	625	
	08:00-08:15	753	765	
	08:15-08:30	753	765	
	08:30-08:45	615	625	
		08:45-09:00	515	523

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.54	10.17	1.2	B	349	523
	B - Buckingham Road East	0.50	5.37	1.0	A	568	852
	C - Buckingham Road West	0.87	18.69	5.9	C	1032	1549
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.64	8.32	1.8	A	648	972
	B - Newton Road	1.08	140.86	24.7	F	484	725
	C - Buckingham Road West	1.06	117.25	26.9	F	628	941

## Main Results for each time segment

## 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	523	916	0.312	284	427	0.0	0.5	5.687	A
	B - Buckingham Road East	466	117	180	1420	0.328	464	627	0.0	0.5	3.756	A
	C - Buckingham Road West	841	210	115	1367	0.615	835	530	0.0	1.6	6.687	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	530	132	30	1217	0.435	527	838	0.0	0.8	5.190	A
	B - Newton Road	397	99	285	805	0.493	393	272	0.0	1.0	8.653	A
	C - Buckingham Road West	515	129	356	1119	0.460	512	321	0.0	0.8	5.892	A

## 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
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2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	629	837	0.408	341	512	0.5	0.7	7.247	A
	B - Buckingham Road East	556	139	216	1392	0.400	556	753	0.5	0.7	4.303	A
	C - Buckingham Road West	1008	252	137	1352	0.746	1003	634	1.6	2.8	10.179	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	634	159	36	1214	0.523	633	1005	0.8	1.1	6.188	A
	B - Newton Road	474	118	343	772	0.614	471	326	1.0	1.5	11.882	B
	C - Buckingham Road West	615	154	428	1051	0.585	613	386	0.8	1.4	8.177	A

## 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	720	769	0.544	416	597	0.7	1.2	10.169	B
	B - Buckingham Road East	682	170	264	1353	0.504	680	872	0.7	1.0	5.338	A
	C - Buckingham Road West	1161	290	168	1331	0.872	1148	776	2.8	5.9	18.503	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	776	194	41	1210	0.641	773	1156	1.1	1.7	8.192	A
	B - Newton Road	580	145	418	581	0.998	540	396	1.5	11.6	60.965	F
	C - Buckingham Road West	753	188	490	759	0.993	708	469	1.4	12.7	50.505	F

## 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	713	773	0.541	418	594	1.2	1.2	10.143	B
	B - Buckingham Road East	682	170	265	1352	0.504	682	866	1.0	1.0	5.367	A
	C - Buckingham Road West	1138	285	168	1331	0.855	1138	778	5.9	5.9	18.694	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	778	195	41	1211	0.643	778	1134	1.7	1.8	8.321	A
	B - Newton Road	580	145	421	537	1.081	528	398	11.6	24.7	140.859	F
	C - Buckingham Road West	753	188	478	708	1.064	696	470	12.7	26.9	117.251	F

## 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	724	765	0.447	343	570	1.2	0.8	8.562	A
	B - Buckingham Road East	556	139	218	1390	0.400	558	850	1.0	0.7	4.330	A
	C - Buckingham Road West	1156	289	138	1352	0.855	1156	637	5.9	5.9	18.408	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	637	159	41	1211	0.527	640	1152	1.8	1.1	6.336	A
	B - Newton Road	474	118	346	578	0.819	548	334	24.7	6.3	105.541	F
	C - Buckingham Road West	615	154	497	737	0.835	696	397	26.9	6.7	87.169	F

## 08:45 - 09:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	567	883	0.324	287	453	0.8	0.5	6.061	A
	B - Buckingham Road East	466	117	182	1419	0.328	467	672	0.7	0.5	3.783	A
	C - Buckingham Road West	889	222	115	1367	0.651	905	534	5.9	1.9	8.057	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	534	133	31	1216	0.439	535	886	1.1	0.8	5.296	A
	B - Newton Road	397	99	289	803	0.494	418	277	6.3	1.0	9.853	A
	C - Buckingham Road West	515	129	379	1098	0.469	538	328	6.7	0.9	6.699	A

## 2033 Base + CD + D with TP, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2W - Newford Road/ Buckingham Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 81% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 83% of the total flow for the roundabout for one or more time segments]

### Junction Network

#### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	210.98	F
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	16.60	C

#### Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

### Traffic Demand

#### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

#### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

#### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	359	100.000
	B - Buckingham Road East		ONE HOUR	✓	1126	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	364	100.000
	C - Buckingham Road West		ONE HOUR	✓	454	100.000

### Origin-Destination Data

#### Demand (Veh/hr)

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	430	708
	B - Newton Road	319	0	45
	C - Buckingham Road West	402	52	0

#### Proportions

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.38	0.62
	B - Newton Road	0.88	0.00	0.12
	C - Buckingham Road West	0.89	0.11	0.00

2W - Newford Road/  
Buckingham Road

#### Demand (Veh/hr)

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	149	210
	B - Buckingham Road East	198	0	928
	C - Buckingham Road West	193	528	0

#### Proportions

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.42	0.58
	B - Buckingham Road East	0.18	0.00	0.82
	C - Buckingham Road West	0.27	0.73	0.00

2E - Buckingham Road/  
Shenley Road

### Vehicle Mix

#### Heavy Vehicle Percentages

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	1	1
	B - Newton Road	1	0	0

#### Average PCU Per Veh

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.013	1.008
	B - Newton Road	1.014	1.000	1.000

2W - Newford Road/  
Buckingham Road

C - Buckingham Road West	3	7	0
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C - Buckingham Road West	1.027	1.067	1.000
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## Heavy Vehicle Percentages

2E -  
Buckingham  
Road/  
Shenley  
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	0	1
	B - Buckingham Road East	1	0	1
	C - Buckingham Road West	0	2	0

## Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.000	1.005
	B - Buckingham Road East	1.006	1.000	1.011
	C - Buckingham Road West	1.003	1.021	1.000

## Detailed Demand Data

## Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	16:45-17:00	270	271
		17:00-17:15	323	324
		17:15-17:30	395	396
		17:30-17:45	395	396
		17:45-18:00	323	324
	B - Buckingham Road East	18:00-18:15	270	271
		16:45-17:00	848	856
		17:00-17:15	1012	1022
		17:15-17:30	1240	1252
		17:30-17:45	1240	1252
	C - Buckingham Road West	17:45-18:00	1012	1022
		18:00-18:15	848	856
		16:45-17:00	543	552
		17:00-17:15	648	659
		17:15-17:30	794	807
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	17:30-17:45	794	807
		17:45-18:00	648	659
		18:00-18:15	543	552
		16:45-17:00	857	865
		17:00-17:15	1023	1033
	B - Newton Road	17:15-17:30	1253	1265
		17:30-17:45	1253	1265
		17:45-18:00	1023	1033
		18:00-18:15	857	865
		16:45-17:00	274	277
	C - Buckingham Road West	17:00-17:15	327	331
		17:15-17:30	401	406
		17:30-17:45	401	406
		17:45-18:00	327	331
		18:00-18:15	274	277
C - Buckingham Road West	16:45-17:00	342	353	
	17:00-17:15	408	421	
	17:15-17:30	500	516	
	17:30-17:45	500	516	
	17:45-18:00	408	421	
		18:00-18:15	342	353

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.94	54.90	6.9	F	329	494
	B - Buckingham Road East	1.27	392.42	120.0	F	1033	1550
	C - Buckingham Road West	0.60	6.79	1.5	A	664	996
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.87	20.98	5.9	C	1017	1525
	B - Newton Road	0.66	16.93	1.9	C	334	501
	C - Buckingham Road West	0.45	5.89	0.8	A	417	625

## Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	395	1017	0.266	269	292	0.0	0.4	4.800	A
	B - Buckingham Road East	848	212	157	1474	0.575	842	506	0.0	1.3	5.654	A
	C - Buckingham Road West	542	135	148	1343	0.403	539	852	0.0	0.7	4.464	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	852	213	39	1237	0.688	843	539	0.0	2.1	8.951	A
	B - Newton Road	274	69	524	686	0.400	271	357	0.0	0.7	8.637	A
	C - Buckingham Road West	342	85	238	1217	0.281	340	558	0.0	0.4	4.100	A



## 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	475	957	0.337	322	351	0.4	0.5	5.665	A
	B - Buckingham Road East	1012	253	188	1448	0.699	1009	608	1.3	2.3	8.117	A
	C - Buckingham Road West	649	162	177	1323	0.491	648	1020	0.7	1.0	5.323	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1020	255	47	1232	0.828	1011	646	2.1	4.4	15.640	C
	B - Newton Road	327	82	629	626	0.522	326	429	0.7	1.1	11.898	B
	C - Buckingham Road West	408	102	285	1172	0.348	408	669	0.4	0.5	4.705	A

## 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	580	421	0.938	370	394	0.5	6.9	54.902	F
	B - Buckingham Road East	1240	310	216	1047	1.184	1033	733	2.3	53.8	109.444	F
	C - Buckingham Road West	794	199	182	1320	0.601	792	1068	1.0	1.5	6.784	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1068	267	57	1225	0.871	1062	790	4.4	5.9	20.975	C
	B - Newton Road	401	100	661	608	0.659	398	458	1.1	1.8	16.828	C
	C - Buckingham Road West	500	125	349	1113	0.449	499	710	0.5	0.8	5.850	A

## 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	584	875	0.452	419	385	6.9	0.8	8.325	A
	B - Buckingham Road East	1240	310	245	976	1.270	975	758	53.8	120.0	322.064	F
	C - Buckingham Road West	798	199	171	1327	0.601	798	1049	1.5	1.5	6.794	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1049	262	57	1225	0.856	1049	794	5.9	5.9	20.392	C
	B - Newton Road	401	100	653	613	0.654	401	454	1.8	1.9	16.932	C
	C - Buckingham Road West	500	125	351	1110	0.450	500	702	0.8	0.8	5.895	A

## 17:45 - 18:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	481	952	0.339	324	360	0.8	0.5	5.739	A
	B - Buckingham Road East	1012	253	190	1058	0.956	1050	615	120.0	110.6	392.423	F
	C - Buckingham Road West	655	164	185	1319	0.496	657	1055	1.5	1.0	5.454	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1055	264	47	1232	0.856	1055	651	5.9	5.9	20.289	C
	B - Newton Road	327	82	656	611	0.536	330	445	1.9	1.2	12.927	B
	C - Buckingham Road West	408	102	289	1169	0.349	409	697	0.8	0.5	4.748	A

## 18:00 - 18:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	402	1012	0.267	271	339	0.5	0.4	4.858	A
	B - Buckingham Road East	848	212	158	1102	0.769	1092	514	110.6	49.5	266.311	F
	C - Buckingham Road West	547	137	192	1314	0.417	548	1059	1.0	0.7	4.711	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1059	265	39	1237	0.856	1059	545	5.9	5.9	20.201	C
	B - Newton Road	274	69	659	609	0.450	275	439	1.2	0.8	10.822	B
	C - Buckingham Road West	342	85	241	1214	0.282	342	693	0.5	0.4	4.136	A

## 2033 Base + CD + D - ST, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details. [Arms B and C have 83% of the total flow for the roundabout for one or more time segments]

### Junction Network

#### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	13.63	B
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	167.05	F

#### Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

### Traffic Demand

#### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

#### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

#### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	380	100.000
	B - Buckingham Road East		ONE HOUR	✓	658	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	527	100.000
	C - Buckingham Road West		ONE HOUR	✓	762	100.000

### Origin-Destination Data

**Demand (Veh/hr)**

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	325	422
	B - Newton Road	478	0	49
	C - Buckingham Road West	722	40	0

**Proportions**

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.44	0.56
	B - Newton Road	0.91	0.00	0.09
	C - Buckingham Road West	0.95	0.05	0.00

**Demand (Veh/hr)**

2E - Buckingham Road/ Shenley Road

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	139	241
	B - Buckingham Road East	153	0	505
	C - Buckingham Road West	419	782	0

**Proportions**

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.37	0.63
	B - Buckingham Road East	0.23	0.00	0.77
	C - Buckingham Road West	0.35	0.65	0.00

### Vehicle Mix

**Heavy Vehicle Percentages**

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	2	4
	B - Newton Road	2	0	5
	C - Buckingham Road West	2	3	0

**Average PCU Per Veh**

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.021	1.041
	B - Newton Road	1.024	1.000	1.047
	C - Buckingham Road West	1.016	1.029	1.000

## Heavy Vehicle Percentages

2E -  
Buckingham  
Road/  
Shenley  
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	1	1
	B - Buckingham Road East	1	0	4
	C - Buckingham Road West	1	2	0

## Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.008	1.010
	B - Buckingham Road East	1.008	1.000	1.044
	C - Buckingham Road West	1.008	1.019	1.000

## Detailed Demand Data

## Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	07:30-07:45	286	289
		07:45-08:00	342	345
		08:00-08:15	418	422
		08:15-08:30	418	422
		08:30-08:45	342	345
	B - Buckingham Road East	08:45-09:00	286	289
		07:30-07:45	495	513
		07:45-08:00	592	613
		08:00-08:15	724	750
		08:15-08:30	724	750
	C - Buckingham Road West	08:30-08:45	592	613
		08:45-09:00	495	513
		07:30-07:45	904	918
		07:45-08:00	1080	1096
		08:00-08:15	1322	1342
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	08:15-08:30	1322	1342
		08:30-08:45	1080	1096
		08:45-09:00	904	918
		07:30-07:45	562	581
		07:45-08:00	672	693
	B - Newton Road	08:00-08:15	822	849
		08:15-08:30	822	849
		08:30-08:45	672	693
		08:45-09:00	562	581
		07:30-07:45	397	407
	C - Buckingham Road West	07:45-08:00	474	486
		08:00-08:15	580	595
		08:15-08:30	580	595
		08:30-08:45	474	486
		08:45-09:00	397	407
C - Buckingham Road West	07:30-07:45	574	583	
	07:45-08:00	685	696	
	08:00-08:15	839	853	
	08:15-08:30	839	853	
	08:30-08:45	685	696	
		08:45-09:00	574	583

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.56	10.84	1.2	B	349	523
	B - Buckingham Road East	0.54	5.75	1.1	A	604	906
	C - Buckingham Road West	0.87	18.93	5.9	C	1100	1650
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.68	9.22	2.1	A	684	1027
	B - Newton Road	1.16	255.30	41.5	F	484	725
	C - Buckingham Road West	1.16	262.31	57.1	F	699	1049

## Main Results for each time segment

## 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	581	872	0.328	284	426	0.0	0.5	6.100	A
	B - Buckingham Road East	495	124	180	1419	0.349	493	685	0.0	0.5	3.882	A
	C - Buckingham Road West	899	225	115	1367	0.658	892	559	0.0	1.9	7.466	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	559	140	30	1217	0.460	556	896	0.0	0.8	5.421	A
	B - Newton Road	397	99	314	788	0.503	393	272	0.0	1.0	9.012	A
	C - Buckingham Road West	574	143	356	1119	0.513	570	351	0.0	1.0	6.510	A

## 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
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2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	697	785	0.435	341	511	0.5	0.8	8.071	A
	B - Buckingham Road East	592	148	216	1390	0.426	591	822	0.5	0.7	4.499	A
	C - Buckingham Road West	1078	269	137	1352	0.797	1070	669	1.9	3.7	12.481	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	670	167	36	1213	0.552	668	1073	0.8	1.2	6.589	A
	B - Newton Road	474	118	378	752	0.630	471	327	1.0	1.6	12.710	B
	C - Buckingham Road West	685	171	427	1050	0.652	682	421	1.0	1.8	9.691	A

## 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	749	747	0.560	416	569	0.8	1.2	10.842	B
	B - Buckingham Road East	724	181	264	1351	0.536	723	901	0.7	1.1	5.712	A
	C - Buckingham Road West	1159	290	168	1331	0.871	1150	819	3.7	5.9	18.930	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	819	205	39	1211	0.677	816	1155	1.2	2.0	9.036	A
	B - Newton Road	580	145	461	523	1.109	504	394	1.6	20.7	99.007	F
	C - Buckingham Road West	839	210	457	758	1.107	736	508	1.8	27.5	86.779	F

## 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	741	752	0.556	418	566	1.2	1.2	10.773	B
	B - Buckingham Road East	724	181	265	1350	0.536	724	894	1.1	1.1	5.750	A
	C - Buckingham Road West	1138	285	168	1331	0.855	1138	821	5.9	5.9	18.695	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	822	205	38	1212	0.678	822	1134	2.0	2.1	9.219	A
	B - Newton Road	580	145	464	500	1.161	497	395	20.7	41.5	239.688	F
	C - Buckingham Road West	839	210	451	723	1.161	720	510	27.5	57.1	223.551	F

## 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	753	744	0.459	343	541	1.2	0.9	9.019	A
	B - Buckingham Road East	592	148	218	1389	0.426	593	878	1.1	0.7	4.534	A
	C - Buckingham Road West	1156	289	138	1351	0.855	1156	673	5.9	5.9	18.409	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	673	168	38	1212	0.556	676	1151	2.1	1.3	6.767	A
	B - Newton Road	474	118	382	528	0.897	516	332	41.5	31.1	255.304	F
	C - Buckingham Road West	685	171	468	734	0.933	721	430	57.1	48.0	262.309	F

## 08:45 - 09:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	761	738	0.388	287	523	0.9	0.6	8.007	A
	B - Buckingham Road East	495	124	182	1417	0.350	496	866	0.7	0.5	3.913	A
	C - Buckingham Road West	1169	292	115	1367	0.855	1169	563	5.9	5.9	18.204	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	563	141	39	1211	0.465	565	1164	1.3	0.9	5.585	A
	B - Newton Road	397	99	319	533	0.744	505	285	31.1	3.9	125.568	F
	C - Buckingham Road West	574	143	458	760	0.755	745	366	48.0	5.2	137.484	F

## 2033 Base + CD + D - ST, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2W - Newford Road/ Buckingham Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 82% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 84% of the total flow for the roundabout for one or more time segments]

### Junction Network

#### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	314.70	F
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	16.41	C

#### Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

### Traffic Demand

#### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

#### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

#### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	359	100.000
	B - Buckingham Road East		ONE HOUR	✓	1194	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	364	100.000
	C - Buckingham Road West		ONE HOUR	✓	492	100.000

### Origin-Destination Data

#### Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	430	776
	B - Newton Road	319	0	45
	C - Buckingham Road West	440	52	0

#### Proportions

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.36	0.64
	B - Newton Road	0.88	0.00	0.12
	C - Buckingham Road West	0.89	0.11	0.00

#### Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	149	210
	B - Buckingham Road East	198	0	996
	C - Buckingham Road West	193	566	0

#### Proportions

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.42	0.58
	B - Buckingham Road East	0.17	0.00	0.83
	C - Buckingham Road West	0.25	0.75	0.00

### Vehicle Mix

#### Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	1	1
	B - Newton Road	1	0	0

#### Average PCU Per Veh

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.013	1.009
	B - Newton Road	1.014	1.000	1.000

C - Buckingham Road West	3	7	0
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C - Buckingham Road West	1.028	1.067	1.000
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## Heavy Vehicle Percentages

2E -  
Buckingham  
Road/  
Shenley  
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	0	1
	B - Buckingham Road East	1	0	1
	C - Buckingham Road West	0	2	0

## Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.000	1.005
	B - Buckingham Road East	1.006	1.000	1.011
	C - Buckingham Road West	1.003	1.021	1.000

## Detailed Demand Data

## Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	16:45-17:00	270	271
		17:00-17:15	323	324
		17:15-17:30	395	396
		17:30-17:45	395	396
		17:45-18:00	323	324
		18:00-18:15	270	271
	B - Buckingham Road East	16:45-17:00	899	908
		17:00-17:15	1073	1084
		17:15-17:30	1315	1328
		17:30-17:45	1315	1328
		17:45-18:00	1073	1084
		18:00-18:15	899	908
	C - Buckingham Road West	16:45-17:00	571	581
		17:00-17:15	682	694
		17:15-17:30	836	849
		17:30-17:45	836	849
		17:45-18:00	682	694
		18:00-18:15	571	581
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	16:45-17:00	908	917
		17:00-17:15	1084	1095
		17:15-17:30	1328	1342
		17:30-17:45	1328	1342
		17:45-18:00	1084	1095
		18:00-18:15	908	917
	B - Newton Road	16:45-17:00	274	277
		17:00-17:15	327	331
		17:15-17:30	401	406
		17:30-17:45	401	406
		17:45-18:00	327	331
		18:00-18:15	274	277
	C - Buckingham Road West	16:45-17:00	370	382
		17:00-17:15	442	457
		17:15-17:30	542	559
		17:30-17:45	542	559
		17:45-18:00	442	457
		18:00-18:15	370	382

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.47	8.04	0.9	A	329	494
	B - Buckingham Road East	1.34	603.74	179.6	F	1096	1643
	C - Buckingham Road West	0.63	7.30	1.7	A	700	1049
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.87	20.40	5.9	C	1031	1547
	B - Newton Road	0.67	17.99	2.0	C	334	501
	C - Buckingham Road West	0.49	6.33	0.9	A	451	677

## Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	423	996	0.271	269	292	0.0	0.4	4.941	A
	B - Buckingham Road East	899	225	157	1474	0.610	893	535	0.0	1.5	6.134	A
	C - Buckingham Road West	571	143	148	1343	0.425	568	902	0.0	0.7	4.626	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	902	225	39	1236	0.729	891	567	0.0	2.6	10.148	B
	B - Newton Road	274	69	573	658	0.417	271	357	0.0	0.7	9.254	A
	C - Buckingham Road West	370	93	238	1216	0.305	369	607	0.0	0.4	4.238	A



## 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	509	931	0.347	322	350	0.4	0.5	5.908	A
	B - Buckingham Road East	1073	268	188	1356	0.791	1065	643	1.5	3.6	12.047	B
	C - Buckingham Road West	684	171	177	1324	0.517	683	1077	0.7	1.1	5.604	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1077	269	47	1231	0.874	1063	680	2.6	5.9	19.910	C
	B - Newton Road	327	82	684	595	0.550	325	426	0.7	1.2	13.265	B
	C - Buckingham Road West	442	111	285	1172	0.377	442	724	0.4	0.6	4.926	A

## 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	622	846	0.467	394	375	0.5	0.9	7.941	A
	B - Buckingham Road East	1315	329	230	987	1.332	981	786	3.6	86.9	175.576	F
	C - Buckingham Road West	837	209	163	1333	0.628	834	1049	1.1	1.7	7.183	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1048	262	57	1225	0.856	1048	832	5.9	5.9	20.392	C
	B - Newton Road	401	100	674	600	0.668	398	431	1.2	1.9	17.537	C
	C - Buckingham Road West	542	135	349	1112	0.487	540	724	0.6	0.9	6.280	A

## 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	626	843	0.469	395	376	0.9	0.9	8.044	A
	B - Buckingham Road East	1315	329	231	981	1.341	980	790	86.9	170.4	470.275	F
	C - Buckingham Road West	840	210	163	1333	0.630	840	1049	1.7	1.7	7.295	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1048	262	57	1225	0.856	1048	835	5.9	5.9	20.400	C
	B - Newton Road	401	100	674	600	0.668	401	431	1.9	2.0	17.988	C
	C - Buckingham Road West	542	135	351	1110	0.488	542	724	0.9	0.9	6.334	A

## 17:45 - 18:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	516	926	0.349	324	348	0.9	0.5	5.996	A
	B - Buckingham Road East	1073	268	190	1038	1.035	1037	651	170.4	179.6	603.738	F
	C - Buckingham Road West	690	172	172	1327	0.520	692	1054	1.7	1.1	5.692	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1054	263	47	1231	0.856	1054	686	5.9	5.9	20.284	C
	B - Newton Road	327	82	678	598	0.547	330	423	2.0	1.2	13.573	B
	C - Buckingham Road West	442	111	289	1168	0.379	444	719	0.9	0.6	4.978	A

## 18:00 - 18:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	431	990	0.273	271	326	0.5	0.4	5.008	A
	B - Buckingham Road East	899	225	158	1085	0.829	1079	543	179.6	134.6	525.007	F
	C - Buckingham Road West	577	144	179	1322	0.436	578	1058	1.1	0.8	4.844	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1058	265	39	1236	0.856	1058	573	5.9	5.9	20.203	C
	B - Newton Road	274	69	681	597	0.459	276	416	1.2	0.9	11.267	B
	C - Buckingham Road West	370	93	241	1213	0.305	371	715	0.6	0.4	4.280	A

**User and Project Details**

<b>Project:</b>	
<b>Title:</b>	
<b>Location:</b>	
<b>File name:</b>	J5 - Tattenhoe Roundabout_ST_014.lsg3x
<b>Author:</b>	
<b>Company:</b>	
<b>Address:</b>	
<b>Notes:</b>	

**Phase Input Data**

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7

**Phase Intergreens Matrix**

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		5	-	-	-	-	-	-
	B	5		-	-	-	-	-	-
	C	-	-		5	-	-	-	-
	D	-	-	5		-	-	-	-
	E	-	-	-	-		5	-	-
	F	-	-	-	-	5		-	-
	G	-	-	-	-	-	-		5
	H	-	-	-	-	-	-	5	

**Phase Delays**

**Stage Stream: 1**

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

**Stage Stream: 2**

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

**Stage Stream: 3**

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

**Stage Stream: 4**

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

**Prohibited Stage Change**

**Stage Stream: 1**

	To Stage	
From Stage	1	2
	1	5
	2	5

**Stage Stream: 2**

	To Stage	
From Stage	1	2
	1	5
	2	5

**Stage Stream: 3**

	To Stage	
From Stage	1	2
	1	5
	2	5

**Stage Stream: 4**

	To Stage	
From Stage	1	2
	1	5
	2	5

**Phases in Stage**

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

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**Give-Way Lane Input Data**

**Junction: Tattenhoe Roundabout**

There are no Opposed Lanes in this Junction

## Lane Input Data

Junction: Tattenhoe Roundabout												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A421 Standing Way (W))	U	A	2	3	8.7	Geom	-	2.99	0.00	Y	Arm 2 Left	36.10
1/2 (A421 Standing Way (W))	U	A	2	3	60.0	Geom	-	2.99	0.00	N	Arm 5 Ahead	Inf
1/3 (A421 Standing Way (W))	U	A	2	3	60.0	Geom	-	2.99	0.00	N	Arm 5 Ahead	Inf
2/1 (Sneshall Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (Sneshall Street)	U	G	2	3	4.0	Geom	-	4.62	0.00	Y	Arm 4 Left	33.74
											Arm 8 Ahead	Inf
3/2 (Sneshall Street)	U	G	2	3	60.0	Geom	-	4.62	0.00	N	Arm 8 Ahead	Inf
4/1 (A421 Standing Way (E) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2 (A421 Standing Way (E) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Gyratory W)	U	H	2	3	5.7	User	1900	-	-	-	-	-
5/2 (Gyratory W)	U	H	2	3	5.5	User	1900	-	-	-	-	-
5/3 (Gyratory W)	U	H	2	3	5.0	User	1900	-	-	-	-	-
6/1 (Gyratory S)	U	B	2	3	7.5	User	1900	-	-	-	-	-
6/2 (Gyratory S)	U	B	2	3	6.6	User	1900	-	-	-	-	-
7/1 (A421 Standing Way (E))	U	E	2	3	8.7	Geom	-	2.95	0.00	Y	Arm 11 Left	60.00
7/2 (A421 Standing Way (E))	U	E	2	3	60.0	Geom	-	2.95	0.00	N	Arm 9 Ahead	Inf
7/3 (A421 Standing Way (E))	U	E	2	3	60.0	Geom	-	2.95	0.00	N	Arm 9 Ahead	Inf
8/1 (Gyratory N)	U	F	2	3	5.9	User	1900	-	-	-	-	-
8/2 (Gyratory N)	U	F	2	3	5.1	User	1900	-	-	-	-	-

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9/1 (Gyratory E)	U	D	2	3	7.2	User	1900	-	-	-	-	-
9/2 (Gyratory E)	U	D	2	3	6.0	User	1900	-	-	-	-	-
10/1 (A421 Standing Way (W) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2 (A421 Standing Way (W) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (Buckingham Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (Buckingham Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (Buckingham Road)	U	C	2	3	60.0	Geom	-	3.64	0.00	Y	Arm 6 Ahead	Inf
											Arm 10 Left	60.90
12/2 (Buckingham Road)	U	C	2	3	7.8	Geom	-	3.64	0.00	N	Arm 6 Ahead	Inf



**Lane Saturation Flows****Scenario 1: '2033 Base + CD + D AM'** (FG1: '2033 Base + CD + Dev AM', Plan 1: 'Network Control Plan 1')

Junction: Tattenhoe Roundabout								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A421 Standing Way (W))	2.99	0.00	Y	Arm 2 Left	36.10	100.0 %	1838	1838
1/2 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
1/3 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
2/1 (Sneshall Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Sneshall Street)	4.62	0.00	Y	Arm 4 Left	33.74	48.4 %	2033	2033
				Arm 8 Ahead	Inf	51.6 %		
3/2 (Sneshall Street)	4.62	0.00	N	Arm 8 Ahead	Inf	100.0 %	2217	2217
4/1 (A421 Standing Way (E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (A421 Standing Way (E) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Gyratory W Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Gyratory W Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/3 (Gyratory W Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Gyratory S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Gyratory S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (A421 Standing Way (E))	2.95	0.00	Y	Arm 11 Left	60.00	100.0 %	1863	1863
7/2 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
7/3 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
8/1 (Gyratory N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Gyratory N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (Gyratory E Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
9/2 (Gyratory E Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900

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10/1 (A421 Standing Way (W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (A421 Standing Way (W) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (Buckingham Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Buckingham Road Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1 (Buckingham Road)	3.64	0.00	Y	Arm 6 Ahead	Inf	69.1 %	1964	1964
				Arm 10 Left	60.90	30.9 %		
12/2 (Buckingham Road)	3.64	0.00	N	Arm 6 Ahead	Inf	100.0 %	2119	2119

**Scenario 2: '2033 Base + CD + D PM'** (FG2: '2033 Base + CD + Dev PM', Plan 1: 'Network Control Plan 1')

Junction: Tattenhoe Roundabout								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A421 Standing Way (W))	2.99	0.00	Y	Arm 2 Left	36.10	100.0 %	1838	1838
1/2 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
1/3 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
2/1 (Sneshall Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Sneshall Street)	4.62	0.00	Y	Arm 4 Left	33.74	24.8 %	2054	2054
				Arm 8 Ahead	Inf	75.2 %		
3/2 (Sneshall Street)	4.62	0.00	N	Arm 8 Ahead	Inf	100.0 %	2217	2217
4/1 (A421 Standing Way (E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (A421 Standing Way (E) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Gyratory W Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Gyratory W Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/3 (Gyratory W Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Gyratory S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Gyratory S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (A421 Standing Way (E))	2.95	0.00	Y	Arm 11 Left	60.00	100.0 %	1863	1863
7/2 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
7/3 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
8/1 (Gyratory N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Gyratory N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (Gyratory E Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
9/2 (Gyratory E Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
10/1 (A421 Standing Way (W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

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10/2 (A421 Standing Way (W) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (Buckingham Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Buckingham Road Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1 (Buckingham Road)	3.64	0.00	Y	Arm 6 Ahead	Inf	66.3 %	1963	1963
				Arm 10 Left	60.90	33.7 %		
12/2 (Buckingham Road)	3.64	0.00	N	Arm 6 Ahead	Inf	100.0 %	2119	2119

**Scenario 3: '2033 Base + CD + D with TP AM'** (FG3: '2033 Base + CD + Dev with TP AM', Plan 1: 'Network Control Plan 1')

Junction: Tattenhoe Roundabout								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A421 Standing Way (W))	2.99	0.00	Y	Arm 2 Left	36.10	100.0 %	1838	1838
1/2 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
1/3 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
2/1 (Sneshall Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Sneshall Street)	4.62	0.00	Y	Arm 4 Left	33.74	42.1 %	2039	2039
				Arm 8 Ahead	Inf	57.9 %		
3/2 (Sneshall Street)	4.62	0.00	N	Arm 8 Ahead	Inf	100.0 %	2217	2217
4/1 (A421 Standing Way (E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (A421 Standing Way (E) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Gyratory W Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Gyratory W Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/3 (Gyratory W Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Gyratory S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Gyratory S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (A421 Standing Way (E))	2.95	0.00	Y	Arm 11 Left	60.00	100.0 %	1863	1863
7/2 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
7/3 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
8/1 (Gyratory N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Gyratory N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (Gyratory E Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
9/2 (Gyratory E Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900

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10/1 (A421 Standing Way (W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (A421 Standing Way (W) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (Buckingham Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Buckingham Road Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1 (Buckingham Road)	3.64	0.00	Y	Arm 6 Ahead	Inf	68.7 %	1964	1964
				Arm 10 Left	60.90	31.3 %		
12/2 (Buckingham Road)	3.64	0.00	N	Arm 6 Ahead	Inf	100.0 %	2119	2119

**Scenario 4: '2033 Base + CD + D with TP PM'** (FG4: '2033 Base + CD + Dev with TP PM', Plan 1: 'Network Control Plan 1')

Junction: Tattenhoe Roundabout								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A421 Standing Way (W))	2.99	0.00	Y	Arm 2 Left	36.10	100.0 %	1838	1838
1/2 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
1/3 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
2/1 (Sneshall Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Sneshall Street)	4.62	0.00	Y	Arm 4 Left	33.74	25.3 %	2054	2054
				Arm 8 Ahead	Inf	74.7 %		
3/2 (Sneshall Street)	4.62	0.00	N	Arm 8 Ahead	Inf	100.0 %	2217	2217
4/1 (A421 Standing Way (E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (A421 Standing Way (E) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Gyratory W Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Gyratory W Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/3 (Gyratory W Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Gyratory S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Gyratory S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (A421 Standing Way (E))	2.95	0.00	Y	Arm 11 Left	60.00	100.0 %	1863	1863
7/2 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
7/3 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
8/1 (Gyratory N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Gyratory N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (Gyratory E Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
9/2 (Gyratory E Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900



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10/1 (A421 Standing Way (W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (A421 Standing Way (W) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (Buckingham Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Buckingham Road Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1 (Buckingham Road)	3.64	0.00	Y	Arm 6 Ahead	Inf	68.2 %	1964	1964
				Arm 10 Left	60.90	31.8 %		
12/2 (Buckingham Road)	3.64	0.00	N	Arm 6 Ahead	Inf	100.0 %	2119	2119

**Scenario 5: '2033 Base + CD + D - ST AM'** (FG5: '2033 Base + CD + Dev - ST AM', Plan 1: 'Network Control Plan 1')

Junction: Tattenhoe Roundabout								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A421 Standing Way (W))	2.99	0.00	Y	Arm 2 Left	36.10	100.0 %	1838	1838
1/2 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
1/3 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
2/1 (Snesshall Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Snesshall Street)	4.62	0.00	Y	Arm 4 Left	33.74	49.4 %	2032	2032
				Arm 8 Ahead	Inf	50.6 %		
3/2 (Snesshall Street)	4.62	0.00	N	Arm 8 Ahead	Inf	100.0 %	2217	2217
4/1 (A421 Standing Way (E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (A421 Standing Way (E) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Gyratory W Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Gyratory W Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/3 (Gyratory W Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Gyratory S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Gyratory S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (A421 Standing Way (E))	2.95	0.00	Y	Arm 11 Left	60.00	100.0 %	1863	1863
7/2 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
7/3 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
8/1 (Gyratory N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Gyratory N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (Gyratory E Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
9/2 (Gyratory E Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
10/1 (A421 Standing Way (W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

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10/2 (A421 Standing Way (W) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (Buckingham Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Buckingham Road Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1 (Buckingham Road)	3.64	0.00	Y	Arm 6 Ahead	Inf	65.2 %	1962	1962
				Arm 10 Left	60.90	34.8 %		
12/2 (Buckingham Road)	3.64	0.00	N	Arm 6 Ahead	Inf	100.0 %	2119	2119

**Scenario 6: '2033 Base + CD + D - ST PM'** (FG6: '2033 Base + CD + Dev - ST PM', Plan 1: 'Network Control Plan 1')

Junction: Tattenhoe Roundabout								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A421 Standing Way (W))	2.99	0.00	Y	Arm 2 Left	36.10	100.0 %	1838	1838
1/2 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
1/3 (A421 Standing Way (W))	2.99	0.00	N	Arm 5 Ahead	Inf	100.0 %	2054	2054
2/1 (Sneshall Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Sneshall Street)	4.62	0.00	Y	Arm 4 Left	33.74	29.4 %	2050	2050
				Arm 8 Ahead	Inf	70.6 %		
3/2 (Sneshall Street)	4.62	0.00	N	Arm 8 Ahead	Inf	100.0 %	2217	2217
4/1 (A421 Standing Way (E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (A421 Standing Way (E) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Gyratory W Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Gyratory W Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/3 (Gyratory W Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Gyratory S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Gyratory S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (A421 Standing Way (E))	2.95	0.00	Y	Arm 11 Left	60.00	100.0 %	1863	1863
7/2 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
7/3 (A421 Standing Way (E))	2.95	0.00	N	Arm 9 Ahead	Inf	100.0 %	2050	2050
8/1 (Gyratory N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Gyratory N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (Gyratory E Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
9/2 (Gyratory E Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
10/1 (A421 Standing Way (W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

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10/2 (A421 Standing Way (W) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (Buckingham Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Buckingham Road Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1 (Buckingham Road)	3.64	0.00	Y	Arm 6 Ahead	Inf	61.3 %	1960	1960
				Arm 10 Left	60.90	38.7 %		
12/2 (Buckingham Road)	3.64	0.00	N	Arm 6 Ahead	Inf	100.0 %	2119	2119

**Traffic Flow Groups**

Flow Group	Start Time	End Time	Duration	Formula
1: '2033 Base + CD + Dev AM'	07:45	08:45	01:00	
2: '2033 Base + CD + Dev PM'	17:00	18:00	01:00	
3: '2033 Base + CD + Dev with TP AM'	07:45	08:45	01:00	
4: '2033 Base + CD + Dev with TP PM'	17:00	18:00	01:00	
5: '2033 Base + CD + Dev - ST AM'	07:45	08:45	01:00	
6: '2033 Base + CD + Dev - ST PM'	17:00	18:00	01:00	

**Traffic Flows, Desired**

**FG1: '2033 Base + CD + Dev AM'**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	1	202	364	445	1012
	B	132	2	172	1114	1420
	C	353	423	1	158	935
	D	308	1474	155	7	1944
	Tot.	794	2101	692	1724	5311

**FG2: '2033 Base + CD + Dev PM'**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	0	100	370	424	894
	B	113	2	313	1209	1637
	C	396	332	1	201	930
	D	394	1127	112	5	1638
	Tot.	903	1561	796	1839	5099

**FG3: '2033 Base + CD + Dev with TP AM'**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	1	202	359	434	996
	B	132	2	162	1089	1385
	C	340	379	1	155	875
	D	304	1461	149	7	1921
	Tot.	777	2044	671	1685	5177

**FG4: '2033 Base + CD + Dev with TP PM'**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	0	100	426	347	873
	B	113	2	285	1166	1566
	C	381	295	1	178	855
	D	392	1120	109	5	1626
	Tot.	886	1517	821	1696	4920

**FG5: '2033 Base + CD + Dev - ST AM'**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	1	202	364	328	895
	B	132	2	172	1128	1434
	C	353	423	1	188	965
	D	211	1499	219	7	1936
	Tot.	697	2126	756	1651	5230

**FG6: '2033 Base + CD + Dev - ST PM'**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	0	100	370	300	770
	B	113	2	313	1225	1653
	C	396	332	1	250	979
	D	264	1136	136	5	1541
	Tot.	773	1570	820	1780	4943

**Stage Timings**

**Scenario 1: '2033 Base + CD + D AM'** (FG1: '2033 Base + CD + Dev AM', Plan 1: 'Network Control Plan 1')

**Stage Stream: 1**

Stage	1	2
Duration	20	15
Change Point	26	6

**Stage Stream: 2**

Stage	1	2
Duration	13	22
Change Point	4	22

**Stage Stream: 3**

Stage	1	2
Duration	18	17
Change Point	25	3

**Stage Stream: 4**

Stage	2	1
Duration	27	8
Change Point	15	2



## Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	147.4%
Tattenhoe Roundabout	-	-	N/A	-	-		-	-	-	-	-	-	147.4%
1/2+1/1	A421 Standing Way (W) Left Ahead	U	1	N/A	A		1	20	-	1109	2054:1838	900+346	89.0 : 89.0%
1/3	A421 Standing Way (W) Ahead	U	1	N/A	A		1	20	-	835	2054	959	87.1%
2/1	Sneshall Street Exit	U	N/A	N/A	-		-	-	-	794	Inf	Inf	0.0%
3/2+3/1	Sneshall Street Left Ahead	U	4	N/A	G		1	8	-	1012	2217:2033	404+283	147.4 : 147.4%
4/1	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	1067	Inf	Inf	0.0%
4/2	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	1034	Inf	Inf	0.0%
5/1	Gyratory W Ahead	U	4	N/A	H		1	27	-	966	1900	1182	81.7%
5/2	Gyratory W Ahead	U	4	N/A	H		1	27	-	933	1900	1182	78.9%
5/3	Gyratory W Right	U	4	N/A	H		1	27	-	163	1900	1182	13.8%
6/1	Gyratory S Ahead	U	1	N/A	B		1	15	-	486	1900	676	71.9%
6/2	Gyratory S Right	U	1	N/A	B		1	15	-	426	1900	676	63.1%
7/2+7/1	A421 Standing Way (E) Ahead Left	U	3	N/A	E		1	18	-	808	2050:1863	849+230	74.9 : 74.9%
7/3	A421 Standing Way (E) Ahead	U	3	N/A	E		1	18	-	612	2050	866	70.7%
8/1	Gyratory N Ahead	U	3	N/A	F		1	17	-	354	1900	760	37.5%
8/2	Gyratory N Right Ahead	U	3	N/A	F		1	17	-	619	1900	760	56.3%

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9/1	Gyratory E Ahead	U	2	N/A	D		1	22	-	853	1900	971	80.7%
9/2	Gyratory E Right Ahead	U	2	N/A	D		1	22	-	848	1900	971	79.7%
10/1	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	932	Inf	Inf	0.0%
10/2	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	792	Inf	Inf	0.0%
11/1	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	440	Inf	Inf	0.0%
11/2	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	252	Inf	Inf	0.0%
12/1+12/2	Buckingham Road Ahead Left	U	2	N/A	C		1	13	-	935	1964:2119	611+507	83.6 : 83.6%

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Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>30.3</b>	<b>187.5</b>	<b>0.0</b>	<b>217.9</b>	-	-	-	-
<b>Tattenhoe Roundabout</b>	-	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>30.3</b>	<b>187.5</b>	<b>0.0</b>	<b>217.9</b>	-	-	-	-
1/2+1/1	1109	1109	-	-	-	3.0	3.8	-	6.8	22.2	8.7	3.8	12.5
1/3	835	835	-	-	-	2.5	3.2	-	5.7	24.6	9.3	3.2	12.5
2/1	794	794	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	1012	687	-	-	-	12.0	164.2	-	176.2	626.8	14.5	164.2	178.6
4/1	1035	1035	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	1002	1002	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	966	966	-	-	-	1.2	2.2	-	3.4	12.7	4.2	2.2	6.3
5/2	933	933	-	-	-	1.1	1.8	-	2.9	11.3	4.9	1.8	6.7
5/3	163	163	-	-	-	0.1	0.1	-	0.2	5.0	0.4	0.1	0.5
6/1	486	486	-	-	-	0.6	1.3	-	1.9	13.7	1.7	1.3	3.0
6/2	426	426	-	-	-	0.1	0.8	-	0.9	7.7	0.2	0.8	1.0
7/2+7/1	808	808	-	-	-	2.3	1.5	-	3.8	16.9	6.5	1.5	8.0
7/3	612	612	-	-	-	1.8	1.2	-	3.0	17.7	6.3	1.2	7.5
8/1	285	285	-	-	-	0.3	0.3	-	0.6	7.8	1.4	0.3	1.7
8/2	428	428	-	-	-	0.1	0.6	-	0.7	6.1	0.4	0.6	1.0
9/1	783	783	-	-	-	0.8	2.0	-	2.8	12.9	2.4	2.0	4.4
9/2	774	774	-	-	-	0.8	1.9	-	2.7	12.7	2.6	1.9	4.5
10/1	862	862	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	719	719	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	371	371	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	204	204	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1+12/2	935	935	-	-	-	3.6	2.5	-	6.1	23.5	5.8	2.5	8.3

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C1	Stream: 1 PRC for Signalled Lanes (%):	1.1	Total Delay for Signalled Lanes (pcuHr):	15.31	Cycle Time (s):	45
C1	Stream: 2 PRC for Signalled Lanes (%):	7.6	Total Delay for Signalled Lanes (pcuHr):	11.63	Cycle Time (s):	45
C1	Stream: 3 PRC for Signalled Lanes (%):	20.1	Total Delay for Signalled Lanes (pcuHr):	8.16	Cycle Time (s):	45
C1	Stream: 4 PRC for Signalled Lanes (%):	-63.7	Total Delay for Signalled Lanes (pcuHr):	182.75	Cycle Time (s):	45
	PRC Over All Lanes (%):	-63.7	Total Delay Over All Lanes(pcuHr):	217.86		

**Stage Timings**

**Scenario 2: '2033 Base + CD + D PM'** (FG2: '2033 Base + CD + Dev PM', Plan 1: 'Network Control Plan 1')

**Stage Stream: 1**

Stage	1	2
Duration	24	21
Change Point	1	30

**Stage Stream: 2**

Stage	1	2
Duration	17	28
Change Point	30	52

**Stage Stream: 3**

Stage	1	2
Duration	25	20
Change Point	1	31

**Stage Stream: 4**

Stage	2	1
Duration	34	11
Change Point	3	42

## Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	125.9%
Tattenhoe Roundabout	-	-	N/A	-	-		-	-	-	-	-	-	125.9%
1/2+1/1	A421 Standing Way (W) Left Ahead	U	1	N/A	A		1	24	-	996	2054:1838	794+520	75.8 : 75.8%
1/3	A421 Standing Way (W) Ahead	U	1	N/A	A		1	24	-	642	2054	934	68.8%
2/1	Sneshall Street Exit	U	N/A	N/A	-		-	-	-	903	Inf	Inf	0.0%
3/2+3/1	Sneshall Street Left Ahead	U	4	N/A	G		1	11	-	894	2217:2054	390+320	125.9 : 125.9%
4/1	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	787	Inf	Inf	0.0%
4/2	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	774	Inf	Inf	0.0%
5/1	Gyratory W Ahead	U	4	N/A	H		1	34	-	737	1900	1209	61.0%
5/2	Gyratory W Ahead	U	4	N/A	H		1	34	-	724	1900	1209	59.9%
5/3	Gyratory W Right	U	4	N/A	H		1	34	-	118	1900	1209	9.8%
6/1	Gyratory S Ahead	U	1	N/A	B		1	21	-	509	1900	760	67.0%
6/2	Gyratory S Right	U	1	N/A	B		1	21	-	335	1900	760	44.1%
7/2+7/1	A421 Standing Way (E) Ahead Left	U	3	N/A	E		1	25	-	961	2050:1863	847+409	76.5 : 76.5%
7/3	A421 Standing Way (E) Ahead	U	3	N/A	E		1	25	-	676	2050	969	69.8%
8/1	Gyratory N Ahead	U	3	N/A	F		1	20	-	414	1900	725	48.5%
8/2	Gyratory N Right Ahead	U	3	N/A	F		1	20	-	498	1900	725	54.7%

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9/1	Gyratory E Ahead	U	2	N/A	D		1	28	-	875	1900	1002	82.7%
9/2	Gyratory E Right Ahead	U	2	N/A	D		1	28	-	878	1900	1002	83.5%
10/1	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	976	Inf	Inf	0.0%
10/2	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	863	Inf	Inf	0.0%
11/1	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	570	Inf	Inf	0.0%
11/2	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	226	Inf	Inf	0.0%
12/1+12/2	Buckingham Road Ahead Left	U	2	N/A	C		1	17	-	930	1963:2119	611+341	97.7 : 97.7%



LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>32.4</b>	<b>119.2</b>	<b>0.0</b>	<b>151.6</b>	-	-	-	-
<b>Tattenhoe Roundabout</b>	-	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>32.4</b>	<b>119.2</b>	<b>0.0</b>	<b>151.6</b>	-	-	-	-
1/2+1/1	996	996	-	-	-	3.1	1.5	-	4.6	16.7	7.0	1.5	8.6
1/3	642	642	-	-	-	2.1	1.1	-	3.2	18.0	7.7	1.1	8.8
2/1	903	903	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	894	710	-	-	-	10.9	94.3	-	105.2	423.7	14.5	94.3	108.8
4/1	777	777	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	764	764	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	737	737	-	-	-	0.9	0.8	-	1.7	8.2	1.8	0.8	2.5
5/2	724	724	-	-	-	1.1	0.7	-	1.9	9.3	4.0	0.7	4.7
5/3	118	118	-	-	-	0.0	0.1	-	0.1	1.8	0.0	0.1	0.1
6/1	509	509	-	-	-	0.5	1.0	-	1.6	11.0	1.8	1.0	2.8
6/2	335	335	-	-	-	0.0	0.4	-	0.4	4.8	0.1	0.4	0.5
7/2+7/1	961	961	-	-	-	2.8	1.6	-	4.4	16.6	7.6	1.6	9.2
7/3	676	676	-	-	-	2.1	1.1	-	3.3	17.5	8.1	1.1	9.2
8/1	352	352	-	-	-	1.3	0.5	-	1.8	18.1	3.0	0.5	3.4
8/2	397	397	-	-	-	1.2	0.6	-	1.8	16.7	2.0	0.6	2.6
9/1	829	829	-	-	-	0.9	2.3	-	3.2	14.0	3.5	2.3	5.9
9/2	837	837	-	-	-	0.9	2.5	-	3.3	14.3	3.3	2.5	5.8
10/1	930	930	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	822	822	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	508	508	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	212	212	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1+12/2	930	930	-	-	-	4.4	10.7	-	15.1	58.3	9.6	10.7	20.3

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C1	Stream: 1 PRC for Signalled Lanes (%)	18.8	Total Delay for Signalled Lanes (pcuHr)	9.84	Cycle Time (s)	55
C1	Stream: 2 PRC for Signalled Lanes (%)	-8.5	Total Delay for Signalled Lanes (pcuHr)	21.62	Cycle Time (s)	55
C1	Stream: 3 PRC for Signalled Lanes (%)	17.6	Total Delay for Signalled Lanes (pcuHr)	11.32	Cycle Time (s)	55
C1	Stream: 4 PRC for Signalled Lanes (%)	-39.9	Total Delay for Signalled Lanes (pcuHr)	108.81	Cycle Time (s)	55
	PRC Over All Lanes (%)	-39.9	Total Delay Over All Lanes(pcuHr)	151.58		

**Stage Timings**

**Scenario 3: '2033 Base + CD + D with TP AM'** (FG3: '2033 Base + CD + Dev with TP AM', Plan 1: 'Network Control Plan 1')

**Stage Stream: 1**

Stage	1	2
Duration	25	15
Change Point	5	35

**Stage Stream: 2**

Stage	1	2
Duration	14	26
Change Point	35	4

**Stage Stream: 3**

Stage	1	2
Duration	23	17
Change Point	6	34

**Stage Stream: 4**

Stage	2	1
Duration	32	8
Change Point	5	42

## Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	145.9%
Tattenhoe Roundabout	-	-	N/A	-	-		-	-	-	-	-	-	145.9%
1/2+1/1	A421 Standing Way (W) Left Ahead	U	1	N/A	A		1	25	-	1074	2054:1838	951+375	81.0 : 81.0%
1/3	A421 Standing Way (W) Ahead	U	1	N/A	A		1	25	-	847	2054	1068	79.3%
2/1	Sneshall Street Exit	U	N/A	N/A	-		-	-	-	777	Inf	Inf	0.0%
3/2+3/1	Sneshall Street Left Ahead	U	4	N/A	G		1	8	-	996	2217:2039	354+329	145.9 : 145.9%
4/1	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	1023	Inf	Inf	0.0%
4/2	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	1021	Inf	Inf	0.0%
5/1	Gyratory W Ahead	U	4	N/A	H		1	32	-	922	1900	1254	73.5%
5/2	Gyratory W Ahead	U	4	N/A	H		1	32	-	920	1900	1254	73.4%
5/3	Gyratory W Right	U	4	N/A	H		1	32	-	157	1900	1254	12.5%
6/1	Gyratory S Ahead	U	1	N/A	B		1	15	-	473	1900	608	77.7%
6/2	Gyratory S Right	U	1	N/A	B		1	15	-	382	1900	608	62.8%
7/2+7/1	A421 Standing Way (E) Ahead Left	U	3	N/A	E		1	23	-	779	2050:1863	924+243	66.8 : 66.8%
7/3	A421 Standing Way (E) Ahead	U	3	N/A	E		1	23	-	606	2050	984	61.6%
8/1	Gyratory N Ahead	U	3	N/A	F		1	17	-	428	1900	684	49.8%
8/2	Gyratory N Right Ahead	U	3	N/A	F		1	17	-	523	1900	684	52.7%

LinSig V1 style report

9/1	Gyratory E Ahead	U	2	N/A	D		1	26	-	834	1900	1026	74.7%
9/2	Gyratory E Right Ahead	U	2	N/A	D		1	26	-	831	1900	1026	74.2%
10/1	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	912	Inf	Inf	0.0%
10/2	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	773	Inf	Inf	0.0%
11/1	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	509	Inf	Inf	0.0%
11/2	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	162	Inf	Inf	0.0%
12/1+12/2	Buckingham Road Ahead Left	U	2	N/A	C		1	14	-	875	1964:2119	589+452	84.0 : 84.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>32.2</b>	<b>175.8</b>	<b>0.0</b>	<b>208.0</b>	-	-	-	-
<b>Tattenhoe Roundabout</b>	-	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>32.2</b>	<b>175.8</b>	<b>0.0</b>	<b>208.0</b>	-	-	-	-
1/2+1/1	1074	1074	-	-	-	2.6	2.1	-	4.6	15.6	8.1	2.1	10.2
1/3	847	847	-	-	-	2.3	1.9	-	4.2	17.8	9.4	1.9	11.3
2/1	777	777	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	996	683	-	-	-	14.2	158.2	-	172.4	623.1	16.6	158.2	174.8
4/1	991	991	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	989	989	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	922	922	-	-	-	0.7	1.4	-	2.1	8.3	2.0	1.4	3.4
5/2	920	920	-	-	-	1.1	1.4	-	2.4	9.5	3.3	1.4	4.7
5/3	157	157	-	-	-	0.0	0.1	-	0.1	1.7	0.0	0.1	0.1
6/1	473	473	-	-	-	0.9	1.7	-	2.6	19.8	2.3	1.7	4.0
6/2	382	382	-	-	-	0.2	0.8	-	1.1	10.1	0.4	0.8	1.2
7/2+7/1	779	779	-	-	-	2.0	1.0	-	3.0	13.8	6.3	1.0	7.3
7/3	606	606	-	-	-	1.6	0.8	-	2.4	14.3	6.1	0.8	6.9
8/1	341	341	-	-	-	1.0	0.5	-	1.5	16.3	2.8	0.5	3.3
8/2	361	361	-	-	-	0.6	0.6	-	1.2	11.6	1.0	0.6	1.5
9/1	767	767	-	-	-	0.6	1.5	-	2.0	9.5	2.5	1.5	3.9
9/2	761	761	-	-	-	0.6	1.4	-	2.0	9.4	2.6	1.4	4.0
10/1	845	845	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	704	704	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	137	137	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1+12/2	875	875	-	-	-	3.8	2.5	-	6.4	26.2	6.3	2.5	8.9

LinSig V1 style report

C1	Stream: 1 PRC for Signalled Lanes (%)	11.1	Total Delay for Signalled Lanes (pcuHr)	12.51	Cycle Time (s)	50
C1	Stream: 2 PRC for Signalled Lanes (%)	7.1	Total Delay for Signalled Lanes (pcuHr)	10.38	Cycle Time (s)	50
C1	Stream: 3 PRC for Signalled Lanes (%)	34.8	Total Delay for Signalled Lanes (pcuHr)	8.11	Cycle Time (s)	50
C1	Stream: 4 PRC for Signalled Lanes (%)	-62.1	Total Delay for Signalled Lanes (pcuHr)	177.02	Cycle Time (s)	50
	PRC Over All Lanes (%)	-62.1	Total Delay Over All Lanes(pcuHr)	208.03		

**Stage Timings**

**Scenario 4: '2033 Base + CD + D with TP PM'** (FG4: '2033 Base + CD + Dev with TP PM', Plan 1: 'Network Control Plan 1')

**Stage Stream: 1**

Stage	1	2
Duration	25	20
Change Point	1	31

**Stage Stream: 2**

Stage	1	2
Duration	17	28
Change Point	31	53

**Stage Stream: 3**

Stage	1	2
Duration	26	19
Change Point	2	33

**Stage Stream: 4**

Stage	2	1
Duration	34	11
Change Point	3	42



## Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	122.7%
Tattenhoe Roundabout	-	-	N/A	-	-		-	-	-	-	-	-	122.7%
1/2+1/1	A421 Standing Way (W) Left Ahead	U	1	N/A	A		1	25	-	992	2054:1838	816+533	73.5 : 73.5%
1/3	A421 Standing Way (W) Ahead	U	1	N/A	A		1	25	-	634	2054	971	65.3%
2/1	Sneshall Street Exit	U	N/A	N/A	-		-	-	-	886	Inf	Inf	0.0%
3/2+3/1	Sneshall Street Left Ahead	U	4	N/A	G		1	11	-	873	2217:2054	390+322	122.7 : 122.7%
4/1	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	768	Inf	Inf	0.0%
4/2	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	749	Inf	Inf	0.0%
5/1	Gyratory W Ahead	U	4	N/A	H		1	34	-	718	1900	1209	59.4%
5/2	Gyratory W Ahead	U	4	N/A	H		1	34	-	699	1900	1209	57.8%
5/3	Gyratory W Right	U	4	N/A	H		1	34	-	115	1900	1209	9.5%
6/1	Gyratory S Ahead	U	1	N/A	B		1	20	-	494	1900	725	68.1%
6/2	Gyratory S Right	U	1	N/A	B		1	20	-	298	1900	725	41.1%
7/2+7/1	A421 Standing Way (E) Ahead Left	U	3	N/A	E		1	26	-	921	2050:1863	879+394	72.4 : 72.4%
7/3	A421 Standing Way (E) Ahead	U	3	N/A	E		1	26	-	645	2050	1006	64.1%
8/1	Gyratory N Ahead	U	3	N/A	F		1	19	-	404	1900	691	50.6%
8/2	Gyratory N Right Ahead	U	3	N/A	F		1	19	-	484	1900	691	57.3%

LinSig V1 style report

9/1	Gyratory E Ahead	U	2	N/A	D		1	28	-	816	1900	1002	78.2%
9/2	Gyratory E Right Ahead	U	2	N/A	D		1	28	-	817	1900	1002	78.4%
10/1	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	905	Inf	Inf	0.0%
10/2	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	791	Inf	Inf	0.0%
11/1	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	546	Inf	Inf	0.0%
11/2	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	275	Inf	Inf	0.0%
12/1+12/2	Buckingham Road Ahead Left	U	2	N/A	C		1	17	-	855	1964:2119	613+325	91.2 : 91.2%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>29.5</b>	<b>100.1</b>	<b>0.0</b>	<b>129.6</b>	-	-	-	-
<b>Tattenhoe Roundabout</b>	-	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>29.5</b>	<b>100.1</b>	<b>0.0</b>	<b>129.6</b>	-	-	-	-
1/2+1/1	992	992	-	-	-	2.9	1.4	-	4.2	15.4	6.7	1.4	8.0
1/3	634	634	-	-	-	1.9	0.9	-	2.9	16.4	7.2	0.9	8.2
2/1	886	886	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	873	712	-	-	-	10.1	83.3	-	93.4	385.3	13.5	83.3	96.8
4/1	759	759	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	740	740	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	718	718	-	-	-	0.8	0.7	-	1.6	7.8	1.7	0.7	2.4
5/2	699	699	-	-	-	1.1	0.7	-	1.8	9.1	3.5	0.7	4.2
5/3	115	115	-	-	-	0.0	0.1	-	0.1	1.8	0.0	0.1	0.1
6/1	494	494	-	-	-	0.6	1.1	-	1.7	12.0	1.9	1.1	2.9
6/2	298	298	-	-	-	0.1	0.3	-	0.4	5.0	0.1	0.3	0.5
7/2+7/1	921	921	-	-	-	2.5	1.3	-	3.8	14.8	7.1	1.3	8.4
7/3	645	645	-	-	-	1.9	0.9	-	2.8	15.4	7.2	0.9	8.1
8/1	349	349	-	-	-	1.2	0.5	-	1.7	17.8	2.7	0.5	3.2
8/2	396	396	-	-	-	0.9	0.7	-	1.6	14.5	1.5	0.7	2.1
9/1	783	783	-	-	-	0.8	1.8	-	2.6	11.9	3.1	1.8	4.9
9/2	786	786	-	-	-	0.8	1.8	-	2.6	11.9	3.1	1.8	4.9
10/1	872	872	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	760	760	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	491	491	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	251	251	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1+12/2	855	855	-	-	-	3.9	4.7	-	8.6	36.0	8.0	4.7	12.7

LinSig V1 style report

C1	Stream: 1 PRC for Signalled Lanes (%)	22.4	Total Delay for Signalled Lanes (pcuHr)	9.18	Cycle Time (s)	55
C1	Stream: 2 PRC for Signalled Lanes (%)	-1.3	Total Delay for Signalled Lanes (pcuHr)	13.73	Cycle Time (s)	55
C1	Stream: 3 PRC for Signalled Lanes (%)	24.4	Total Delay for Signalled Lanes (pcuHr)	9.87	Cycle Time (s)	55
C1	Stream: 4 PRC for Signalled Lanes (%)	-36.3	Total Delay for Signalled Lanes (pcuHr)	96.81	Cycle Time (s)	55
	PRC Over All Lanes (%)	-36.3	Total Delay Over All Lanes(pcuHr)	129.60		

**Stage Timings**

**Scenario 5: '2033 Base + CD + D - ST AM'** (FG5: '2033 Base + CD + Dev - ST AM', Plan 1: 'Network Control Plan 1')

**Stage Stream: 1**

Stage	1	2
Duration	23	17
Change Point	6	34

**Stage Stream: 2**

Stage	1	2
Duration	16	24
Change Point	32	3

**Stage Stream: 3**

Stage	1	2
Duration	23	17
Change Point	7	35

**Stage Stream: 4**

Stage	2	1
Duration	33	7
Change Point	8	46

## Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	145.4%
Tattenhoe Roundabout	-	-	N/A	-	-		-	-	-	-	-	-	145.4%
1/2+1/1	A421 Standing Way (W) Left Ahead	U	1	N/A	A		1	23	-	1050	2054:1838	926+233	90.6 : 90.6%
1/3	A421 Standing Way (W) Ahead	U	1	N/A	A		1	23	-	886	2054	986	89.9%
2/1	Sneshall Street Exit	U	N/A	N/A	-		-	-	-	697	Inf	Inf	0.0%
3/2+3/1	Sneshall Street Left Ahead	U	4	N/A	G		1	7	-	895	2217:2032	334+281	145.4 : 145.4%
4/1	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	1064	Inf	Inf	0.0%
4/2	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	1062	Inf	Inf	0.0%
5/1	Gyratory W Ahead	U	4	N/A	H		1	33	-	963	1900	1292	74.5%
5/2	Gyratory W Ahead	U	4	N/A	H		1	33	-	961	1900	1292	74.4%
5/3	Gyratory W Right	U	4	N/A	H		1	33	-	227	1900	1292	17.6%
6/1	Gyratory S Ahead	U	1	N/A	B		1	17	-	486	1900	684	71.0%
6/2	Gyratory S Right	U	1	N/A	B		1	17	-	426	1900	684	62.3%
7/2+7/1	A421 Standing Way (E) Ahead Left	U	3	N/A	E		1	23	-	806	2050:1863	922+250	68.8 : 68.8%
7/3	A421 Standing Way (E) Ahead	U	3	N/A	E		1	23	-	628	2050	984	63.8%
8/1	Gyratory N Ahead	U	3	N/A	F		1	17	-	421	1900	684	52.1%
8/2	Gyratory N Right Ahead	U	3	N/A	F		1	17	-	499	1900	684	50.8%

LinSig V1 style report

9/1	Gyratory E Ahead	U	2	N/A	D		1	24	-	800	1900	950	78.8%
9/2	Gyratory E Right Ahead	U	2	N/A	D		1	24	-	798	1900	950	78.6%
10/1	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	894	Inf	Inf	0.0%
10/2	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	757	Inf	Inf	0.0%
11/1	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	507	Inf	Inf	0.0%
11/2	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	249	Inf	Inf	0.0%
12/1+12/2	Buckingham Road Ahead Left	U	2	N/A	C		1	16	-	965	1962:2119	637+499	85.0 : 85.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>33.9</b>	<b>164.3</b>	<b>0.0</b>	<b>198.2</b>	-	-	-	-
<b>Tattenhoe Roundabout</b>	-	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>33.9</b>	<b>164.3</b>	<b>0.0</b>	<b>198.2</b>	-	-	-	-
1/2+1/1	1050	1050	-	-	-	3.1	4.4	-	7.6	25.9	10.7	4.4	15.2
1/3	886	886	-	-	-	2.9	4.1	-	7.0	28.5	11.1	4.1	15.2
2/1	697	697	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	895	616	-	-	-	12.6	141.3	-	153.9	619.1	14.1	141.3	155.4
4/1	1032	1032	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	1030	1030	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	963	963	-	-	-	0.8	1.5	-	2.2	8.3	1.4	1.5	2.9
5/2	961	961	-	-	-	1.2	1.4	-	2.6	9.9	5.0	1.4	6.4
5/3	227	227	-	-	-	0.0	0.1	-	0.1	1.7	0.0	0.1	0.1
6/1	486	486	-	-	-	0.7	1.2	-	1.9	14.1	2.0	1.2	3.2
6/2	426	426	-	-	-	0.1	0.8	-	0.9	7.8	0.2	0.8	1.0
7/2+7/1	806	806	-	-	-	2.1	1.1	-	3.2	14.2	6.5	1.1	7.6
7/3	628	628	-	-	-	1.7	0.9	-	2.6	14.8	6.5	0.9	7.3
8/1	356	356	-	-	-	1.7	0.5	-	2.2	22.2	4.1	0.5	4.6
8/2	347	347	-	-	-	1.5	0.5	-	2.0	20.7	2.4	0.5	2.9
9/1	749	749	-	-	-	0.9	1.8	-	2.7	12.9	2.5	1.8	4.3
9/2	746	746	-	-	-	0.9	1.8	-	2.7	12.9	2.7	1.8	4.5
10/1	843	843	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	706	706	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	442	442	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	200	200	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1+12/2	965	965	-	-	-	3.9	2.7	-	6.6	24.6	6.8	2.7	9.5



LinSig V1 style report

C1	Stream: 1 PRC for Signalled Lanes (%)	-0.6	Total Delay for Signalled Lanes (pcuHr)	17.42	Cycle Time (s)	50
C1	Stream: 2 PRC for Signalled Lanes (%)	5.9	Total Delay for Signalled Lanes (pcuHr)	11.97	Cycle Time (s)	50
C1	Stream: 3 PRC for Signalled Lanes (%)	30.9	Total Delay for Signalled Lanes (pcuHr)	9.95	Cycle Time (s)	50
C1	Stream: 4 PRC for Signalled Lanes (%)	-61.6	Total Delay for Signalled Lanes (pcuHr)	158.86	Cycle Time (s)	50
	PRC Over All Lanes (%)	-61.6	Total Delay Over All Lanes(pcuHr)	198.19		

**Stage Timings**

**Scenario 6: '2033 Base + CD + D - ST PM'** (FG6: '2033 Base + CD + Dev - ST PM', Plan 1: 'Network Control Plan 1')

**Stage Stream: 1**

Stage	1	2
Duration	24	21
Change Point	6	35

**Stage Stream: 2**

Stage	1	2
Duration	19	26
Change Point	34	3

**Stage Stream: 3**

Stage	1	2
Duration	19	26
Change Point	6	30

**Stage Stream: 4**

Stage	2	1
Duration	32	13
Change Point	7	44

## Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	98.7%
Tattenhoe Roundabout	-	-	N/A	-	-		-	-	-	-	-	-	98.7%
1/2+1/1	A421 Standing Way (W) Left Ahead	U	1	N/A	A		1	24	-	887	2054:1838	833+353	74.8 : 74.8%
1/3	A421 Standing Way (W) Ahead	U	1	N/A	A		1	24	-	654	2054	934	70.0%
2/1	Sneshall Street Exit	U	N/A	N/A	-		-	-	-	773	Inf	Inf	0.0%
3/2+3/1	Sneshall Street Left Ahead	U	4	N/A	G		1	13	-	770	2217:2050	436+344	98.7 : 98.7%
4/1	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	804	Inf	Inf	0.0%
4/2	A421 Standing Way (E) Exit	U	N/A	N/A	-		-	-	-	766	Inf	Inf	0.0%
5/1	Gyratory W Ahead	U	4	N/A	H		1	32	-	754	1900	1140	66.1%
5/2	Gyratory W Ahead	U	4	N/A	H		1	32	-	716	1900	1140	62.8%
5/3	Gyratory W Right	U	4	N/A	H		1	32	-	142	1900	1140	12.5%
6/1	Gyratory S Ahead	U	1	N/A	B		1	21	-	509	1900	760	67.0%
6/2	Gyratory S Right	U	1	N/A	B		1	21	-	335	1900	760	44.1%
7/2+7/1	A421 Standing Way (E) Ahead Left	U	3	N/A	E		1	19	-	961	2050:1863	701+338	92.5 : 92.5%
7/3	A421 Standing Way (E) Ahead	U	3	N/A	E		1	19	-	692	2050	745	92.8%
8/1	Gyratory N Ahead	U	3	N/A	F		1	26	-	370	1900	933	39.7%
8/2	Gyratory N Right Ahead	U	3	N/A	F		1	26	-	442	1900	933	47.4%

LinSig V1 style report

9/1	Gyratory E Ahead	U	2	N/A	D		1	26	-	822	1900	933	88.1%
9/2	Gyratory E Right Ahead	U	2	N/A	D		1	26	-	823	1900	933	88.2%
10/1	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	947	Inf	Inf	0.0%
10/2	A421 Standing Way (W) Exit	U	N/A	N/A	-		-	-	-	833	Inf	Inf	0.0%
11/1	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	526	Inf	Inf	0.0%
11/2	Buckingham Road Exit	U	N/A	N/A	-		-	-	-	294	Inf	Inf	0.0%
12/1+12/2	Buckingham Road Ahead Left	U	2	N/A	C		1	19	-	979	1960:2119	662+341	97.6 : 97.6%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	26.0	46.8	0.0	72.9	-	-	-	-
<b>Tattenhoe Roundabout</b>	-	-	0	0	0	26.0	46.8	0.0	72.9	-	-	-	-
1/2+1/1	887	887	-	-	-	2.7	1.5	-	4.2	17.1	7.4	1.5	8.9
1/3	654	654	-	-	-	2.2	1.2	-	3.3	18.4	8.0	1.2	9.2
2/1	773	773	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	770	770	-	-	-	4.2	11.6	-	15.8	73.8	8.4	11.6	20.0
4/1	804	804	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	766	766	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	754	754	-	-	-	0.9	1.0	-	1.9	9.0	1.9	1.0	2.8
5/2	716	716	-	-	-	1.3	0.8	-	2.1	10.6	4.0	0.8	4.8
5/3	142	142	-	-	-	0.0	0.1	-	0.1	1.9	0.0	0.1	0.1
6/1	509	509	-	-	-	0.5	1.0	-	1.5	10.9	1.9	1.0	2.9
6/2	335	335	-	-	-	0.1	0.4	-	0.5	5.1	0.1	0.4	0.5
7/2+7/1	961	961	-	-	-	4.1	5.4	-	9.5	35.6	9.2	5.4	14.6
7/3	692	692	-	-	-	3.2	5.4	-	8.6	44.8	10.0	5.4	15.4
8/1	370	370	-	-	-	0.9	0.3	-	1.2	11.6	2.8	0.3	3.2
8/2	442	442	-	-	-	0.6	0.4	-	1.1	8.8	1.3	0.4	1.8
9/1	822	822	-	-	-	0.6	3.5	-	4.0	17.7	2.6	3.5	6.1
9/2	823	823	-	-	-	0.5	3.5	-	4.0	17.4	2.0	3.5	5.5
10/1	947	947	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	833	833	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	526	526	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	294	294	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1+12/2	979	979	-	-	-	4.3	10.8	-	15.0	55.2	10.5	10.8	21.3

LinSig V1 style report

C1	Stream: 1 PRC for Signalled Lanes (%)	20.3	Total Delay for Signalled Lanes (pcuHr)	9.56	Cycle Time (s)	55
C1	Stream: 2 PRC for Signalled Lanes (%)	-8.5	Total Delay for Signalled Lanes (pcuHr)	23.04	Cycle Time (s)	55
C1	Stream: 3 PRC for Signalled Lanes (%)	-3.1	Total Delay for Signalled Lanes (pcuHr)	20.39	Cycle Time (s)	55
C1	Stream: 4 PRC for Signalled Lanes (%)	-9.7	Total Delay for Signalled Lanes (pcuHr)	19.87	Cycle Time (s)	55
	PRC Over All Lanes (%)	-9.7	Total Delay Over All Lanes(pcuHr)	72.86		

<b>Junctions 9</b>
<b>ARCADY 9 - Roundabout Module</b>
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**Filename:** 210115 J6 - Post Calibration Adjustment 3v6 - with taper.j9

**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J6

**Report generation date:** 27/01/2021 08:49:25

- »2033 Base + CD + D, AM
- »2033 Base + CD + D, PM
- »2033 Base + CD + D with TP, AM
- »2033 Base + CD + D with TP, PM
- »2033 Base + CD + D - ST, AM
- »2033 Base + CD + D - ST, PM

### Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
[Lane Simulation] - 2033 Base + CD + D										
A - Standing Way (E)	D15	2.9	6.67		A	D16	4.5	8.63		A
B - Whaddon Road		1.3	7.35		A		1.0	6.77		A
C - Buckingham Road (W)		28.1	48.61		E		4.9	12.40		B
[Lane Simulation] - 2033 Base + CD + D with TP										
A - Standing Way (E)	D17	3.0	6.57		A	D18	4.2	8.41		A
B - Whaddon Road		1.3	7.29		A		0.9	6.56		A
C - Buckingham Road (W)		24.2	42.51		E		5.0	10.90		B
[Lane Simulation] - 2033 Base + CD + D - ST										
A - Standing Way (E)	D19	2.6	6.36		A	D20	3.5	8.06		A
B - Whaddon Road		1.2	7.17		A		1.1	6.56		A
C - Buckingham Road (W)		32.1	55.86		F		4.2	9.63		A

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.*

### File summary

#### File Description

Title	Bottledump Roundabout
Location	51°59'11.04"N, 0°48'13.16"W
Site number	6
Date	10/12/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
Description	

### Units

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



The junction diagram reflects the last run of Junctions.

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓		✓	293134588	394	72.95

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓

### Analysis Set Details

ID	Use Lane Simulation	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)



A1	✓	✓	✓	D15,D16,D17,D18,D19,D20	100.000	100.000
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# 2033 Base + CD + D, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	26.22	D

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Standing Way (E)	
B	Whaddon Road	
C	Buckingham Road (W)	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Standing Way (E)	7.50	7.50	0.0	37.2	56.3	27.0	
B - Whaddon Road	8.20	8.20	0.0	50.0	56.3	11.5	
C - Buckingham Road (W)	8.20	8.20	0.0	38.6	56.3	48.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Standing Way (E)	Direct		125
B - Whaddon Road	None		
C - Buckingham Road (W)	None		

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Standing Way (E)	0.703	2473
B - Whaddon Road	0.786	2717
C - Buckingham Road (W)	0.690	2388

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

### Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
A - Standing Way (E)	Apportion from lane geometry	10.00
B - Whaddon Road	Evenly split	10.00
C - Buckingham Road (W)	Evenly split	10.00

### Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Bottleneck capacity (PCU/hr)	Bottleneck type	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised	
A - Standing Way (E)	Entry	1	1	B, C		Infinity				0	99999		
			2	A, C		Infinity				0	99999		
	Exit	1	1			Infinity				0	99999		
			2			Infinity				0	99999		
	CircLink	1	1	A		✓	8.00				0	99999	
			2	A, B, C		✓	8.00				0	99999	
CircBase	1	1	B, C		✓	2.50				0	99999		

B - Whaddon Road	Entry	1	1	C	✓	4.00				0	99999
			2	A, B	✓	4.00				0	99999
	Exit	1	1			Infinity				0	99999
			1	B, C	✓	4.00				0	99999
	CircLink	1	2	A, C	✓	4.00				0	99999
			1	C	✓	2.50				0	99999
CircBase	1	2	A, C	✓	2.50				0	99999	
		2	1	(A, B, C)		Infinity				0	99999
C - Buckingham Road (W)	Entry	1	1	A	✓	4.00				0	99999
			2	A, B, C	✓	4.00				0	99999
			2	1	(A, B, C)		Infinity				0
	Exit	1	1		✓	26.00				0	99999
			2		✓	26.00				0	99999
	CircLink	1	1	C	✓	4.00				0	99999
			2	A, B, C	✓	4.00				0	99999
	CircBase	1	1	A, B	✓	2.50				0	99999
	Exit	2	1		✓	11.00	✓	1800	Random	0	99999
			3	1		✓	Infinity				0

### Entry Lane Geometry

Arm	Side	Lane level	Lane	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)
A - Standing Way (E)	Entry	1	1	3.00	3.00	0.0	38.0	56.3	29.0
			2	3.75	4.00	1.0	40.0	56.3	27.0

### Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A - Standing Way (E)	Entry	1	1	0.305	1072
			2	0.398	1401
B - Whaddon Road	Entry	1	1	0.393	1358
			2	0.393	1358
C - Buckingham Road (W)	Entry	1	1	0.345	1194
			2	0.345	1194

### Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm		
			Standing Way (E)	Whaddon Road	Buckingham Road (W)
A - Standing Way (E)	1	1		✓	✓
		2	✓		✓
B - Whaddon Road	1	1			✓
		2	✓	✓	
C - Buckingham Road (W)	1	1	✓		
		2	✓	✓	✓
	2	1	✓	✓	✓

### Summary of Circulating Lane allowed movements

Arm	Side	Lane Level	Lane	Destination arm		
				Standing Way (E)	Whaddon Road	Buckingham Road (W)
A - Standing Way (E)	CircBase	1	1		✓	✓
			1	✓		
B - Whaddon Road	CircLink	1	2	✓	✓	✓
			1			✓
C - Buckingham Road (W)	CircBase	1	1	✓	✓	
			1			✓
C - Buckingham Road (W)	CircLink	1	2	✓	✓	✓
			2	✓	✓	✓

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Standing Way (E)		ONE HOUR	✓	1331	100.000
B - Whaddon Road		ONE HOUR	✓	586	100.000
C - Buckingham Road (W)		ONE HOUR	✓	1653	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	3	223	1104
	B - Whaddon Road	324	0	262
	C - Buckingham Road (W)	1519	134	0

### Proportions

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	0.00	0.17	0.83
	B - Whaddon Road	0.55	0.00	0.45
	C - Buckingham Road (W)	0.92	0.08	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	33	2	6
	B - Whaddon Road	2	0	3
	C - Buckingham Road (W)	4	6	0

### Average PCU Per Veh

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	1.333	1.022	1.057
	B - Whaddon Road	1.022	1.000	1.026
	C - Buckingham Road (W)	1.042	1.056	1.000

## Detailed Demand Data

### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	07:30-07:45	1002	1054
	07:45-08:00	1197	1258
	08:00-08:15	1466	1541
	08:15-08:30	1466	1541
	08:30-08:45	1197	1258
	08:45-09:00	1002	1054
B - Whaddon Road	07:30-07:45	441	452
	07:45-08:00	527	539
	08:00-08:15	645	661
	08:15-08:30	645	661
	08:30-08:45	527	539
	08:45-09:00	441	452
C - Buckingham Road (W)	07:30-07:45	1244	1298
	07:45-08:00	1486	1550
	08:00-08:15	1820	1899
	08:15-08:30	1820	1899
	08:30-08:45	1486	1550
	08:45-09:00	1244	1298

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	6.67	2.9	A	1220	1829
B - Whaddon Road	7.35	1.3	A	533	800
C - Buckingham Road (W)	48.61	28.1	E	1514	2271

### Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1005	251	99	1006	1051	1379	0.0	1.3	4.458	A
B - Whaddon Road	437	109	837	438	448	268	0.0	0.5	4.723	A
C - Buckingham Road (W)	1232	308	244	1234	1286	1029	0.0	1.9	5.808	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1203	301	120	1202	1264	1654	1.3	1.7	5.212	A
B - Whaddon Road	520	130	999	519	537	324	0.5	0.9	5.502	A
C - Buckingham Road (W)	1485	371	289	1486	1542	1232	1.9	3.4	7.973	A

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1459	365	145	1459	1538	1986	1.7	2.8	6.564	A
B - Whaddon Road	638	159	1213	636	657	390	0.9	1.3	7.117	A
C - Buckingham Road (W)	1826	456	357	1774	1831	1499	3.4	19.4	26.666	D

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1462	365	143	1460	1540	1995	2.8	2.8	6.669	A
B - Whaddon Road	638	160	1209	640	656	393	1.3	1.2	7.354	A
C - Buckingham Road (W)	1809	452	354	1784	1862	1500	19.4	27.9	48.612	E

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1193	298	122	1193	1263	1676	2.8	1.7	5.200	A
B - Whaddon Road	526	132	994	527	544	320	1.2	0.8	5.808	A
C - Buckingham Road (W)	1486	371	295	1503	1647	1226	27.9	3.8	22.028	C

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	997	249	100	999	1055	1394	1.7	1.2	4.546	A
B - Whaddon Road	440	110	829	440	454	269	0.8	0.6	4.851	A
C - Buckingham Road (W)	1244	311	248	1246	1309	1023	3.8	2.0	5.995	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

## Lanes: Main Results for each time segment

## 07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	516	996	0.518	517	537	0.0	0.7	5.259	A
			2	A, C	489	1286	0.380	488	514	0.0	0.6	3.611	A
	Exit	1	1		694			694	718	0.0	0.0	0.000	A
			2		685			685	713	0.0	0.0	0.000	A
	CircLink	1	1	A	694			694	715	0.0	0.0	0.000	A
			2	A, B, C	783			783	822	0.0	0.0	0.000	A
CircBase	1	1	B, C	99			99	106	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	196	987	0.199	196	200	0.0	0.2	4.630	A
			2	A, B	241	989	0.244	242	248	0.0	0.3	4.760	A
	Exit	1	1		268			268	277	0.0	0.0	0.000	A
			2		681			681	716	0.0	0.0	0.000	A
	CircLink	1	1	B, C	681			681	716	0.0	0.0	0.000	A
			2	A, C	423			423	441	0.0	0.0	0.000	A
CircBase	1	1	C	415			415	440	0.0	0.0	0.000	A	
		2	A, C	421			421	439	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	437			437	450	0.0	0.0	0.021	A	
C - Buckingham Road (W)	Entry	1	1	A	602	1063	0.567	603	625	0.0	0.9	5.388	A
			2	A, B, C	630	1058	0.595	631	661	0.0	1.0	5.672	A
	CircLink	1	2	A, B, C	760			760	790	0.0	0.0	0.000	A
	Entry	2	1	(A, B, C)	1232			1232	1294	0.0	0.1	0.274	A

C - Buckingham Road (W)	Exit	1	1		517			517	539	0.0	0.0	0.041	A	
			2		513			513	538	0.0	0.0	0.042	A	
	CircLink	1	1	C	514			514	538	0.0	0.0	0.000	A	
	CircBase	1	1	A, B	244			244	251	0.0	0.0	0.000	A	
	Exit		2	1		1030			1029	1069	0.0	1.6	5.230	A
			3	1		1029			1029	1069	0.0	0.0	0.000	A

## 07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	604	993	0.609	604	632	0.7	1.0	6.197	A
			2	A, C	598	1276	0.469	598	632	0.6	0.7	4.215	A
	Exit	1	1		832			832	857	0.0	0.0	0.000	A
			2		822			822	857	0.0	0.0	0.000	A
	CircLink	1	1	A	820			820	854	0.0	0.0	0.000	A
			2	A, B, C	954			954	988	0.0	0.0	0.000	A
CircBase	1	1	B, C	120			120	127	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	234	921	0.254	233	242	0.2	0.4	5.220	A
			2	A, B	286	926	0.309	286	295	0.3	0.5	5.580	A
	Exit	1	1		324			324	333	0.0	0.0	0.000	A
			2		819			819	859	0.0	0.0	0.000	A
	CircLink	1	1	B, C	819			819	859	0.0	0.0	0.000	A
			2	A, C	503			503	532	0.0	0.0	0.000	A
CircBase	1	1	C	491			491	525	0.0	0.0	0.000	A	
		2	A, C	508			508	533	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	520			520	538	0.0	0.0	0.083	A	
C - Buckingham Road (W)	Entry	1	1	A	724	1049	0.690	725	753	0.9	1.3	6.546	A
			2	A, B, C	760	1046	0.726	760	789	1.0	1.5	6.886	A
	CircLink	1	2	A, B, C	898			898	946	0.0	0.0	0.000	A
			1	(A, B, C)	1485			1484	1545	0.1	0.7	1.251	A
	Exit	1	1		615			615	648	0.0	0.1	0.267	A
			2		614			613	647	0.0	0.1	0.270	A
	CircLink	1	1	C	619			619	649	0.0	0.0	0.000	A
	CircBase	1	1	A, B	289			289	300	0.0	0.0	0.000	A
Exit		2	1		1229			1232	1292	1.6	2.3	7.325	A
		3	1		1232			1232	1292	0.0	0.0	0.000	A

## 08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	715	983	0.727	715	745	1.0	1.6	7.898	A
			2	A, C	744	1266	0.588	744	793	0.7	1.2	5.294	A
	Exit	1	1		993			993	1027	0.0	0.0	0.000	A
			2		993			993	1023	0.0	0.0	0.000	A
	CircLink	1	1	A	991			991	1028	0.0	0.0	0.000	A
			2	A, B, C	1139			1139	1171	0.0	0.0	0.000	A
CircBase	1	1	B, C	145			145	150	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	285	831	0.342	283	293	0.4	0.6	6.376	A
			2	A, B	353	837	0.422	353	364	0.5	0.7	7.022	A
	Exit	1	1		390			390	401	0.0	0.0	0.000	A
			2		993			993	1040	0.0	0.0	0.000	A
	CircLink	1	1	B, C	993			993	1040	0.0	0.0	0.000	A
			2	A, C	610			610	649	0.0	0.0	0.000	A
CircBase	1	1	C	604			604	638	0.0	0.0	0.000	A	
		2	A, C	610			610	650	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	638			638	658	0.0	0.1	0.380	A	
C - Buckingham Road (W)	Entry	1	1	A	876	1024	0.855	876	900	1.3	2.0	8.244	A
			2	A, B, C	899	1023	0.879	898	931	1.5	2.2	8.711	A
	CircLink	1	2	A, B, C	1105			1105	1155	0.0	0.0	0.000	A
			1	(A, B, C)	1826			1775	1837	0.7	15.3	18.180	C
	Exit	1	1		745			748	784	0.1	0.8	3.560	A
			2		748			749	786	0.1	0.9	3.560	A
	CircLink	1	1	C	744			744	790	0.0	0.0	0.000	A
	CircBase	1	1	A, B	357			357	369	0.0	0.0	0.000	A
Exit		2	1		1496			1499	1557	2.3	5.2	12.255	B
		3	1		1499			1499	1557	0.0	0.0	0.000	A

## 08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	712	982	0.726	711	746	1.6	1.6	8.031	A
			2	A, C	749	1267	0.591	748	795	1.2	1.2	5.373	A
	Exit	1	1		997			997	1038	0.0	0.0	0.000	A
			2		998			998	1037	0.0	0.0	0.000	A

	CircLink	1	1	A	992			992	1036	0.0	0.0	0.000	A	
			2	A, B, C	1146			1146	1190	0.0	0.0	0.000	A	
	CircBase	1	1	B, C	143			143	152	0.0	0.0	0.000	A	
	B - Whaddon Road	Entry	1	1	C	288	834	0.345	289	297	0.6	0.5	6.576	A
				2	A, B	350	838	0.418	351	359	0.7	0.7	7.272	A
		Exit	1	1		393			393	404	0.0	0.0	0.000	A
CircLink		1	1	B, C	997			997	1045	0.0	0.0	0.000	A	
			2	A, C	606			606	646	0.0	0.0	0.000	A	
CircBase		1	1	C	605			605	646	0.0	0.0	0.000	A	
	2		A, C	604			604	643	0.0	0.0	0.000	A		
Entry	2	1	(A, B, C)	638			638	656	0.1	0.1	0.397	A		
C - Buckingham Road (W)	Entry	1	1	A	877	1024	0.856	878	919	2.0	2.1	8.336	A	
			2	A, B, C	904	1023	0.884	905	943	2.2	2.2	8.947	A	
	CircLink	1	2	A, B, C	1098			1098	1152	0.0	0.0	0.000	A	
	Entry	2	1	(A, B, C)	1809			1780	1863	15.3	23.7	39.986	E	
	Exit	1	1		745			748	791	0.8	0.8	4.474	A	
			2		750			752	789	0.9	0.8	4.489	A	
	CircLink	1	1	C	752			752	792	0.0	0.0	0.000	A	
	CircBase	1	1	A, B	354			354	364	0.0	0.0	0.000	A	
Exit	2	1		1500			1500	1580	5.2	5.2	12.846	B		
		3	1		1500			1500	1580	0.0	0.0	0.000	A	

## 08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	602	988	0.609	602	630	1.6	1.0	6.200	A
			2	A, C	591	1274	0.464	591	634	1.2	0.7	4.196	A
	Exit	1	1		844			844	911	0.0	0.0	0.000	A
			2		831			831	907	0.0	0.0	0.000	A
	CircLink	1	1	A	837			837	910	0.0	0.0	0.000	A
			2	A, B, C	961			961	1042	0.0	0.0	0.000	A
CircBase	1	1	B, C	122			122	135	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	235	919	0.255	235	243	0.5	0.4	5.364	A
			2	A, B	292	925	0.315	292	301	0.7	0.5	5.913	A
	Exit	1	1		320			320	340	0.0	0.0	0.000	A
			2		819			819	867	0.0	0.0	0.000	A
	CircLink	1	1	B, C	496			496	531	0.0	0.0	0.000	A
			2	A, C	496			496	530	0.0	0.0	0.000	A
CircBase	1	1	C	496			496	530	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	526			527	543	0.1	0.0	0.143	A	
			2	A, B, C	776	1044	0.743	776	841	2.2	1.5	7.443	A
C - Buckingham Road (W)	Entry	1	1	A	728	1046	0.696	727	806	2.1	1.4	7.086	A
			2	A, B, C	776	1044	0.743	776	841	2.2	1.5	7.443	A
	CircLink	1	2	A, B, C	903			903	954	0.0	0.0	0.000	A
	Entry	2	1	(A, B, C)	1486			1505	1641	23.7	1.0	14.819	B
	Exit	1	1		613			612	652	0.8	0.1	0.691	A
			2		614			614	650	0.8	0.1	0.679	A
	CircLink	1	1	C	619			619	648	0.0	0.0	0.000	A
	CircBase	1	1	A, B	295			295	306	0.0	0.0	0.000	A
Exit	2	1		1226			1226	1313	5.2	2.7	8.035	A	
		3	1		1226			1226	1313	0.0	0.0	0.000	A

## 08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	511	994	0.514	512	539	1.0	0.7	5.364	A
			2	A, C	485	1280	0.379	486	516	0.7	0.4	3.682	A
	Exit	1	1		701			701	731	0.0	0.0	0.000	A
			2		693			693	726	0.0	0.0	0.000	A
	CircLink	1	1	A	697			697	728	0.0	0.0	0.000	A
			2	A, B, C	796			796	836	0.0	0.0	0.000	A
CircBase	1	1	B, C	100			100	107	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	195	987	0.198	194	202	0.4	0.3	4.634	A
			2	A, B	245	992	0.247	245	252	0.5	0.3	4.959	A
	Exit	1	1		269			269	280	0.0	0.0	0.000	A
			2		683			683	719	0.0	0.0	0.000	A
	CircLink	1	1	B, C	416			416	444	0.0	0.0	0.000	A
			2	A, C	416			416	442	0.0	0.0	0.000	A
CircBase	1	1	C	413			413	440	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	440			440	453	0.0	0.0	0.036	A	
C - Buckingham Road (W)	Entry	1	1	A	601	1062	0.566	602	634	1.4	0.9	5.528	A
			2	A, B, C	642	1057	0.607	643	675	1.5	1.0	5.765	A
	CircLink	1	2	A, B, C	760			760	794	0.0	0.0	0.000	A
Entry	2	1	(A, B, C)	1244			1243	1305	1.0	0.1	0.356	A	

C - Buckingham Road (W)	Exit	1	1		508			508	539	0.1	0.0	0.061	A
			2		513			513	542	0.1	0.0	0.060	A
	CircLink	1	1	C	509			509	542	0.0	0.0	0.000	A
	CircBase	1	1	A, B	248			248	255	0.0	0.0	0.000	A
	Exit	2	1		1022			1023	1086	2.7	1.5	5.471	A
		3	1		1023			1023	1086	0.0	0.0	0.000	A



# 2033 Base + CD + D, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	10.07	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Standing Way (E)		ONE HOUR	✓	1531	100.000
B - Whaddon Road		ONE HOUR	✓	422	100.000
C - Buckingham Road (W)		ONE HOUR	✓	1509	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	2	230	1299
	B - Whaddon Road	251	0	171
	C - Buckingham Road (W)	1267	242	0

### Proportions

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	0.00	0.15	0.85
	B - Whaddon Road	0.59	0.00	0.41
	C - Buckingham Road (W)	0.84	0.16	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	50	1	2
	B - Whaddon Road	0	0	3
	C - Buckingham Road (W)	3	2	0

### Average PCU Per Veh

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	1.500	1.010	1.018
	B - Whaddon Road	1.000	1.000	1.031
	C - Buckingham Road (W)	1.025	1.019	1.000

## Detailed Demand Data

### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	16:45-17:00	1153	1174
	17:00-17:15	1377	1401
	17:15-17:30	1686	1716

	17:30-17:45	1686	1716
	17:45-18:00	1377	1401
	18:00-18:15	1153	1174
B - Whaddon Road	16:45-17:00	318	322
	17:00-17:15	379	384
	17:15-17:30	465	471
	17:30-17:45	465	471
	17:45-18:00	379	384
	18:00-18:15	318	322
C - Buckingham Road (W)	16:45-17:00	1136	1164
	17:00-17:15	1357	1389
	17:15-17:30	1661	1702
	17:30-17:45	1661	1702
	17:45-18:00	1357	1389
	18:00-18:15	1136	1164

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	8.63	4.5	A	1397	2096
B - Whaddon Road	6.77	1.0	A	379	568
C - Buckingham Road (W)	12.40	4.9	B	1384	2076

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1103	276	183	1107	1161	1155	0.0	1.5	4.765	A
B - Whaddon Road	321	80	937	323	319	353	0.0	0.4	4.471	A
C - Buckingham Road (W)	1141	285	201	1136	1159	1066	0.0	1.8	4.931	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1382	345	216	1384	1394	1350	1.5	2.4	5.583	A
B - Whaddon Road	369	92	1175	370	377	426	0.4	0.6	5.215	A
C - Buckingham Road (W)	1345	336	220	1345	1382	1332	1.8	2.2	6.481	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1666	417	251	1668	1706	1676	2.4	4.5	8.284	A
B - Whaddon Road	448	112	1423	446	464	496	0.6	1.0	6.554	A
C - Buckingham Road (W)	1646	412	271	1655	1685	1576	2.2	4.6	9.977	A

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1681	420	267	1681	1713	1688	4.5	4.2	8.631	A
B - Whaddon Road	458	115	1430	460	471	518	1.0	0.8	6.768	A
C - Buckingham Road (W)	1666	416	271	1683	1703	1594	4.6	4.8	12.402	B

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1407	352	216	1404	1412	1346	4.2	2.3	6.072	A
B - Whaddon Road	365	91	1193	366	381	427	0.8	0.4	5.481	A
C - Buckingham Road (W)	1339	335	218	1344	1401	1350	4.8	1.9	6.508	A

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

A - Standing Way (E)	1144	286	185	1143	1174	1165	2.3	1.6	4.906	A
B - Whaddon Road	309	77	969	309	320	359	0.4	0.4	4.650	A
C - Buckingham Road (W)	1167	292	185	1165	1178	1093	1.9	1.5	4.990	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	554	996	0.556	557	577	0.0	0.9	5.689	A
			2	A, C	549	1303	0.421	550	584	0.0	0.7	3.850	A
	Exit	1	1		579			579	586	0.0	0.0	0.000	A
			2		576			576	584	0.0	0.0	0.000	A
	CircLink	1	1	A	561			561	577	0.0	0.0	0.000	A
			2	A, B, C	777			777	775	0.0	0.0	0.000	A
CircBase	1	1	B, C	183			183	182	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	124	952	0.130	125	129	0.0	0.1	4.241	A
			2	A, B	198	983	0.201	199	191	0.0	0.2	4.616	A
	Exit	1	1		353			353	357	0.0	0.0	0.000	A
			1	B, C	819			819	847	0.0	0.0	0.000	A
	CircLink	1	1	A, C	471			471	496	0.0	0.0	0.000	A
			2	A, C	471			471	496	0.0	0.0	0.000	A
CircBase	1	1	C	473			473	487	0.0	0.0	0.000	A	
C - Buckingham Road (W)	Entry	2	1	(A, B, C)	321			322	321	0.0	0.0	0.004	A
			1	A	542	1097	0.494	538	542	0.0	0.9	4.628	A
	CircLink	1	1	A, B, C	737			737	751	0.0	0.0	0.000	A
			2	(A, B, C)	1141			1142	1166	0.0	0.0	0.061	A
	Exit	1	1		524			524	551	0.0	0.0	0.086	A
			2		535			535	561	0.0	0.0	0.080	A
CircLink	1	1	C	523			523	554	0.0	0.0	0.000	A	
CircBase	1	1	A, B	201			201	193	0.0	0.0	0.000	A	
Exit	2	1		1059			1066	1107	0.0	1.2	5.405	A	
			3	1	1066			1066	1107	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	666	993	0.671	668	673	0.9	1.3	6.748	A
			2	A, C	716	1285	0.556	716	721	0.7	1.1	4.490	A
	Exit	1	1		662			662	690	0.0	0.0	0.000	A
			2		687			687	698	0.0	0.0	0.000	A
	CircLink	1	1	A	673			673	697	0.0	0.0	0.000	A
			2	A, B, C	892			892	909	0.0	0.0	0.000	A
CircBase	1	1	B, C	216			216	219	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	151	856	0.176	152	157	0.1	0.2	4.896	A
			2	A, B	219	889	0.246	218	220	0.2	0.4	5.344	A
	Exit	1	1		426			426	426	0.0	0.0	0.000	A
			1	B, C	1019			1019	1019	0.0	0.0	0.000	A
	CircLink	1	1	A, C	581			581	594	0.0	0.0	0.000	A
			2	A, C	581			581	594	0.0	0.0	0.000	A
CircBase	1	1	C	591			591	594	0.0	0.0	0.000	A	
C - Buckingham Road (W)	Entry	2	1	(A, B, C)	369			369	378	0.0	0.0	0.053	A
			1	A	637	1095	0.582	639	655	0.9	0.8	5.428	A
	CircLink	1	1	A, B, C	705	1087	0.649	706	727	0.9	1.1	6.178	A
			2	A, B, C	879			879	894	0.0	0.0	0.000	A
	Exit	1	1		1345			1342	1383	0.0	0.3	0.658	A
			2		671			672	677	0.0	0.0	0.308	A
CircLink	1	1	C	653			654	663	0.0	0.0	0.339	A	
CircBase	1	1	A, B	220			220	224	0.0	0.0	0.000	A	
Exit	2	1		1326			1332	1335	1.2	2.4	7.737	A	
			3	1	1332			1332	1335	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
			1	B, C	769	978	0.785	773	794	1.3	2.4	10.063	B

A - Standing Way (E)	Entry	1	2	A, C	898	1276	0.704	895	912	1.1	2.1	6.729	A	
		Exit	1	1		836			836	848	0.0	0.0	0.000	A
			2		840			840	848	0.0	0.0	0.000	A	
	CircLink	1	1		A	822			822	847	0.0	0.0	0.000	A
2				A, B, C	1105			1105	1115	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	180	766	0.236	177	192	0.2	0.4	5.937	A	
			2	A, B	268	789	0.339	269	272	0.4	0.5	6.832	A	
	Exit	1	1		496			496	520	0.0	0.0	0.000	A	
			1		B, C	1191			1191	1243	0.0	0.0	0.000	A
	CircLink	1	2		A, C	727			727	728	0.0	0.0	0.000	A
			1		C	697			697	718	0.0	0.0	0.000	A
	CircBase	1	2		A, C	725			725	733	0.0	0.0	0.000	A
			2	1	(A, B, C)	448			448	466	0.0	0.0	0.086	A
	C - Buckingham Road (W)	Entry	1	1	A	784	1073	0.731	786	809	0.8	1.6	6.677	A
				2	A, B, C	869	1075	0.808	869	876	1.1	1.8	7.340	A
CircLink		1	2		A, B, C	1067			1067	1094	0.0	0.0	0.000	A
			2		(A, B, C)	1646			1652	1691	0.3	1.2	2.948	A
Exit		1	1		800			794	814	0.0	2.0	4.837	A	
			2		798			792	810	0.0	1.9	4.857	A	
CircLink		1	1		C	802			802	822	0.0	0.0	0.000	A
			1		A, B	271			271	276	0.0	0.0	0.000	A
Exit		2	1		1586			1576	1604	2.4	7.3	13.551	B	
			3	1	1576			1576	1604	0.0	0.0	0.000	A	

## 17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Standing Way (E)	Entry	1	1	B, C	771	972	0.793	770	798	2.4	2.3	10.436	B	
			2	A, C	910	1267	0.718	910	915	2.1	1.9	7.054	A	
	Exit	1	1		838			838	863	0.0	0.0	0.000	A	
			2		849			849	849	0.0	0.0	0.000	A	
	CircLink	1	1		A	840			840	852	0.0	0.0	0.000	A
2				A, B, C	1114			1114	1128	0.0	0.0	0.000	A	
CircBase	1	1		B, C	267			267	268	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	190	760	0.250	192	199	0.4	0.2	6.538	A	
			2	A, B	268	785	0.341	268	272	0.5	0.5	6.796	A	
	Exit	1	1		518			518	523	0.0	0.0	0.000	A	
			1		B, C	1217			1217	1250	0.0	0.0	0.000	A
	CircLink	1	2		A, C	731			731	730	0.0	0.0	0.000	A
			1		C	713			713	725	0.0	0.0	0.001	A
CircBase	1	2		A, C	717			717	733	0.0	0.0	0.001	A	
Entry	2	1		(A, B, C)	458			458	470	0.0	0.0	0.078	A	
C - Buckingham Road (W)	Entry	1	1	A	801	1072	0.747	806	820	1.6	1.2	7.080	A	
			2	A, B, C	873	1076	0.811	877	884	1.8	1.5	7.863	A	
	CircLink	1	2		A, B, C	1093			1093	1106	0.0	0.0	0.019	A
			2		(A, B, C)	1666			1674	1701	1.2	2.0	4.917	A
	Exit	1	1		800			791	820	2.0	2.2	7.428	A	
			2		819			808	829	1.9	2.2	7.375	A	
	CircLink	1	1		C	797			797	823	0.0	0.0	0.022	A
			1		A, B	271			271	277	0.0	0.0	0.000	A
Exit	2	1		1599			1594	1653	7.3	6.7	14.466	B		
		3	1	1594			1594	1653	0.0	0.0	0.000	A		

## 17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service	
A - Standing Way (E)	Entry	1	1	B, C	673	988	0.681	672	674	2.3	1.3	7.422	A	
			2	A, C	735	1288	0.570	733	739	1.9	1.0	4.839	A	
	Exit	1	1		668			668	697	0.0	0.0	0.000	A	
			2		678			678	700	0.0	0.0	0.000	A	
	CircLink	1	1		A	683			683	704	0.0	0.0	0.000	A
2				A, B, C	878			878	921	0.0	0.0	0.000	A	
CircBase	1	1		B, C	216			216	228	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	150	860	0.174	150	159	0.2	0.1	5.110	A	
			2	A, B	215	881	0.244	216	221	0.5	0.3	5.724	A	
	Exit	1	1		427			427	441	0.0	0.0	0.000	A	
			1		B, C	1015			1015	1039	0.0	0.0	0.000	A
	CircLink	1	2		A, C	605			605	602	0.0	0.0	0.000	A
			1		C	608			608	598	0.0	0.0	0.000	A
CircBase	1	2		A, C	585			585	602	0.0	0.0	0.000	A	
Entry	2	1		(A, B, C)	365			365	379	0.0	0.0	0.010	A	
			1		A	623	1089	0.573	626	652	1.2	0.8	5.616	A

C - Buckingham Road (W)	Entry	1	2	A, B, C	715	1094	0.654	718	749	1.5	1.0	6.048	A
	CircLink	1	2	A, B, C	897			897	909	0.0	0.0	0.000	A
	Entry	2	1	(A, B, C)	1339			1338	1397	2.0	0.1	0.672	A
	Exit	1	1		679			680	694	2.2	0.0	1.700	A
			2		662			663	680	2.2	0.0	1.642	A
	CircLink	1	1	C	662			662	671	0.0	0.0	0.000	A
	CircBase	1	1	A, B	218			218	224	0.0	0.0	0.000	A
	Exit	2	1		1343			1350	1391	6.7	2.4	9.120	A
3		1		1350			1350	1391	0.0	0.0	0.000	A	

## 18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	571	999	0.572	572	585	1.3	1.0	5.830	A
			2	A, C	573	1304	0.439	572	589	1.0	0.6	3.987	A
	Exit	1	1		588			588	593	0.0	0.0	0.000	A
			2		577			577	585	0.0	0.0	0.000	A
	CircLink	1	1	A	593			593	592	0.0	0.0	0.000	A
			2	A, B, C	757			757	775	0.0	0.0	0.000	A
CircBase	1	1	B, C	185			185	190	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	125	929	0.135	125	133	0.1	0.1	4.569	A
			2	A, B	183	972	0.189	183	187	0.3	0.2	4.697	A
	Exit	1	1		359			359	367	0.0	0.0	0.000	A
			2		849			849	862	0.0	0.0	0.000	A
	CircLink	1	1	B, C	849			849	862	0.0	0.0	0.000	A
			2	A, C	479			479	502	0.0	0.0	0.000	A
CircBase	1	1	C	479			479	496	0.0	0.0	0.000	A	
		2	A, C	490			490	501	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	309			309	320	0.0	0.0	0.005	A	
C - Buckingham Road (W)	Entry	1	1	A	543	1103	0.493	542	548	0.8	0.6	4.600	A
			2	A, B, C	622	1102	0.565	623	630	1.0	0.8	5.076	A
	CircLink	1	2	A, B, C	729			729	752	0.0	0.0	0.000	A
			2	(A, B, C)	1167			1165	1177	0.1	0.1	0.138	A
	Exit	1	1		552			552	571	0.0	0.0	0.055	A
			2		540			540	557	0.0	0.0	0.060	A
	CircLink	1	1	C	548			548	565	0.0	0.0	0.000	A
	CircBase	1	1	A, B	185			185	189	0.0	0.0	0.000	A
Exit	2	1		1092			1093	1131	2.4	1.8	5.808	A	
	3	1		1093			1093	1131	0.0	0.0	0.000	A	

# 2033 Base + CD + D with TP, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	23.43	C

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Standing Way (E)		ONE HOUR	✓	1328	100.000
B - Whaddon Road		ONE HOUR	✓	563	100.000
C - Buckingham Road (W)		ONE HOUR	✓	1647	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	3	223	1101
	B - Whaddon Road	307	0	256
	C - Buckingham Road (W)	1514	133	0

### Proportions

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	0.00	0.17	0.83
	B - Whaddon Road	0.55	0.00	0.45
	C - Buckingham Road (W)	0.92	0.08	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	33	2	6
	B - Whaddon Road	2	0	3
	C - Buckingham Road (W)	4	6	0

### Average PCU Per Veh

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	1.333	1.022	1.057
	B - Whaddon Road	1.022	1.000	1.026
	C - Buckingham Road (W)	1.042	1.056	1.000

## Detailed Demand Data

### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	07:30-07:45	1000	1051
	07:45-08:00	1194	1255
	08:00-08:15	1462	1537

A - Standing Way (E)	08:15-08:30	1462	1537
	08:30-08:45	1194	1255
	08:45-09:00	1000	1051
B - Whaddon Road	07:30-07:45	424	434
	07:45-08:00	506	518
	08:00-08:15	620	635
	08:15-08:30	620	635
	08:30-08:45	506	518
	08:45-09:00	424	434
C - Buckingham Road (W)	07:30-07:45	1240	1294
	07:45-08:00	1481	1545
	08:00-08:15	1813	1892
	08:15-08:30	1813	1892
	08:30-08:45	1481	1545
	08:45-09:00	1240	1294

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	6.57	3.0	A	1217	1826
B - Whaddon Road	7.29	1.3	A	519	779
C - Buckingham Road (W)	42.51	24.2	E	1514	2271

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1004	251	102	1004	1050	1374	0.0	1.2	4.555	A
B - Whaddon Road	425	106	839	425	434	267	0.0	0.5	4.703	A
C - Buckingham Road (W)	1236	309	237	1240	1288	1027	0.0	1.8	5.685	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1191	298	119	1192	1252	1643	1.2	1.7	5.193	A
B - Whaddon Road	513	128	995	508	516	317	0.5	1.0	5.333	A
C - Buckingham Road (W)	1473	368	282	1481	1540	1218	1.8	2.9	7.738	A

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1455	364	145	1456	1532	1969	1.7	2.5	6.529	A
B - Whaddon Road	624	156	1212	625	635	389	1.0	1.1	6.928	A
C - Buckingham Road (W)	1813	453	344	1770	1825	1487	2.9	17.8	24.621	C

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1469	367	144	1465	1545	1994	2.5	2.9	6.572	A
B - Whaddon Road	623	156	1219	623	633	390	1.1	1.3	7.294	A
C - Buckingham Road (W)	1814	454	348	1790	1867	1488	17.8	24.1	42.511	E

#### 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1177	294	122	1174	1256	1670	2.9	2.0	5.270	A
B - Whaddon Road	504	126	976	505	524	320	1.3	0.7	5.635	A
C - Buckingham Road (W)	1495	374	278	1514	1636	1209	24.1	3.9	19.551	C

#### 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1177	294	122	1174	1256	1670	2.9	2.0	5.270	A
B - Whaddon Road	504	126	976	505	524	320	1.3	0.7	5.635	A
C - Buckingham Road (W)	1495	374	278	1514	1636	1209	24.1	3.9	19.551	C

A - Standing Way (E)	1004	251	101	1003	1060	1387	2.0	1.3	4.574	A
B - Whaddon Road	427	107	837	426	437	267	0.7	0.6	4.783	A
C - Buckingham Road (W)	1252	313	237	1251	1301	1024	3.9	1.9	5.981	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

#### 07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	514	996	0.516	514	533	0.0	0.8	5.414	A
			2	A, C	490	1286	0.381	491	517	0.0	0.4	3.655	A
	Exit	1	1		690			690	714	0.0	0.0	0.000	A
			2		684			684	708	0.0	0.0	0.000	A
	CircLink	1	1	A	691			691	714	0.0	0.0	0.000	A
			2	A, B, C	786			786	813	0.0	0.0	0.000	A
CircBase	1	1	B, C	102			102	105	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	191	983	0.194	191	198	0.0	0.3	4.673	A
			2	A, B	234	989	0.237	234	236	0.0	0.3	4.695	A
	Exit	1	1		267			267	276	0.0	0.0	0.000	A
			1	B, C	692			692	716	0.0	0.0	0.000	A
	CircLink	1	1	A, C	415			415	439	0.0	0.0	0.000	A
			2	A, C	415			415	439	0.0	0.0	0.000	A
CircBase	1	1	C	421			421	436	0.0	0.0	0.000	A	
		2	A, C	419			419	443	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	425			425	436	0.0	0.0	0.018	A	
C - Buckingham Road (W)	Entry	1	1	A	602	1067	0.565	604	627	0.0	0.8	5.292	A
			2	A, B, C	634	1063	0.597	636	661	0.0	0.9	5.601	A
	CircLink	1	1	A, B, C	754			754	775	0.0	0.0	0.000	A
			2	(A, B, C)	1236			1236	1296	0.0	0.1	0.233	A
	Exit	1	1		513			512	538	0.0	0.0	0.040	A
			2		515			515	536	0.0	0.0	0.037	A
	CircLink	1	1	C	511			511	538	0.0	0.0	0.000	A
	CircBase	1	1	A, B	237			237	240	0.0	0.0	0.000	A
Exit	2	1		1027			1027	1067	0.0	1.6	5.192	A	
		3	1		1027			1027	1067	0.0	0.0	0.000	A

#### 07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	595	990	0.601	595	623	0.8	1.1	6.221	A
			2	A, C	596	1274	0.468	597	628	0.4	0.7	4.157	A
	Exit	1	1		822			822	848	0.0	0.0	0.000	A
			2		822			822	850	0.0	0.0	0.000	A
	CircLink	1	1	A	814			814	844	0.0	0.0	0.000	A
			2	A, B, C	949			949	981	0.0	0.0	0.000	A
CircBase	1	1	B, C	119			119	127	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	232	922	0.252	230	235	0.3	0.5	5.218	A
			2	A, B	280	925	0.303	279	280	0.3	0.5	5.302	A
	Exit	1	1		317			317	332	0.0	0.0	0.000	A
			1	B, C	810			810	853	0.0	0.0	0.000	A
	CircLink	1	1	A, C	502			502	526	0.0	0.0	0.000	A
			2	A, C	496			496	523	0.0	0.0	0.000	A
CircBase	1	1	C	496			496	523	0.0	0.0	0.000	A	
		2	A, C	498			498	524	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	513			513	517	0.0	0.0	0.068	A	
C - Buckingham Road (W)	Entry	1	1	A	721	1053	0.684	722	753	0.8	1.2	6.456	A
			2	A, B, C	757	1049	0.721	758	787	0.9	1.4	6.764	A
	CircLink	1	1	A, B, C	891			891	925	0.0	0.0	0.000	A
			2	(A, B, C)	1473			1478	1544	0.1	0.3	1.121	A
	Exit	1	1		612			612	641	0.0	0.0	0.250	A
			2		609			609	637	0.0	0.0	0.242	A
	CircLink	1	1	C	613			613	638	0.0	0.0	0.000	A
	CircBase	1	1	A, B	282			282	284	0.0	0.0	0.000	A
Exit	2	1		1221			1218	1275	1.6	2.4	7.098	A	
		3	1		1218			1218	1275	0.0	0.0	0.000	A

#### 08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
			1	B, C	708	981	0.722	709	741	1.1	1.5	7.887	A



A - Standing Way (E)	Entry	1	2	A, C	747	1269	0.588	748	791	0.7	1.0	5.243	A
	Exit	1	1		988			988	1012	0.0	0.0	0.000	A
			2		981			981	1011	0.0	0.0	0.000	A
	CircLink	1	1	A	991			991	1013	0.0	0.0	0.000	A
			2	A, B, C	1123			1123	1162	0.0	0.0	0.000	A
CircBase	1	1	B, C	145			145	151	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	284	834	0.341	285	290	0.5	0.4	6.205	A
			2	A, B	341	838	0.407	341	345	0.5	0.6	7.019	A
	Exit	1	1		389			389	403	0.0	0.0	0.000	A
			2		1002			1002	1041	0.0	0.0	0.000	A
	CircLink	1	1	B, C	1002			1002	1041	0.0	0.0	0.000	A
			2	A, C	600			600	642	0.0	0.0	0.000	A
CircBase	1	1	C	608			608	639	0.0	0.0	0.000	A	
		2	A, C	604			604	641	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	624			625	635	0.0	0.0	0.279	A	
C - Buckingham Road (W)	Entry	1	1	A	871	1027	0.848	869	899	1.2	2.1	8.017	A
			2	A, B, C	902	1028	0.878	901	926	1.4	2.4	8.584	A
	CircLink	1	2	A, B, C	1091			1091	1133	0.0	0.0	0.000	A
			2	(A, B, C)	1813			1774	1833	0.3	13.3	16.308	C
	Exit	1	1		748			746	780	0.0	0.9	3.138	A
			2		746			743	778	0.0	0.9	3.152	A
	CircLink	1	1	C	747			747	782	0.0	0.0	0.000	A
	CircBase	1	1	A, B	344			344	350	0.0	0.0	0.000	A
Exit	2	1		1489			1487	1547	2.4	5.1	12.018	B	
		3	1		1487			1487	1547	0.0	0.0	0.000	A

## 08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	716	981	0.730	713	747	1.5	1.7	7.932	A
			2	A, C	754	1264	0.596	752	798	1.0	1.2	5.283	A
	Exit	1	1		1002			1002	1037	0.0	0.0	0.000	A
			2		993			993	1031	0.0	0.0	0.000	A
	CircLink	1	1	A	996			996	1035	0.0	0.0	0.000	A
2			A, B, C	1142			1142	1185	0.0	0.0	0.000	A	
CircBase	1	1	B, C	144			144	152	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	280	833	0.337	279	285	0.4	0.6	6.473	A
			2	A, B	344	830	0.414	343	348	0.6	0.7	7.167	A
	Exit	1	1		390			390	405	0.0	0.0	0.000	A
			2		1002			1002	1050	0.0	0.0	0.000	A
	CircLink	1	1	B, C	1002			1002	1050	0.0	0.0	0.000	A
			2	A, C	607			607	646	0.0	0.0	0.000	A
CircBase	1	1	C	606			606	642	0.0	0.0	0.000	A	
		2	A, C	613			613	650	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	623			624	633	0.0	0.0	0.438	A	
C - Buckingham Road (W)	Entry	1	1	A	883	1026	0.860	885	921	2.1	2.0	8.219	A
			2	A, B, C	904	1023	0.883	906	945	2.4	2.2	8.821	A
	CircLink	1	2	A, B, C	1085			1085	1133	0.0	0.0	0.005	A
			2	(A, B, C)	1814			1787	1865	13.3	19.9	33.979	D
	Exit	1	1		743			742	782	0.9	1.1	4.814	A
			2		751			750	787	0.9	1.1	4.788	A
	CircLink	1	1	C	756			756	792	0.0	0.0	0.007	A
	CircBase	1	1	A, B	348			348	353	0.0	0.0	0.000	A
Exit	2	1		1492			1488	1568	5.1	5.5	12.694	B	
		3	1		1488			1488	1568	0.0	0.0	0.000	A

## 08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	596	990	0.602	594	625	1.7	1.1	6.314	A
			2	A, C	581	1274	0.456	580	631	1.2	0.8	4.224	A
	Exit	1	1		835			835	896	0.0	0.0	0.000	A
			2		835			835	895	0.0	0.0	0.000	A
	CircLink	1	1	A	832			832	894	0.0	0.0	0.000	A
2			A, B, C	960			960	1030	0.0	0.0	0.000	A	
CircBase	1	1	B, C	122			122	133	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	230	933	0.246	231	240	0.6	0.3	5.500	A
			2	A, B	274	933	0.294	275	284	0.7	0.4	5.566	A
	Exit	1	1		320			320	342	0.0	0.0	0.000	A
			2		803			803	864	0.0	0.0	0.000	A
	CircLink	1	1	B, C	803			803	864	0.0	0.0	0.000	A
			2	A, C	493			493	525	0.0	0.0	0.000	A
CircBase	1	1	C	481			481	518	0.0	0.0	0.000	A	
		2	A, C	495			495	530	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	504			504	522	0.0	0.0	0.102	A	
			1	A	739	1047	0.705	738	802	2.0	1.4	6.979	A

C - Buckingham Road (W)	Entry	1	2	A, B, C	777	1051	0.740	776	834	2.2	1.6	7.397	A
	CircLink	1	2	A, B, C	884			884	932	0.0	0.0	0.000	A
	Entry	2	1	(A, B, C)	1495			1516	1631	19.9	0.9	12.442	B
	Exit	1	1		605			605	645	1.1	0.0	0.722	A
			2		599			599	647	1.1	0.0	0.728	A
	CircLink	1	1	C	597			597	639	0.0	0.0	0.000	A
	CircBase	1	1	A, B	278			278	288	0.0	0.0	0.000	A
	Exit	2	1		1204			1209	1307	5.5	2.2	7.809	A
3		1		1209			1209	1307	0.0	0.0	0.000	A	

## 08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	511	993	0.515	511	541	1.1	0.8	5.406	A
			2	A, C	493	1279	0.385	491	519	0.8	0.5	3.697	A
	Exit	1	1		706			706	720	0.0	0.0	0.000	A
			2		681			681	715	0.0	0.0	0.000	A
	CircLink	1	1	A	699			699	720	0.0	0.0	0.000	A
			2	A, B, C	789			789	822	0.0	0.0	0.000	A
CircBase	1	1	B, C	101			101	108	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	192	987	0.194	192	199	0.3	0.2	4.679	A
			2	A, B	235	992	0.237	234	238	0.4	0.3	4.812	A
	Exit	1	1		267			267	279	0.0	0.0	0.000	A
			2		685			685	722	0.0	0.0	0.000	A
	CircLink	1	1	B, C	685			685	722	0.0	0.0	0.000	A
			2	A, C	419			419	445	0.0	0.0	0.000	A
CircBase	1	1	C	419			419	442	0.0	0.0	0.000	A	
		2	A, C	418			418	447	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	427			427	437	0.0	0.0	0.031	A	
C - Buckingham Road (W)	Entry	1	1	A	602	1063	0.566	600	629	1.4	0.9	5.412	A
			2	A, B, C	651	1063	0.613	650	672	1.6	1.0	5.614	A
	CircLink	1	2	A, B, C	750			750	782	0.0	0.0	0.000	A
	Entry	2	1	(A, B, C)	1252			1253	1296	0.9	0.0	0.473	A
	Exit	1	1		513			513	542	0.0	0.0	0.047	A
			2		513			513	543	0.0	0.0	0.041	A
	CircLink	1	1	C	513			513	544	0.0	0.0	0.000	A
	CircBase	1	1	A, B	237			237	241	0.0	0.0	0.000	A
Exit	2	1		1026			1024	1087	2.2	1.5	5.411	A	
	3	1		1024			1024	1087	0.0	0.0	0.000	A	

# 2033 Base + CD + D with TP, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	9.28	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Standing Way (E)		ONE HOUR	✓	1527	100.000
B - Whaddon Road		ONE HOUR	✓	409	100.000
C - Buckingham Road (W)		ONE HOUR	✓	1498	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	2	230	1295
	B - Whaddon Road	241	0	168
	C - Buckingham Road (W)	1265	233	0

### Proportions

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	0.00	0.15	0.85
	B - Whaddon Road	0.59	0.00	0.41
	C - Buckingham Road (W)	0.84	0.16	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	50	1	2
	B - Whaddon Road	0	0	3
	C - Buckingham Road (W)	3	2	0

### Average PCU Per Veh

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	1.500	1.010	1.018
	B - Whaddon Road	1.000	1.000	1.031
	C - Buckingham Road (W)	1.025	1.019	1.000

## Detailed Demand Data

### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	16:45-17:00	1150	1170
	17:00-17:15	1373	1398
	17:15-17:30	1682	1712

A - Standing Way (E)	17:30-17:45	1682	1712
	17:45-18:00	1373	1398
	18:00-18:15	1150	1170
B - Whaddon Road	16:45-17:00	308	312
	17:00-17:15	368	372
	17:15-17:30	450	456
	17:30-17:45	450	456
	17:45-18:00	368	372
	18:00-18:15	308	312
C - Buckingham Road (W)	16:45-17:00	1128	1155
	17:00-17:15	1347	1379
	17:15-17:30	1649	1689
	17:30-17:45	1649	1689
	17:45-18:00	1347	1379
	18:00-18:15	1128	1155

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	8.41	4.2	A	1399	2098
B - Whaddon Road	6.56	0.9	A	381	571
C - Buckingham Road (W)	10.90	5.0	B	1374	2061

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1128	282	165	1129	1154	1137	0.0	1.5	4.714	A
B - Whaddon Road	312	78	952	313	312	342	0.0	0.4	4.489	A
C - Buckingham Road (W)	1114	279	187	1116	1145	1078	0.0	1.4	4.830	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1360	340	211	1364	1388	1360	1.5	2.0	5.788	A
B - Whaddon Road	364	91	1160	364	366	415	0.4	0.5	5.184	A
C - Buckingham Road (W)	1364	341	213	1357	1384	1306	1.4	3.0	6.229	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1666	416	256	1660	1701	1656	2.0	4.0	8.136	A
B - Whaddon Road	461	115	1410	461	462	506	0.5	0.8	6.561	A
C - Buckingham Road (W)	1643	411	268	1644	1689	1592	3.0	5.0	10.311	B

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1685	421	258	1691	1708	1693	4.0	4.2	8.409	A
B - Whaddon Road	466	116	1439	466	460	510	0.8	0.8	6.542	A
C - Buckingham Road (W)	1669	417	280	1672	1696	1631	5.0	4.9	10.904	B

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1414	354	214	1415	1408	1353	4.2	2.0	5.917	A
B - Whaddon Road	367	92	1193	366	371	436	0.8	0.6	5.354	A
C - Buckingham Road (W)	1353	338	216	1352	1388	1349	4.9	2.6	6.456	A

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1414	354	214	1415	1408	1353	4.2	2.0	5.917	A
B - Whaddon Road	367	92	1193	366	371	436	0.8	0.6	5.354	A
C - Buckingham Road (W)	1353	338	216	1352	1388	1349	4.9	2.6	6.456	A

A - Standing Way (E)	1142	285	168	1148	1168	1115	2.0	1.2	4.742	A
B - Whaddon Road	316	79	971	314	313	345	0.6	0.5	4.635	A
C - Buckingham Road (W)	1100	275	186	1096	1159	1098	2.6	1.6	4.883	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	559	1004	0.556	560	575	0.0	0.8	5.639	A
			2	A, C	569	1309	0.435	569	579	0.0	0.6	3.788	A
	Exit	1	1		567			567	574	0.0	0.0	0.000	A
			2		571			571	579	0.0	0.0	0.000	A
	CircLink	1	1	A	553			553	575	0.0	0.0	0.000	A
			2	A, B, C	750			750	756	0.0	0.0	0.000	A
CircBase	1	1	B, C	165			165	177	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	126	949	0.133	126	129	0.0	0.2	4.627	A
			2	A, B	186	977	0.190	187	182	0.0	0.2	4.389	A
	Exit	1	1		342			342	353	0.0	0.0	0.000	A
			2		823			823	846	0.0	0.0	0.000	A
	CircLink	1	1	B, C	823			823	846	0.0	0.0	0.000	A
			2	A, C	472			472	485	0.0	0.0	0.000	A
CircBase	1	1	C	475			475	484	0.0	0.0	0.000	A	
		2	A, C	478			478	494	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	312			312	313	0.0	0.0	0.003	A	
C - Buckingham Road (W)	Entry	1	1	A	519	1100	0.472	519	532	0.0	0.7	4.581	A
			2	A, B, C	596	1101	0.541	597	613	0.0	0.7	4.916	A
	CircLink	1	2	A, B, C	733			733	740	0.0	0.0	0.000	A
			1	(A, B, C)	1114			1115	1151	0.0	0.0	0.069	A
	Exit	1	1		532			532	549	0.0	0.0	0.016	A
			2		546			546	556	0.0	0.0	0.012	A
	CircLink	1	1	C	533			533	549	0.0	0.0	0.000	A
	CircBase	1	1	A, B	187			187	185	0.0	0.0	0.000	A
Exit	2	1		1078			1078	1098	0.0	1.7	5.145	A	
		3	1		1078			1078	1098	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	662	991	0.668	668	676	0.8	1.1	6.930	A
			2	A, C	698	1291	0.541	697	711	0.6	0.9	4.697	A
	Exit	1	1		677			677	691	0.0	0.0	0.000	A
			2		683			683	697	0.0	0.0	0.000	A
	CircLink	1	1	A	681			681	694	0.0	0.0	0.000	A
			2	A, B, C	889			889	906	0.0	0.0	0.000	A
CircBase	1	1	B, C	211			211	212	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	152	864	0.176	152	153	0.2	0.2	5.061	A
			2	A, B	212	895	0.237	211	213	0.2	0.3	5.239	A
	Exit	1	1		415			415	418	0.0	0.0	0.000	A
			2		996			996	1009	0.0	0.0	0.000	A
	CircLink	1	1	B, C	996			996	1009	0.0	0.0	0.000	A
			2	A, C	579			579	591	0.0	0.0	0.000	A
CircBase	1	1	C	582			582	594	0.0	0.0	0.000	A	
		2	A, C	577			577	587	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	364			364	367	0.0	0.0	0.018	A	
C - Buckingham Road (W)	Entry	1	1	A	651	1091	0.597	648	655	0.7	1.3	5.405	A
			2	A, B, C	711	1089	0.652	709	729	0.7	1.3	5.948	A
	CircLink	1	2	A, B, C	872			872	886	0.0	0.0	0.000	A
			1	(A, B, C)	1364			1362	1389	0.0	0.4	0.534	A
	Exit	1	1		656			656	666	0.0	0.1	0.310	A
			2		654			653	666	0.0	0.1	0.303	A
	CircLink	1	1	C	651			651	662	0.0	0.0	0.000	A
	CircBase	1	1	A, B	213			213	216	0.0	0.0	0.000	A
Exit	2	1		1309			1306	1325	1.7	3.3	7.466	A	
		3	1		1306			1306	1325	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
			1	B, C	779	975	0.800	773	794	1.1	2.5	9.916	A

A - Standing Way (E)	Entry	1	2	A, C	886	1272	0.697	886	907	0.9	1.5	6.565	A
	Exit	1	1		832			832	857	0.0	0.0	0.000	A
			2		824			824	839	0.0	0.0	0.000	A
	CircLink	1	1	A	829			829	845	0.0	0.0	0.000	A
			2	A, B, C	1083			1083	1113	0.0	0.0	0.000	A
CircBase	1	1	B, C	256			256	262	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	196	772	0.254	195	196	0.2	0.4	6.177	A
			2	A, B	265	793	0.333	266	266	0.3	0.5	6.568	A
	Exit	1	1		506			506	520	0.0	0.0	0.000	A
			1	B, C	1209			1209	1238	0.0	0.0	0.000	A
	CircLink	1	2	A, C	707			707	725	0.0	0.0	0.000	A
			1	C	699			699	716	0.0	0.0	0.000	A
CircBase	1	2	A, C	710			710	727	0.0	0.0	0.000	A	
		2	1	(A, B, C)	461			460	464	0.0	0.0	0.156	A
C - Buckingham Road (W)	Entry	1	1	A	786	1076	0.731	789	811	1.3	1.5	6.780	A
			2	A, B, C	856	1075	0.797	854	878	1.3	2.0	7.588	A
	CircLink	1	2	A, B, C	1060			1060	1081	0.0	0.0	0.000	A
			2	1	(A, B, C)	1643			1643	1693	0.4	1.5	3.109
	Exit	1	1		787			786	802	0.1	1.7	5.186	A
			2		815			813	820	0.1	1.6	5.089	A
	CircLink	1	1	C	811			811	824	0.0	0.0	0.000	A
	CircBase	1	1	A, B	268			268	269	0.0	0.0	0.000	A
Exit	2	1		1599			1592	1609	3.3	6.6	13.634	B	
		3	1		1592			1592	1609	0.0	0.0	0.000	A

## 17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	785	975	0.805	789	799	2.5	2.4	10.170	B
			2	A, C	900	1272	0.707	901	909	1.5	1.8	6.857	A
	Exit	1	1		847			847	851	0.0	0.0	0.000	A
			2		847			847	852	0.0	0.0	0.000	A
	CircLink	1	1	A	852			852	852	0.0	0.0	0.000	A
2			A, B, C	1100			1100	1117	0.0	0.0	0.000	A	
CircBase	1	1	B, C	258			258	266	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	189	753	0.250	189	191	0.4	0.3	5.995	A
			2	A, B	277	783	0.354	277	269	0.5	0.5	6.773	A
	Exit	1	1		510			510	522	0.0	0.0	0.000	A
			1	B, C	1222			1222	1239	0.0	0.0	0.000	A
	CircLink	1	2	A, C	727			727	735	0.0	0.0	0.000	A
			1	C	720			720	721	0.0	0.0	0.000	A
CircBase	1	2	A, C	719			719	731	0.0	0.0	0.000	A	
		2	1	(A, B, C)	466			466	460	0.0	0.0	0.085	A
C - Buckingham Road (W)	Entry	1	1	A	800	1072	0.746	802	808	1.5	1.3	6.856	A
			2	A, B, C	871	1071	0.813	870	887	2.0	1.8	7.476	A
	CircLink	1	2	A, B, C	1090			1090	1091	0.0	0.0	0.000	A
			2	1	(A, B, C)	1669			1671	1694	1.5	1.7	3.719
	Exit	1	1		811			815	815	1.7	1.5	8.115	A
			2		815			820	826	1.6	1.5	8.027	A
	CircLink	1	1	C	815			815	821	0.0	0.0	0.000	A
	CircBase	1	1	A, B	280			280	273	0.0	0.0	0.000	A
Exit	2	1		1635			1631	1640	6.6	6.8	14.559	B	
		3	1		1631			1631	1640	0.0	0.0	0.000	A

## 17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	679	991	0.685	680	680	2.4	1.2	7.145	A
			2	A, C	735	1287	0.571	735	728	1.8	0.8	4.767	A
	Exit	1	1		678			678	694	0.0	0.0	0.000	A
			2		675			675	695	0.0	0.0	0.000	A
	CircLink	1	1	A	684			684	693	0.0	0.0	0.000	A
2			A, B, C	883			883	914	0.0	0.0	0.000	A	
CircBase	1	1	B, C	214			214	218	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	154	855	0.180	153	155	0.3	0.3	4.959	A
			2	A, B	213	881	0.242	213	216	0.5	0.3	5.573	A
	Exit	1	1		436			436	430	0.0	0.0	0.000	A
			1	B, C	1037			1037	1029	0.0	0.0	0.000	A
	CircLink	1	2	A, C	592			592	597	0.0	0.0	0.000	A
			1	C	591			591	599	0.0	0.0	0.000	A
CircBase	1	2	A, C	602			602	597	0.0	0.0	0.000	A	
		2	1	(A, B, C)	367			367	370	0.0	0.0	0.033	A
Exit	2	1		631	1087	0.581	631	654	1.3	1.1	5.477	A	

C - Buckingham Road (W)	Entry	1	2	A, B, C	721	1091	0.661	720	734	1.8	1.3	5.922	A
	CircLink	1	2	A, B, C	893			893	889	0.0	0.0	0.000	A
	Entry	2	1	(A, B, C)	1353			1353	1385	1.7	0.2	0.761	A
	Exit	1	1		685			687	684	1.5	0.0	0.982	A
			2		658			659	676	1.5	0.0	1.030	A
	CircLink	1	1	C	667			667	678	0.0	0.0	0.000	A
	CircBase	1	1	A, B	216			216	219	0.0	0.0	0.000	A
	Exit	2	1		1346			1349	1376	6.8	2.8	8.647	A
3		1		1349			1349	1376	0.0	0.0	0.000	A	

## 18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	579	1004	0.576	582	586	1.2	0.7	5.595	A
			2	A, C	563	1311	0.429	566	582	0.8	0.5	3.883	A
	Exit	1	1		553			553	579	0.0	0.0	0.000	A
			2		562			562	586	0.0	0.0	0.000	A
	CircLink	1	1	A	550			550	578	0.0	0.0	0.000	A
			2	A, B, C	732			732	763	0.0	0.0	0.000	A
CircBase	1	1	B, C	168			168	176	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	130	942	0.138	129	132	0.3	0.2	4.577	A
			2	A, B	186	971	0.192	185	181	0.3	0.3	4.662	A
	Exit	1	1		345			345	351	0.0	0.0	0.000	A
			2		828			828	845	0.0	0.0	0.000	A
	CircLink	1	1	B, C	828			828	845	0.0	0.0	0.000	A
			2	A, C	487			487	498	0.0	0.0	0.000	A
CircBase	1	1	C	479			479	494	0.0	0.0	0.000	A	
		2	A, C	492			492	498	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	316			316	313	0.0	0.0	0.008	A	
C - Buckingham Road (W)	Entry	1	1	A	517	1100	0.469	514	545	1.1	0.8	4.516	A
			2	A, B, C	584	1108	0.527	583	613	1.3	0.8	5.003	A
	CircLink	1	2	A, B, C	736			736	743	0.0	0.0	0.000	A
	Entry	2	1	(A, B, C)	1100			1100	1155	0.2	0.0	0.112	A
	Exit	1	1		544			544	556	0.0	0.0	0.040	A
			2		555			555	567	0.0	0.0	0.038	A
	CircLink	1	1	C	548			548	562	0.0	0.0	0.000	A
	CircBase	1	1	A, B	186			186	183	0.0	0.0	0.000	A
Exit	2	1		1099			1098	1127	2.8	1.7	5.463	A	
	3	1		1098			1098	1127	0.0	0.0	0.000	A	

# 2033 Base + CD + D - ST, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	29.87	D

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Standing Way (E)		ONE HOUR	✓	1261	100.000
B - Whaddon Road		ONE HOUR	✓	597	100.000
C - Buckingham Road (W)		ONE HOUR	✓	1664	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	3	223	1034
	B - Whaddon Road	324	0	273
	C - Buckingham Road (W)	1510	154	0

### Proportions

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	0.00	0.18	0.82
	B - Whaddon Road	0.54	0.00	0.46
	C - Buckingham Road (W)	0.91	0.09	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	33	2	6
	B - Whaddon Road	2	0	3
	C - Buckingham Road (W)	4	6	0

### Average PCU Per Veh

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	1.333	1.022	1.057
	B - Whaddon Road	1.022	1.000	1.026
	C - Buckingham Road (W)	1.042	1.056	1.000

## Detailed Demand Data

### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	07:30-07:45	949	998
	07:45-08:00	1133	1191
	08:00-08:15	1388	1459



A - Standing Way (E)	08:15-08:30	1388	1459
	08:30-08:45	1133	1191
	08:45-09:00	949	998
B - Whaddon Road	07:30-07:45	449	460
	07:45-08:00	537	549
	08:00-08:15	657	673
	08:15-08:30	657	673
	08:30-08:45	537	549
C - Buckingham Road (W)	08:45-09:00	449	460
	07:30-07:45	1253	1307
	07:45-08:00	1496	1561
	08:00-08:15	1832	1912
	08:15-08:30	1832	1912
C - Buckingham Road (W)	08:30-08:45	1496	1561
	08:45-09:00	1253	1307

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	6.36	2.6	A	1151	1727
B - Whaddon Road	7.17	1.2	A	551	826
C - Buckingham Road (W)	55.86	32.1	F	1525	2288

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	948	237	117	948	987	1401	0.0	1.2	4.438	A
B - Whaddon Road	456	114	785	455	462	280	0.0	0.6	4.517	A
C - Buckingham Road (W)	1269	317	250	1267	1305	987	0.0	2.1	5.762	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1132	283	133	1131	1196	1658	1.2	1.6	4.983	A
B - Whaddon Road	537	134	925	537	545	340	0.6	0.9	5.238	A
C - Buckingham Road (W)	1493	373	297	1495	1553	1169	2.1	3.4	8.565	A

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1382	345	164	1378	1454	1972	1.6	2.6	6.355	A
B - Whaddon Road	657	164	1135	659	670	406	0.9	1.2	6.853	A
C - Buckingham Road (W)	1819	455	357	1779	1836	1440	3.4	22.2	31.590	D

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1382	345	160	1377	1454	2004	2.6	2.5	6.283	A
B - Whaddon Road	672	168	1128	677	678	409	1.2	1.1	7.174	A
C - Buckingham Road (W)	1826	457	370	1794	1863	1439	22.2	32.0	55.859	F

#### 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1123	281	142	1125	1199	1698	2.5	1.4	5.092	A
B - Whaddon Road	538	134	919	539	558	348	1.1	0.7	5.673	A
C - Buckingham Road (W)	1495	374	295	1545	1680	1161	32.0	4.2	28.507	D

#### 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1123	281	142	1125	1199	1698	2.5	1.4	5.092	A
B - Whaddon Road	538	134	919	539	558	348	1.1	0.7	5.673	A
C - Buckingham Road (W)	1495	374	295	1545	1680	1161	32.0	4.2	28.507	D

A - Standing Way (E)	942	236	115	944	995	1376	1.4	1.0	4.481	A
B - Whaddon Road	446	111	784	446	458	275	0.7	0.6	4.642	A
C - Buckingham Road (W)	1252	313	236	1256	1319	994	4.2	1.8	6.274	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

#### 07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	486	993	0.489	486	508	0.0	0.7	5.225	A
			2	A, C	463	1275	0.363	462	478	0.0	0.5	3.588	A
	Exit	1	1		696			696	715	0.0	0.0	0.000	A
			2		705			705	717	0.0	0.0	0.000	A
	CircLink	1	1	A	693			693	716	0.0	0.0	0.000	A
			2	A, B, C	825			825	841	0.0	0.0	0.000	A
CircBase	1	1	B, C	117			117	125	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	206	1004	0.205	206	214	0.0	0.2	4.477	A
			2	A, B	250	1010	0.248	248	248	0.0	0.3	4.501	A
	Exit	1	1		280			280	294	0.0	0.0	0.000	A
			2		673			673	697	0.0	0.0	0.000	A
	CircLink	1	1	B, C	673			673	697	0.0	0.0	0.000	A
			2	A, C	392			392	414	0.0	0.0	0.000	A
CircBase	1	1	C	391			391	407	0.0	0.0	0.000	A	
		2	A, C	394			394	410	0.0	0.0	0.000	A	
C - Buckingham Road (W)	Entry	1	1	(A, B, C)	456			456	464	0.0	0.0	0.023	A
			2	A	611	1059	0.577	610	627	0.0	0.9	5.387	A
	CircLink	1	2	A, B, C	658	1061	0.620	657	678	0.0	1.1	5.668	A
			1	2	A, B, C	746			746	765	0.0	0.0	0.000
	Entry	2	1	(A, B, C)	1269			1269	1314	0.0	0.1	0.228	A
			1		496			496	511	0.0	0.0	0.017	A
	Exit	1	2		494			494	517	0.0	0.0	0.016	A
			1	C	494			494	514	0.0	0.0	0.000	A
CircBase	1	1	A, B	250			250	251	0.0	0.0	0.000	A	
Exit	2	1		990			987	1021	0.0	1.6	4.855	A	
		3	1		987			987	1021	0.0	0.0	0.000	A

#### 07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	574	983	0.584	573	607	0.7	1.0	5.925	A
			2	A, C	558	1272	0.439	557	589	0.5	0.6	4.001	A
	Exit	1	1		832			832	854	0.0	0.0	0.000	A
			2		826			826	855	0.0	0.0	0.000	A
	CircLink	1	1	A	828			828	858	0.0	0.0	0.000	A
			2	A, B, C	963			963	997	0.0	0.0	0.000	A
CircBase	1	1	B, C	133			133	146	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	243	947	0.256	243	247	0.2	0.4	4.928	A
			2	A, B	294	957	0.308	294	298	0.3	0.4	5.335	A
	Exit	1	1		340			340	355	0.0	0.0	0.000	A
			2		803			803	847	0.0	0.0	0.000	A
	CircLink	1	1	B, C	803			803	847	0.0	0.0	0.000	A
			2	A, C	462			462	495	0.0	0.0	0.000	A
CircBase	1	1	C	464			464	490	0.0	0.0	0.000	A	
		2	A, C	460			460	497	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	537			537	546	0.0	0.0	0.089	A	
C - Buckingham Road (W)	Entry	1	1	A	731	1045	0.700	731	758	0.9	1.4	6.649	A
			2	A, B, C	766	1043	0.734	764	795	1.1	1.5	7.072	A
	CircLink	1	2	A, B, C	876			876	914	0.0	0.0	0.000	A
			1	2	(A, B, C)	1493			1497	1557	0.1	0.5	1.697
	Exit	1	1		580			580	610	0.0	0.1	0.234	A
			2		585			584	619	0.0	0.0	0.240	A
	CircLink	1	1	C	586			586	617	0.0	0.0	0.000	A
			1	1	A, B	297			297	302	0.0	0.0	0.000
Exit	2	1		1164			1169	1228	1.6	2.0	6.475	A	
		3	1		1169			1169	1228	0.0	0.0	0.000	A

#### 08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
			1	B, C	675	971	0.695	674	710	1.0	1.5	7.680	A

A - Standing Way (E)	Entry	1	2	A, C	707	1262	0.559	704	744	0.6	1.1	5.080	A
		Exit	1	1		994			994	1017	0.0	0.0	0.000
			2			977			977	1013	0.0	0.0	0.000
	CircLink	1	1	A	977			977	1014	0.0	0.0	0.000	A
			2	A, B, C	1158			1158	1186	0.0	0.0	0.000	A
CircBase	1	1	B, C	164			164	170	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	304	863	0.352	306	311	0.4	0.4	6.314	A
			2	A, B	353	870	0.406	353	359	0.4	0.8	6.698	A
	Exit	1	1		406			406	419	0.0	0.0	0.000	A
				1	B, C	981			981	1022	0.0	0.0	0.000
	CircLink	1	2	A, C	560			560	602	0.0	0.0	0.000	A
			CircBase	1	1	C	563			563	596	0.0	0.0
	2	A, C			572			572	609	0.0	0.0	0.000	A
C - Buckingham Road (W)	Entry	1	1	A	868	1023	0.848	868	899	1.4	2.0	8.365	A
			2	A, B, C	908	1023	0.888	911	937	1.5	2.2	8.875	A
	CircLink	1	2	A, B, C	1083			1083	1125	0.0	0.0	0.000	A
			2	(A, B, C)	1819			1776	1841	0.5	18.1	22.950	C
	Exit	1	1		723			724	757	0.1	0.4	1.684	A
			2		715			717	752	0.0	0.3	1.752	A
	CircLink	1	1	C	712			712	750	0.0	0.0	0.000	A
	CircBase	1	1	A, B	357			357	364	0.0	0.0	0.000	A
	Exit	2	1		1440			1440	1499	2.0	4.3	10.397	B
				3	1		1440			1440	1499	0.0	0.0

## 08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	677	973	0.696	676	709	1.5	1.4	7.621	A
			2	A, C	705	1263	0.559	701	745	1.1	1.1	4.997	A
	Exit	1	1		999			999	1028	0.0	0.0	0.000	A
			2		1004			1004	1034	0.0	0.0	0.000	A
	CircLink	1	1	A	1006			1006	1029	0.0	0.0	0.000	A
			2	A, B, C	1157			1157	1207	0.0	0.0	0.000	A
CircBase	1	1	B, C	160			160	174	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	311	862	0.361	312	311	0.4	0.6	6.286	A
			2	A, B	362	870	0.415	365	367	0.8	0.5	7.145	A
	Exit	1	1		409			409	427	0.0	0.0	0.000	A
				1	B, C	972			972	1023	0.0	0.0	0.000
	CircLink	1	2	A, C	565			565	605	0.0	0.0	0.000	A
			CircBase	1	1	C	560			560	596	0.0	0.0
	2	A, C			568			568	605	0.0	0.0	0.000	A
Entry	2	1	(A, B, C)	672			673	678	0.0	0.0	0.424	A	
C - Buckingham Road (W)	Entry	1	1	A	878	1024	0.857	882	914	2.0	1.9	8.313	A
			2	A, B, C	910	1019	0.893	911	949	2.2	2.2	9.019	A
	CircLink	1	2	A, B, C	1091			1091	1128	0.0	0.0	0.000	A
			Exit	1	1		724			723	752	0.4	0.6
	2				712			710	752	0.3	0.7	2.390	A
	CircLink	1	1	C	714			714	752	0.0	0.0	0.000	A
	CircBase	1	1	A, B	370			370	373	0.0	0.0	0.000	A
	Exit	2	1		1433			1439	1504	4.3	4.3	11.117	B
3				1		1439			1439	1504	0.0	0.0	0.000

## 08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	580	983	0.590	581	605	1.4	0.9	6.083	A
			2	A, C	543	1261	0.430	544	593	1.1	0.5	4.067	A
	Exit	1	1		843			843	911	0.0	0.0	0.000	A
			2		855			855	919	0.0	0.0	0.000	A
	CircLink	1	1	A	843			843	914	0.0	0.0	0.000	A
			2	A, B, C	997			997	1074	0.0	0.0	0.000	A
CircBase	1	1	B, C	142			142	158	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	245	946	0.258	246	254	0.6	0.3	5.164	A
			2	A, B	293	956	0.307	293	304	0.5	0.4	5.827	A
	Exit	1	1		348			348	368	0.0	0.0	0.000	A
				1	B, C	810			810	859	0.0	0.0	0.000
	CircLink	1	2	A, C	458			458	498	0.0	0.0	0.000	A
			CircBase	1	1	C	460			460	493	0.0	0.0
	2	A, C			460			460	496	0.0	0.0	0.000	A
Entry	2	1	(A, B, C)	538			538	557	0.0	0.0	0.147	A	
			1	A	751	1049	0.716	754	819	1.9	1.4	7.440	A

C - Buckingham Road (W)	Entry	1	2	A, B, C	788	1042	0.756	791	861	2.2	1.4	7.857	A
	CircLink	1	2	A, B, C	882			882	929	0.0	0.0	0.000	A
	Entry	2	1	(A, B, C)	1495			1539	1674	27.9	1.4	20.948	C
	Exit	1	1		591			591	623	0.6	0.0	0.458	A
			2		572			572	621	0.7	0.0	0.422	A
	CircLink	1	1	C	577			577	618	0.0	0.0	0.000	A
	CircBase	1	1	A, B	295			295	308	0.0	0.0	0.000	A
	Exit	2	1		1163			1161	1253	4.3	2.2	7.146	A
3		1		1161			1161	1253	0.0	0.0	0.000	A	

## 08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	484	989	0.489	485	513	0.9	0.6	5.288	A
			2	A, C	459	1279	0.358	458	482	0.5	0.4	3.613	A
	Exit	1	1		696			696	727	0.0	0.0	0.000	A
			2		680			680	718	0.0	0.0	0.000	A
	CircLink	1	1	A	684			684	723	0.0	0.0	0.000	A
			2	A, B, C	807			807	846	0.0	0.0	0.000	A
CircBase	1	1	B, C	115			115	123	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	212	1005	0.211	212	212	0.3	0.3	4.511	A
			2	A, B	234	1014	0.231	234	246	0.4	0.4	4.688	A
	Exit	1	1		275			275	296	0.0	0.0	0.000	A
			2		664			664	705	0.0	0.0	0.000	A
	CircLink	1	1	B, C	664			664	705	0.0	0.0	0.000	A
			2	A, C	395			395	413	0.0	0.0	0.000	A
CircBase	1	1	C	390			390	410	0.0	0.0	0.000	A	
		2	A, C	394			394	412	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	446			446	458	0.0	0.0	0.036	A	
C - Buckingham Road (W)	Entry	1	1	A	610	1070	0.570	612	636	1.4	0.8	5.537	A
			2	A, B, C	643	1070	0.601	644	683	1.4	0.9	5.817	A
	CircLink	1	2	A, B, C	730			730	765	0.0	0.0	0.000	A
	Entry	2	1	(A, B, C)	1252			1253	1315	1.4	0.1	0.593	A
	Exit	1	1		502			502	519	0.0	0.0	0.030	A
			2		492			492	511	0.0	0.0	0.033	A
	CircLink	1	1	C	500			500	515	0.0	0.0	0.000	A
	CircBase	1	1	A, B	236			236	250	0.0	0.0	0.000	A
Exit	2	1		994			994	1033	2.2	1.6	4.963	A	
	3	1		994			994	1033	0.0	0.0	0.000	A	

# 2033 Base + CD + D - ST, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	8.54	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Standing Way (E)		ONE HOUR	✓	1471	100.000
B - Whaddon Road		ONE HOUR	✓	437	100.000
C - Buckingham Road (W)		ONE HOUR	✓	1420	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	2	230	1239
	B - Whaddon Road	251	0	186
	C - Buckingham Road (W)	1170	250	0

### Proportions

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	0.00	0.16	0.84
	B - Whaddon Road	0.57	0.00	0.43
	C - Buckingham Road (W)	0.82	0.18	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	50	1	2
	B - Whaddon Road	0	0	3
	C - Buckingham Road (W)	3	2	0

### Average PCU Per Veh

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road (W)
From	A - Standing Way (E)	1.500	1.010	1.018
	B - Whaddon Road	1.000	1.000	1.031
	C - Buckingham Road (W)	1.025	1.019	1.000

## Detailed Demand Data

### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	16:45-17:00	1108	1128
	17:00-17:15	1323	1346
	17:15-17:30	1620	1649

A - Standing Way (E)	17:30-17:45	1620	1649
	17:45-18:00	1323	1346
	18:00-18:15	1108	1128
B - Whaddon Road	16:45-17:00	329	333
	17:00-17:15	393	398
	17:15-17:30	481	488
	17:30-17:45	481	488
	17:45-18:00	393	398
C - Buckingham Road (W)	18:00-18:15	329	333
	16:45-17:00	1069	1095
	17:00-17:15	1277	1307
	17:15-17:30	1563	1601
	17:30-17:45	1563	1601
	17:45-18:00	1277	1307
	18:00-18:15	1069	1095

## Results

### Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	8.06	3.5	A	1356	2034
B - Whaddon Road	6.56	1.1	A	398	598
C - Buckingham Road (W)	9.63	4.2	A	1309	1963

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1105	276	181	1103	1121	1061	0.0	1.8	4.844	A
B - Whaddon Road	325	81	929	323	337	355	0.0	0.4	4.453	A
C - Buckingham Road (W)	1050	262	195	1047	1089	1053	0.0	1.7	4.767	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1315	329	220	1317	1336	1284	1.8	2.3	5.649	A
B - Whaddon Road	380	95	1112	381	390	426	0.4	0.6	5.088	A
C - Buckingham Road (W)	1288	322	223	1281	1308	1270	1.7	2.4	5.719	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1651	413	278	1644	1661	1589	2.3	3.4	7.843	A
B - Whaddon Road	478	120	1398	477	488	524	0.6	1.0	6.456	A
C - Buckingham Road (W)	1575	394	282	1585	1606	1585	2.4	4.1	9.632	A

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1630	408	269	1624	1648	1561	3.4	3.5	8.065	A
B - Whaddon Road	492	123	1376	490	492	517	1.0	1.1	6.560	A
C - Buckingham Road (W)	1546	386	289	1542	1582	1573	4.1	3.8	8.879	A

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1348	337	235	1343	1358	1298	3.5	2.4	5.561	A
B - Whaddon Road	397	99	1124	397	400	454	1.1	0.6	5.520	A
C - Buckingham Road (W)	1296	324	231	1302	1323	1293	3.8	1.8	6.144	A

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1348	337	235	1343	1358	1298	3.5	2.4	5.561	A
B - Whaddon Road	397	99	1124	397	400	454	1.1	0.6	5.520	A
C - Buckingham Road (W)	1296	324	231	1302	1323	1293	3.8	1.8	6.144	A

A - Standing Way (E)	1087	272	197	1086	1130	1086	2.4	1.5	4.783	A
B - Whaddon Road	318	79	917	316	337	366	0.6	0.4	4.561	A
C - Buckingham Road (W)	1099	275	184	1099	1104	1048	1.8	1.6	4.779	A

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	559	999	0.560	558	563	0.0	1.0	5.718	A
			2	A, C	546	1297	0.421	545	558	0.0	0.7	3.957	A
	Exit	1	1		522			522	546	0.0	0.0	0.000	A
			2		539			539	551	0.0	0.0	0.000	A
	CircLink	1	1	A	535			535	551	0.0	0.0	0.000	A
			2	A, B, C	707			707	736	0.0	0.0	0.000	A
CircBase	1	1	B, C	181			181	190	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	131	951	0.137	130	142	0.0	0.2	4.325	A
			2	A, B	194	986	0.197	193	195	0.0	0.3	4.539	A
	Exit	1	1		355			355	362	0.0	0.0	0.000	A
			1	B, C	815			815	834	0.0	0.0	0.000	A
	CircLink	1	1	B, C	815			815	834	0.0	0.0	0.000	A
			2	A, C	469			469	477	0.0	0.0	0.000	A
CircBase	1	1	C	465			465	471	0.0	0.0	0.000	A	
		2	A, C	464			464	479	0.0	0.0	0.000	A	
C - Buckingham Road (W)	Entry	1	1	(A, B, C)	325			325	339	0.0	0.0	0.003	A
			2	A	475	1100	0.432	475	500	0.0	0.7	4.414	A
	CircLink	1	2	A, B, C	723			723	744	0.0	0.0	0.000	A
			1	(A, B, C)	1050			1049	1096	0.0	0.1	0.078	A
	Exit	1	1		535			535	541	0.0	0.0	0.018	A
			2		522			522	548	0.0	0.0	0.018	A
	CircLink	1	1	C	529			529	543	0.0	0.0	0.000	A
	CircBase	1	1	A, B	195			195	198	0.0	0.0	0.000	A
Exit	2	1		1057			1053	1082	0.0	1.8	5.019	A	
		3	1		1053			1053	1082	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	637	987	0.645	639	652	1.0	1.4	6.819	A
			2	A, C	679	1286	0.528	679	684	0.7	0.9	4.527	A
	Exit	1	1		643			643	653	0.0	0.0	0.000	A
			2		641			641	654	0.0	0.0	0.000	A
	CircLink	1	1	A	644			644	649	0.0	0.0	0.000	A
			2	A, B, C	861			861	885	0.0	0.0	0.000	A
CircBase	1	1	B, C	220			220	227	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	162	888	0.182	161	166	0.2	0.3	4.874	A
			2	A, B	219	913	0.240	221	223	0.3	0.3	5.193	A
	Exit	1	1		426			426	434	0.0	0.0	0.000	A
			1	B, C	977			977	996	0.0	0.0	0.000	A
	CircLink	1	1	B, C	977			977	996	0.0	0.0	0.000	A
			2	A, C	561			561	567	0.0	0.0	0.000	A
CircBase	1	1	C	557			557	565	0.0	0.0	0.000	A	
		2	A, C	555			555	564	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	380			380	390	0.0	0.0	0.030	A	
C - Buckingham Road (W)	Entry	1	1	A	596	1092	0.547	595	609	0.7	1.0	5.171	A
			2	A, B, C	689	1091	0.632	687	699	1.0	1.2	5.709	A
	CircLink	1	2	A, B, C	842			842	864	0.0	0.0	0.000	A
			1	(A, B, C)	1288			1285	1310	0.1	0.3	0.261	A
	Exit	1	1		640			641	647	0.0	0.1	0.173	A
			2		630			630	645	0.0	0.1	0.169	A
	CircLink	1	1	C	651			651	655	0.0	0.0	0.000	A
	CircBase	1	1	A, B	223			223	226	0.0	0.0	0.000	A
Exit	2	1		1271			1270	1288	1.8	2.6	6.779	A	
		3	1		1270			1270	1288	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
			1	B, C	779	968	0.805	777	784	1.4	1.9	9.543	A

A - Standing Way (E)	Entry	1	2	A, C	871	1265	0.689	867	877	0.9	1.5	6.319	A
	Exit	1	1		783			783	802	0.0	0.0	0.000	A
			2		806			806	802	0.0	0.0	0.000	A
	CircLink	1	1	A	786			786	794	0.0	0.0	0.000	A
			2	A, B, C	1081			1081	1093	0.0	0.0	0.000	A
CircBase	1	1	B, C	278			278	284	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	198	776	0.255	198	210	0.3	0.4	5.918	A
			2	A, B	281	799	0.352	279	279	0.3	0.7	6.650	A
	Exit	1	1		524			524	541	0.0	0.0	0.000	A
			1	B, C	1217			1217	1240	0.0	0.0	0.000	A
	CircLink	1	2	A, C	705			705	705	0.0	0.0	0.000	A
			1	C	690			690	701	0.0	0.0	0.000	A
CircBase	1	2	A, C	708			708	703	0.0	0.0	0.000	A	
		2	1	(A, B, C)	478			479	490	0.0	0.0	0.114	A
C - Buckingham Road (W)	Entry	1	1	A	743	1068	0.696	745	760	1.0	1.3	6.585	A
			2	A, B, C	840	1072	0.784	841	846	1.2	1.6	7.353	A
	CircLink	1	2	A, B, C	1083			1083	1085	0.0	0.0	0.000	A
			2	(A, B, C)	1575			1583	1609	0.3	1.2	2.634	A
	Exit	1	1		809			807	807	0.1	1.0	3.551	A
			2		784			782	795	0.1	1.1	3.601	A
	CircLink	1	1	C	792			792	807	0.0	0.0	0.000	A
	CircBase	1	1	A, B	282			282	282	0.0	0.0	0.000	A
	Exit	2	1		1589			1585	1588	2.6	6.1	12.323	B
3			1		1585			1585	1588	0.0	0.0	0.000	A

## 17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	774	970	0.798	771	779	1.9	1.9	9.664	A
			2	A, C	856	1266	0.677	853	869	1.5	1.5	6.625	A
	Exit	1	1		776			776	793	0.0	0.0	0.000	A
			2		785			785	797	0.0	0.0	0.000	A
	CircLink	1	1	A	784			784	796	0.0	0.0	0.000	A
			2	A, B, C	1046			1046	1069	0.0	0.0	0.000	A
CircBase	1	1	B, C	269			269	275	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	206	782	0.264	204	213	0.4	0.5	5.916	A
			2	A, B	286	807	0.354	286	279	0.7	0.6	6.873	A
	Exit	1	1		517			517	528	0.0	0.0	0.000	A
			1	B, C	1197			1197	1228	0.0	0.0	0.000	A
	CircLink	1	2	A, C	696			696	695	0.0	0.0	0.000	A
			1	C	682			682	703	0.0	0.0	0.000	A
CircBase	1	2	A, C	693			693	693	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	492			492	492	0.0	0.0	0.095	A	
C - Buckingham Road (W)	Entry	1	1	A	729	1067	0.683	728	747	1.3	1.3	6.471	A
			2	A, B, C	814	1070	0.760	814	835	1.6	1.6	7.246	A
	CircLink	1	2	A, B, C	1077			1077	1087	0.0	0.0	0.000	A
			2	(A, B, C)	1546			1543	1582	1.2	1.0	1.997	A
	Exit	1	1		785			784	798	1.0	1.2	5.081	A
			2		792			790	805	1.1	1.1	4.966	A
	CircLink	1	1	C	790			790	800	0.0	0.0	0.000	A
	CircBase	1	1	A, B	289			289	283	0.0	0.0	0.000	A
Exit	2	1		1574			1573	1605	6.1	5.6	12.859	B	
		3	1		1573			1573	1605	0.0	0.0	0.000	A

## 17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	655	980	0.669	652	667	1.9	1.4	6.660	A
			2	A, C	693	1278	0.542	691	690	1.5	1.0	4.498	A
	Exit	1	1		646			646	658	0.0	0.0	0.000	A
			2		652			652	661	0.0	0.0	0.000	A
	CircLink	1	1	A	653			653	659	0.0	0.0	0.000	A
			2	A, B, C	880			880	891	0.0	0.0	0.000	A
CircBase	1	1	B, C	235			235	232	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	169	884	0.191	169	177	0.5	0.3	5.448	A
			2	A, B	228	907	0.252	228	223	0.6	0.4	5.477	A
	Exit	1	1		454			454	444	0.0	0.0	0.000	A
			1	B, C	1018			1018	1015	0.0	0.0	0.000	A
	CircLink	1	2	A, C	560			560	574	0.0	0.0	0.000	A
			1	C	564			564	577	0.0	0.0	0.000	A
CircBase	1	2	A, C	561			561	569	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	397			397	398	0.0	0.0	0.055	A	
			1	A	595	1087	0.547	596	615	1.3	0.8	5.401	A



C - Buckingham Road (W)	Entry	1	2	A, B, C	704	1088	0.647	706	709	1.6	1.0	5.937	A
	CircLink	1	2	A, B, C	879			879	885	0.0	0.0	0.000	A
	Entry	2	1	(A, B, C)	1296			1298	1319	1.0	0.0	0.469	A
	Exit	1	1		647			647	657	1.2	0.0	0.657	A
			2		643			643	671	1.1	0.0	0.651	A
	CircLink	1	1	C	642			642	660	0.0	0.0	0.000	A
	CircBase	1	1	A, B	231			231	227	0.0	0.0	0.000	A
	Exit	2	1		1290			1293	1341	5.6	2.3	8.034	A
3		1		1293			1293	1341	0.0	0.0	0.000	A	

## 18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B, C	548	995	0.551	546	563	1.4	0.9	5.743	A
			2	A, C	539	1292	0.417	539	567	1.0	0.6	3.829	A
	Exit	1	1		537			537	552	0.0	0.0	0.000	A
			2		549			549	550	0.0	0.0	0.000	A
	CircLink	1	1	A	538			538	546	0.0	0.0	0.000	A
			2	A, B, C	746			746	750	0.0	0.0	0.000	A
CircBase	1	1	B, C	197			197	195	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	134	961	0.140	134	146	0.3	0.1	4.720	A
			2	A, B	183	991	0.185	182	190	0.4	0.3	4.420	A
	Exit	1	1		366			366	369	0.0	0.0	0.000	A
			1	B, C	829			829	849	0.0	0.0	0.000	A
	CircLink	1	2	A, C	454			454	475	0.0	0.0	0.000	A
			1	C	461			461	474	0.0	0.0	0.000	A
CircBase	1	2	A, C	456			456	481	0.0	0.0	0.000	A	
Entry	2	1	(A, B, C)	318			318	336	0.0	0.0	0.012	A	
C - Buckingham Road (W)	Entry	1	1	A	502	1100	0.457	502	505	0.8	0.6	4.558	A
			2	A, B, C	597	1100	0.543	597	599	1.0	1.0	4.861	A
	CircLink	1	2	A, B, C	694			694	738	0.0	0.0	0.000	A
	Entry	2	1	(A, B, C)	1099			1099	1103	0.0	0.0	0.056	A
	Exit	1	1		519			519	549	0.0	0.0	0.072	A
			2		531			531	551	0.0	0.0	0.064	A
	CircLink	1	1	C	540			540	554	0.0	0.0	0.000	A
	CircBase	1	1	A, B	184			184	193	0.0	0.0	0.000	A
Exit	2	1		1049			1048	1103	2.3	1.6	5.227	A	
	3	1		1048			1048	1103	0.0	0.0	0.000	A	

# Junctions 9

## ARCADY 9 - Roundabout Module

Version: 9.5.1.7462  
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**Filename:** J12 - Kingsmead Roundabout - Mitigation only on Chaffron Way P02.j9

**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J12

**Report generation date:** 27/01/2021 11:39:02

- »2033 Base + CD + D, AM
- »2033 Base + CD + D, PM
- »2033 Base + CD + D with TP, AM
- »2033 Base + CD + D with TP, PM
- »2033 Base + CD + D - ST, AM
- »2033 Base + CD + D - ST, PM

### Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2033 Base + CD + D</b>										
A - Snelshall Street (N)	D15	11.0	40.80	0.94	E	D16	1.5	6.73	0.60	A
B - Chaffron Way		72.9	390.88	1.25	F		104.1	501.33	1.29	F
C - Snelshall Street (S)		2.1	9.67	0.68	A		6.1	23.94	0.87	C
D - Hayton Way		0.8	4.69	0.44	A		0.2	3.39	0.19	A
<b>2033 Base + CD + D with TP</b>										
A - Snelshall Street (N)	D17	9.8	36.81	0.93	E	D18	1.2	5.89	0.54	A
B - Chaffron Way		69.0	359.63	1.24	F		79.1	343.04	1.21	F
C - Snelshall Street (S)		1.9	9.27	0.66	A		5.8	23.11	0.86	C
D - Hayton Way		0.8	4.62	0.44	A		0.2	3.37	0.19	A
<b>2033 Base + CD + D - ST</b>										
A - Snelshall Street (N)	D21	4.7	18.94	0.83	C	D22	1.0	5.44	0.50	A
B - Chaffron Way		45.5	226.57	1.13	F		67.3	272.27	1.17	F
C - Snelshall Street (S)		1.4	7.74	0.59	A		3.1	13.74	0.76	B
D - Hayton Way		0.7	4.34	0.42	A		0.2	3.15	0.18	A

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

### File summary

#### File Description

<b>Title</b>	Kingsmead Roundabout
<b>Location</b>	51°59'50.88"N, 0°47'53.02"W
<b>Site number</b>	12
<b>Date</b>	06/01/2021
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	Will Forster
<b>Description</b>	

### Units

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

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	Ü
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	Ü
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	Ü
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	Ü
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	Ü
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	Ü
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	Ü
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	Ü
D11	2026 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	Ü
D12	2026 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	Ü
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	Ü
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	Ü
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	Ü
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	Ü
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	Ü
D21	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	Ü
D22	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	Ü

### Analysis Set Details

ID	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Ü	Ü	D15,D16,D17,D18,D21,D22	100.000	100.000

# 2033 Base + CD + D, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	101.68	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Snelshall Street (N)	
B	Chaffron Way	
C	Snelshall Street (S)	
D	Hayton Way	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Snelshall Street (N)	3.20	7.27	12.5	38.7	56.0	28.0	
B - Chaffron Way	3.20	7.00	9.3	30.5	56.0	39.0	
C - Snelshall Street (S)	3.15	7.56	7.3	21.4	56.0	46.0	
D - Hayton Way	3.81	7.31	17.0	34.1	56.0	10.0	

## Slope / Intercept / Capacity

### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Snelshall Street (N)	None		
B - Chaffron Way	Direct	Calibrated against queue length	-400
C - Snelshall Street (S)	None		
D - Hayton Way	None		

### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Snelshall Street (N)	0.573	1622
B - Chaffron Way	0.530	1047
C - Snelshall Street (S)	0.499	1335
D - Hayton Way	0.649	1954

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
ü	ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street (N)		ONE HOUR	ü	945	100.000
B - Chaffron Way		ONE HOUR	ü	610	100.000
C - Snelshall Street (S)		ONE HOUR	ü	713	100.000
D - Hayton Way		ONE HOUR	ü	550	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	233	636	76
	B - Chaffron Way	73	2	383	151
	C - Snelshall Street (S)	366	294	1	52
	D - Hayton Way	93	332	124	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	1	2	6
	B - Chaffron Way	5	0	3	3
	C - Snelshall Street (S)	2	2	0	12
	D - Hayton Way	7	4	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Snelshall Street (N)	0.94	40.80	11.0	E	867	1301
B - Chaffron Way	1.25	390.88	72.9	F	560	839
C - Snelshall Street (S)	0.68	9.67	2.1	A	655	982
D - Hayton Way	0.44	4.69	0.8	A	505	757

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	711	178	565	1263	0.563	706	398	0.0	1.3	6.410	A
B - Chaffron Way	459	115	626	688	0.667	451	645	0.0	1.9	14.758	B
C - Snelshall Street (S)	537	134	225	1187	0.453	534	853	0.0	0.8	5.487	A
D - Hayton Way	414	103	551	1528	0.271	412	208	0.0	0.4	3.222	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	849	212	677	1199	0.709	845	476	1.3	2.3	10.060	B
B - Chaffron Way	548	137	750	624	0.879	534	772	1.9	5.5	35.470	E

C - Snelshall Street (S)	641	160	267	1165	0.550	640	1017	0.8	1.2	6.828	A
D - Hayton Way	494	124	659	1459	0.339	494	247	0.4	0.5	3.727	A

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	1040	260	828	1112	0.936	1012	568	2.3	9.3	30.178	D
B - Chaffron Way	671	168	901	544	1.233	538	939	5.5	38.8	166.316	F
C - Snelshall Street (S)	785	196	282	1158	0.678	782	1157	1.2	2.0	9.498	A
D - Hayton Way	605	151	792	1375	0.440	604	272	0.5	0.8	4.666	A

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	1040	260	830	1111	0.937	1034	570	9.3	11.0	40.803	E
B - Chaffron Way	671	168	917	536	1.253	535	946	38.8	72.9	375.855	F
C - Snelshall Street (S)	785	196	282	1157	0.679	785	1170	2.0	2.1	9.667	A
D - Hayton Way	605	151	794	1373	0.441	605	273	0.8	0.8	4.689	A

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	849	212	680	1197	0.710	883	487	11.0	2.5	12.651	B
B - Chaffron Way	548	137	779	608	0.901	600	785	72.9	59.9	390.885	F
C - Snelshall Street (S)	641	160	294	1151	0.557	645	1085	2.1	1.3	7.148	A
D - Hayton Way	494	124	672	1451	0.341	495	267	0.8	0.5	3.770	A

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	711	178	570	1260	0.564	716	428	2.5	1.3	6.676	A
B - Chaffron Way	459	115	634	684	0.671	673	652	59.9	6.4	185.272	F
C - Snelshall Street (S)	537	134	308	1145	0.469	539	999	1.3	0.9	5.956	A
D - Hayton Way	414	103	583	1507	0.275	415	264	0.5	0.4	3.294	A

# 2033 Base + CD + D, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	155.87	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
ü	ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street (N)		ONE HOUR	ü	717	100.000
B - Chaffron Way		ONE HOUR	ü	754	100.000
C - Snelshall Street (S)		ONE HOUR	ü	883	100.000
D - Hayton Way		ONE HOUR	ü	229	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1	97	548	71
	B - Chaffron Way	132	1	363	258
	C - Snelshall Street (S)	541	244	1	97
	D - Hayton Way	52	121	56	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	0	1	19
	B - Chaffron Way	2	0	0	0
	C - Snelshall Street (S)	0	1	0	0
	D - Hayton Way	0	0	0	0

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Snelshall Street (N)	0.60	6.73	1.5	A	658	987
B - Chaffron Way	1.29	501.33	104.1	F	692	1038
C - Snelshall Street (S)	0.87	23.94	6.1	C	810	1215
D - Hayton Way	0.19	3.39	0.2	A	210	315

## Main Results for each time segment

## 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	540	135	317	1407	0.384	537	541	0.0	0.6	4.126	A
B - Chaffron Way	568	142	507	770	0.737	557	347	0.0	2.6	16.209	C
C - Snelshall Street (S)	665	166	343	1153	0.576	659	721	0.0	1.3	7.214	A
D - Hayton Way	172	43	686	1505	0.115	172	316	0.0	0.1	2.700	A

## 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	645	161	379	1372	0.470	643	646	0.6	0.9	4.934	A
B - Chaffron Way	678	169	607	716	0.947	652	415	2.6	9.0	44.815	E
C - Snelshall Street (S)	794	198	403	1122	0.707	790	857	1.3	2.3	10.696	B
D - Hayton Way	206	51	819	1418	0.145	206	374	0.1	0.2	2.968	A

## 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	789	197	462	1326	0.596	787	758	0.9	1.4	6.658	A
B - Chaffron Way	830	208	743	642	1.292	639	506	9.0	56.8	200.061	F
C - Snelshall Street (S)	972	243	410	1117	0.870	959	972	2.3	5.7	21.069	C
D - Hayton Way	252	63	967	1322	0.191	252	402	0.2	0.2	3.364	A

## 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	789	197	465	1324	0.596	789	765	1.4	1.5	6.735	A
B - Chaffron Way	830	208	745	641	1.294	641	509	56.8	104.1	446.751	F
C - Snelshall Street (S)	972	243	412	1117	0.871	971	974	5.7	6.1	23.942	C
D - Hayton Way	252	63	978	1315	0.192	252	404	0.2	0.2	3.387	A

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	645	161	384	1369	0.471	647	666	1.5	0.9	5.001	A
B - Chaffron Way	678	169	610	714	0.949	707	421	104.1	96.7	501.333	F
C - Snelshall Street (S)	794	198	432	1108	0.716	808	886	6.1	2.6	12.506	B
D - Hayton Way	206	51	845	1402	0.147	206	395	0.2	0.2	3.013	A

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	540	135	320	1405	0.384	541	583	0.9	0.6	4.169	A
B - Chaffron Way	568	142	510	768	0.739	760	351	96.7	48.5	346.307	F
C - Snelshall Street (S)	665	166	449	1101	0.604	669	822	2.6	1.6	8.427	A
D - Hayton Way	172	43	730	1476	0.117	173	387	0.2	0.1	2.763	A



# 2033 Base + CD + D with TP, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	93.98	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
ü	ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street (N)		ONE HOUR	ü	934	100.000
B - Chaffron Way		ONE HOUR	ü	608	100.000
C - Snelshall Street (S)		ONE HOUR	ü	697	100.000
D - Hayton Way		ONE HOUR	ü	550	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	233	625	76
	B - Chaffron Way	73	2	381	151
	C - Snelshall Street (S)	351	293	1	52
	D - Hayton Way	93	332	124	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	1	2	6
	B - Chaffron Way	5	0	3	3
	C - Snelshall Street (S)	2	2	0	12
	D - Hayton Way	7	4	0	0

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Snelshall Street (N)	0.93	36.81	9.8	E	857	1285
B - Chaffron Way	1.24	359.63	69.0	F	558	837
C - Snelshall Street (S)	0.66	9.27	1.9	A	640	960
D - Hayton Way	0.44	4.62	0.8	A	505	757

## Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	703	176	564	1263	0.557	698	387	0.0	1.2	6.316	A
B - Chaffron Way	458	114	618	693	0.661	450	644	0.0	1.9	14.435	B
C - Snelshall Street (S)	525	131	225	1186	0.443	522	844	0.0	0.8	5.393	A
D - Hayton Way	414	103	539	1536	0.270	412	208	0.0	0.4	3.200	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	840	210	676	1199	0.700	835	463	1.2	2.3	9.787	A
B - Chaffron Way	546	137	740	629	0.869	533	772	1.9	5.2	33.729	D
C - Snelshall Street (S)	627	157	267	1165	0.538	625	1006	0.8	1.1	6.654	A
D - Hayton Way	494	124	645	1468	0.337	494	247	0.4	0.5	3.693	A

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	1028	257	827	1112	0.924	1003	553	2.3	8.5	28.178	D
B - Chaffron Way	669	167	891	549	1.218	542	939	5.2	36.9	157.603	F
C - Snelshall Street (S)	768	192	284	1156	0.664	765	1149	1.1	1.9	9.120	A
D - Hayton Way	605	151	775	1385	0.437	604	274	0.5	0.8	4.604	A

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	1028	257	829	1111	0.925	1023	554	8.5	9.8	36.814	E
B - Chaffron Way	669	167	906	542	1.236	541	946	36.9	69.0	353.980	F
C - Snelshall Street (S)	768	192	285	1156	0.664	768	1162	1.9	1.9	9.269	A
D - Hayton Way	605	151	778	1384	0.438	605	275	0.8	0.8	4.625	A

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	840	210	679	1197	0.701	869	474	9.8	2.4	11.897	B
B - Chaffron Way	546	137	766	615	0.888	607	783	69.0	54.0	359.632	F
C - Snelshall Street (S)	627	157	297	1150	0.545	630	1075	1.9	1.2	6.960	A
D - Hayton Way	494	124	658	1460	0.339	495	269	0.8	0.5	3.736	A

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	703	176	569	1261	0.558	708	415	2.4	1.3	6.560	A
B - Chaffron Way	458	114	626	689	0.664	663	651	54.0	2.6	151.817	F
C - Snelshall Street (S)	525	131	305	1146	0.458	526	984	1.2	0.9	5.826	A
D - Hayton Way	414	103	570	1516	0.273	415	262	0.5	0.4	3.269	A

# 2033 Base + CD + D with TP, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	112.43	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
ü	ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street (N)		ONE HOUR	ü	646	100.000
B - Chaffron Way		ONE HOUR	ü	749	100.000
C - Snelshall Street (S)		ONE HOUR	ü	867	100.000
D - Hayton Way		ONE HOUR	ü	229	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1	97	477	71
	B - Chaffron Way	132	1	358	258
	C - Snelshall Street (S)	527	242	1	97
	D - Hayton Way	52	121	56	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	0	1	19
	B - Chaffron Way	2	0	0	0
	C - Snelshall Street (S)	0	1	0	0
	D - Hayton Way	0	0	0	0

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Snelshall Street (N)	0.54	5.89	1.2	A	593	889
B - Chaffron Way	1.21	343.04	79.1	F	687	1031
C - Snelshall Street (S)	0.86	23.11	5.8	C	796	1193
D - Hayton Way	0.19	3.37	0.2	A	210	315

## Main Results for each time segment

## 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	486	122	315	1406	0.346	484	531	0.0	0.5	3.899	A
B - Chaffron Way	564	141	454	798	0.706	555	345	0.0	2.3	14.306	B
C - Snelshall Street (S)	653	163	344	1153	0.566	648	665	0.0	1.3	7.054	A
D - Hayton Way	172	43	674	1513	0.114	172	317	0.0	0.1	2.685	A

## 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	581	145	377	1371	0.424	580	635	0.5	0.7	4.548	A
B - Chaffron Way	673	168	544	750	0.898	657	413	2.3	6.5	33.843	D
C - Snelshall Street (S)	779	195	407	1120	0.696	776	793	1.3	2.2	10.338	B
D - Hayton Way	206	51	806	1427	0.144	206	377	0.1	0.2	2.948	A

## 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	711	178	460	1324	0.537	710	750	0.7	1.1	5.842	A
B - Chaffron Way	825	206	665	684	1.206	677	504	6.5	43.4	148.070	F
C - Snelshall Street (S)	955	239	432	1106	0.863	942	910	2.2	5.4	20.418	C
D - Hayton Way	252	63	958	1328	0.190	252	416	0.2	0.2	3.345	A

## 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	711	178	463	1322	0.538	711	758	1.1	1.2	5.890	A
B - Chaffron Way	825	206	667	683	1.208	682	507	43.4	79.1	327.337	F
C - Snelshall Street (S)	955	239	435	1105	0.864	953	914	5.4	5.8	23.113	C
D - Hayton Way	252	63	969	1321	0.191	252	420	0.2	0.2	3.367	A

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	581	145	382	1368	0.425	582	660	1.2	0.7	4.593	A
B - Chaffron Way	673	168	546	748	0.900	739	419	79.1	62.7	343.043	F
C - Snelshall Street (S)	779	195	451	1099	0.710	793	834	5.8	2.5	12.231	B
D - Hayton Way	206	51	836	1407	0.146	206	407	0.2	0.2	2.997	A

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	486	122	319	1404	0.346	487	577	0.7	0.5	3.931	A
B - Chaffron Way	564	141	457	797	0.708	784	349	62.7	7.6	168.318	F
C - Snelshall Street (S)	653	163	464	1093	0.597	657	777	2.5	1.5	8.332	A
D - Hayton Way	172	43	723	1481	0.116	173	397	0.2	0.1	2.753	A

# 2033 Base + CD + D - ST, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	61.63	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D21	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
ü	ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street (N)		ONE HOUR	ü	839	100.000
B - Chaffron Way		ONE HOUR	ü	610	100.000
C - Snelshall Street (S)		ONE HOUR	ü	618	100.000
D - Hayton Way		ONE HOUR	ü	550	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	233	530	76
	B - Chaffron Way	73	2	383	151
	C - Snelshall Street (S)	271	294	1	52
	D - Hayton Way	93	332	124	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	1	2	6
	B - Chaffron Way	5	0	3	3
	C - Snelshall Street (S)	2	2	0	12
	D - Hayton Way	7	4	0	0

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Snelshall Street (N)	0.83	18.94	4.7	C	770	1155
B - Chaffron Way	1.13	226.57	45.5	F	560	839
C - Snelshall Street (S)	0.59	7.74	1.4	A	567	851
D - Hayton Way	0.42	4.34	0.7	A	505	757

## Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	632	158	565	1263	0.500	628	327	0.0	1.0	5.633	A
B - Chaffron Way	459	115	548	730	0.629	453	645	0.0	1.6	12.707	B
C - Snelshall Street (S)	466	116	225	1186	0.393	463	775	0.0	0.6	4.966	A
D - Hayton Way	414	103	480	1573	0.263	413	208	0.0	0.4	3.096	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	754	189	677	1198	0.629	751	392	1.0	1.7	8.006	A
B - Chaffron Way	548	137	656	673	0.814	539	773	1.6	3.8	25.389	D
C - Snelshall Street (S)	556	139	269	1164	0.478	555	926	0.6	0.9	5.905	A
D - Hayton Way	494	124	575	1513	0.327	494	249	0.4	0.5	3.530	A

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	924	231	828	1111	0.831	913	470	1.7	4.4	17.226	C
B - Chaffron Way	671	168	797	599	1.121	584	943	3.8	25.6	108.683	F
C - Snelshall Street (S)	681	170	300	1148	0.593	679	1081	0.9	1.4	7.642	A
D - Hayton Way	605	151	694	1437	0.421	604	285	0.5	0.7	4.320	A

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	924	231	830	1110	0.832	923	472	4.4	4.7	18.944	C
B - Chaffron Way	671	168	805	595	1.129	592	948	25.6	45.5	226.569	F
C - Snelshall Street (S)	681	170	304	1146	0.594	681	1093	1.4	1.4	7.740	A
D - Hayton Way	605	151	697	1435	0.422	605	288	0.7	0.7	4.338	A

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	754	189	680	1197	0.630	766	407	4.7	1.7	8.572	A
B - Chaffron Way	548	137	666	667	0.821	653	780	45.5	19.3	183.137	F
C - Snelshall Street (S)	556	139	312	1142	0.487	558	1007	1.4	1.0	6.189	A
D - Hayton Way	494	124	592	1502	0.329	495	278	0.7	0.5	3.578	A

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	632	158	569	1261	0.501	634	338	1.7	1.0	5.777	A
B - Chaffron Way	459	115	553	727	0.632	529	650	19.3	1.8	24.761	C
C - Snelshall Street (S)	466	116	254	1171	0.398	467	828	1.0	0.7	5.122	A
D - Hayton Way	414	103	493	1565	0.265	414	228	0.5	0.4	3.132	A

# 2033 Base + CD + D - ST, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	93.35	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D22	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
ü	ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street (N)		ONE HOUR	ü	596	100.000
B - Chaffron Way		ONE HOUR	ü	754	100.000
C - Snelshall Street (S)		ONE HOUR	ü	761	100.000
D - Hayton Way		ONE HOUR	ü	229	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1	97	427	71
	B - Chaffron Way	132	1	363	258
	C - Snelshall Street (S)	419	244	1	97
	D - Hayton Way	52	121	56	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	0	1	19
	B - Chaffron Way	2	0	0	0
	C - Snelshall Street (S)	0	1	0	0
	D - Hayton Way	0	0	0	0

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Snelshall Street (N)	0.50	5.44	1.0	A	547	820
B - Chaffron Way	1.17	272.27	67.3	F	692	1038
C - Snelshall Street (S)	0.76	13.74	3.1	B	698	1048
D - Hayton Way	0.18	3.15	0.2	A	210	315

## Main Results for each time segment

## 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	449	112	317	1401	0.320	447	451	0.0	0.5	3.766	A
B - Chaffron Way	568	142	417	818	0.694	559	347	0.0	2.2	13.489	B
C - Snelshall Street (S)	573	143	344	1153	0.497	569	632	0.0	1.0	6.130	A
D - Hayton Way	172	43	596	1564	0.110	172	317	0.0	0.1	2.586	A

## 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	536	134	379	1366	0.392	535	539	0.5	0.6	4.328	A
B - Chaffron Way	678	169	499	773	0.876	664	416	2.2	5.6	29.678	D
C - Snelshall Street (S)	684	171	409	1119	0.611	682	754	1.0	1.5	8.191	A
D - Hayton Way	206	51	713	1487	0.138	206	378	0.1	0.2	2.808	A

## 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	656	164	464	1319	0.498	655	639	0.6	1.0	5.410	A
B - Chaffron Way	830	208	611	713	1.165	703	508	5.6	37.4	125.670	F
C - Snelshall Street (S)	838	209	444	1100	0.761	832	870	1.5	3.0	13.123	B
D - Hayton Way	252	63	851	1397	0.180	252	425	0.2	0.2	3.143	A

## 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	656	164	465	1318	0.498	656	644	1.0	1.0	5.440	A
B - Chaffron Way	830	208	612	712	1.166	711	510	37.4	67.3	272.272	F
C - Snelshall Street (S)	838	209	448	1098	0.763	838	875	3.0	3.1	13.743	B
D - Hayton Way	252	63	857	1393	0.181	252	428	0.2	0.2	3.154	A

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	536	134	382	1364	0.393	537	561	1.0	0.7	4.358	A
B - Chaffron Way	678	169	501	772	0.878	761	419	67.3	46.5	269.252	F
C - Snelshall Street (S)	684	171	460	1094	0.626	690	802	3.1	1.7	9.029	A
D - Hayton Way	206	51	737	1472	0.140	206	412	0.2	0.2	2.846	A

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Snelshall Street (N)	449	112	320	1400	0.321	449	487	0.7	0.5	3.790	A
B - Chaffron Way	568	142	419	817	0.695	743	350	46.5	2.6	93.221	F
C - Snelshall Street (S)	573	143	440	1105	0.519	575	722	1.7	1.1	6.835	A
D - Hayton Way	172	43	634	1539	0.112	173	381	0.2	0.1	2.636	A



<b>Junctions 9</b>
<b>ARCADY 9 - Roundabout Module</b>
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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**Filename:** J14 - Furzton Roundabout\_AM.j9

**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J14

**Report generation date:** 27/01/2021 11:59:27

- » 2033 Base + CD + D, AM
- » 2033 Base + CD + D with TP, AM
- » 2033 Base + CD + D - ST, AM

### Summary of junction performance

AM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2033 Base + CD + D</b>					
A - Fulmer Street (N)	D15	1.0	6.28	0.51	A
B - Chaffron Way (E)		1.7	7.84	0.63	A
C - Fulmer Street (S)		24.2	67.88	1.00	F
D - Chaffron Way (W)		162.6	514.34	1.31	F
<b>2033 Base + CD + D with TP</b>					
A - Fulmer Street (N)	D17	1.0	6.25	0.50	A
B - Chaffron Way (E)		1.7	7.77	0.63	A
C - Fulmer Street (S)		22.1	63.16	0.99	F
D - Chaffron Way (W)		160.7	501.73	1.31	F
<b>2033 Base + CD + D - ST</b>					
A - Fulmer Street (N)	D19	1.0	6.33	0.51	A
B - Chaffron Way (E)		1.7	7.89	0.63	A
C - Fulmer Street (S)		25.4	70.47	1.00	F
D - Chaffron Way (W)		163.6	520.99	1.31	F

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

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

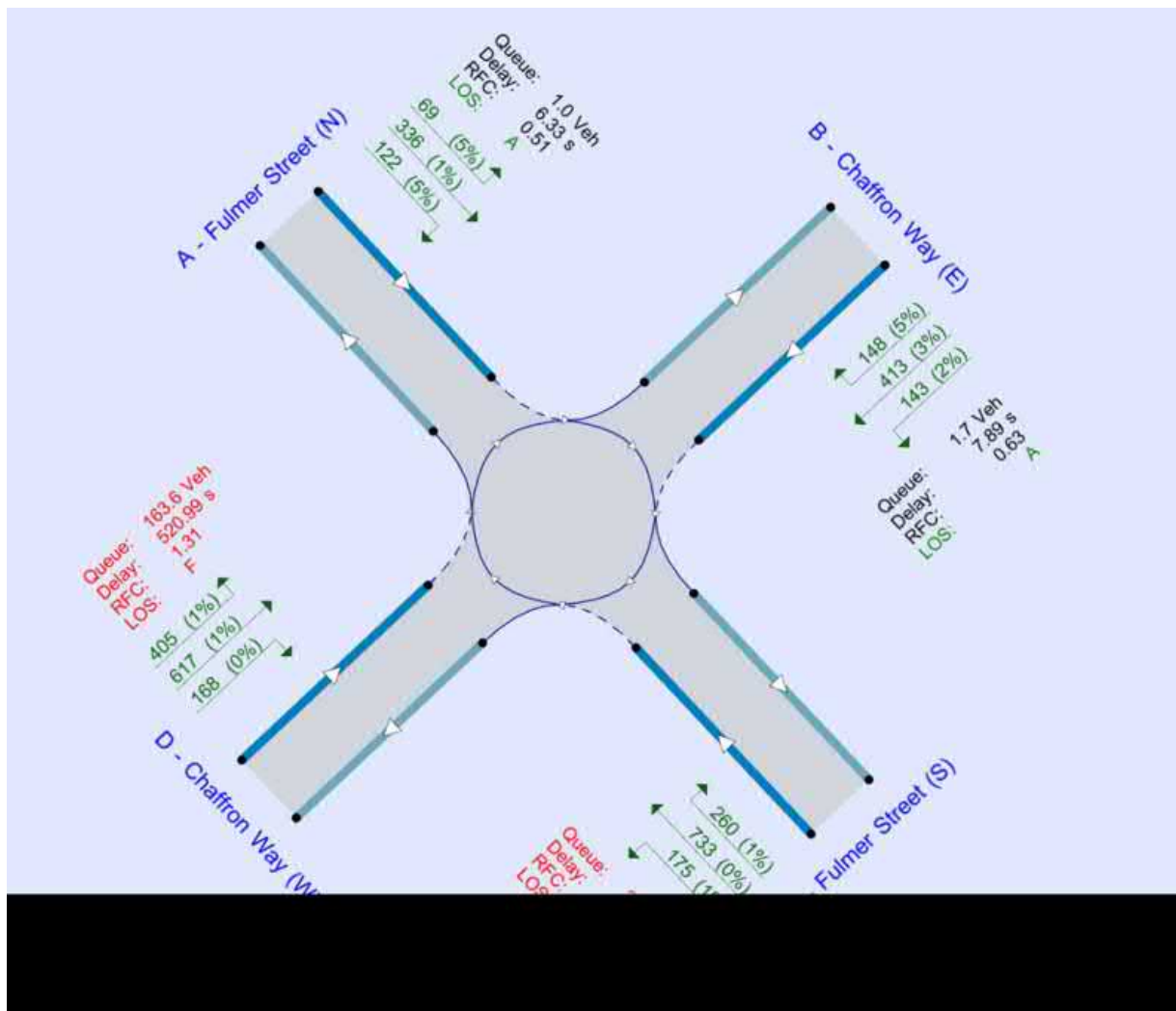
### File summary

#### File Description

<b>Title</b>	Furzton Roundabout
<b>Location</b>	52° 0'43.42"N, 0°46'38.81"W
<b>Site number</b>	14
<b>Date</b>	07/01/2021
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	Will Forster
<b>Description</b>	

### Units

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



The junction diagram reflects the last run of Junctions.

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	ü
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	ü
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	ü
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	ü
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	ü
D11	2026 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	ü
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	ü
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	ü
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	ü
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	ü
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	ü

### Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	ü	ü	D15,D17,D19	100.000	100.000

# 2033 Base + CD + D, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	B - Chaffron Way (E) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	C - Fulmer Street (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Chaffron Way (W) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	193.91	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Fulmer Street (N)	
B	Chaffron Way (E)	
C	Fulmer Street (S)	
D	Chaffron Way (W)	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Fulmer Street (N)	2.90	7.90	14.2	40.4	62.0	9.0	
B - Chaffron Way (E)	3.20	7.90	43.7	50.4	62.0	11.0	
C - Fulmer Street (S)	3.10	7.70	34.7	40.7	62.0	13.0	
D - Chaffron Way (W)	3.10	7.90	39.7	49.4	62.0	14.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Fulmer Street (N)	None		
B - Chaffron Way (E)	Direct	Calibrated against queue length	-500
C - Fulmer Street (S)	Direct	Calibrated against queue length	-275
D - Chaffron Way (W)	Direct	Calibrated against viedo survey	-329

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Fulmer Street (N)	0.579	1746
B - Chaffron Way (E)	0.659	1723
C - Fulmer Street (S)	0.632	1804
D - Chaffron Way (W)	0.645	1827

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
Ü	Ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street (N)		ONE HOUR	Ü	531	100.000
B - Chaffron Way (E)		ONE HOUR	Ü	708	100.000
C - Fulmer Street (S)		ONE HOUR	Ü	1170	100.000
D - Chaffron Way (W)		ONE HOUR	Ü	1196	100.000

### Origin-Destination Data

#### Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	9	69	331	122
	B - Chaffron Way (E)	148	5	143	413
	C - Fulmer Street (S)	728	260	7	175
	D - Chaffron Way (W)	405	617	168	6

#### Proportions

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0.02	0.13	0.62	0.23
	B - Chaffron Way (E)	0.21	0.01	0.20	0.58
	C - Fulmer Street (S)	0.62	0.22	0.01	0.15
	D - Chaffron Way (W)	0.34	0.52	0.14	0.00

### Vehicle Mix

#### Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	5	1	5
	B - Chaffron Way (E)	5	0	2	3
	C - Fulmer Street (S)	0	1	0	1
	D - Chaffron Way (W)	1	1	0	20

#### Average PCU Per Veh

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	1.000	1.050	1.014	1.047
	B - Chaffron Way (E)	1.047	1.000	1.021	1.030
	C - Fulmer Street (S)	1.003	1.006	1.000	1.013
	D - Chaffron Way (W)	1.006	1.011	1.000	1.200

### Detailed Demand Data

#### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street (N)	07:30-07:45	400	410
	07:45-08:00	477	490
	08:00-08:15	585	600
	08:15-08:30	585	600
	08:30-08:45	477	490
	08:45-09:00	400	410
B - Chaffron Way (E)	07:30-07:45	533	550
	07:45-08:00	637	657
	08:00-08:15	780	804
	08:15-08:30	780	804
	08:30-08:45	637	657
	08:45-09:00	533	550
C - Fulmer Street (S)	07:30-07:45	881	886
	07:45-08:00	1052	1058
	08:00-08:15	1289	1295
	08:15-08:30	1289	1295
	08:30-08:45	1052	1058
	08:45-09:00	881	886
D - Chaffron Way (W)	07:30-07:45	900	908
	07:45-08:00	1075	1084
	08:00-08:15	1316	1328
	08:15-08:30	1316	1328
	08:30-08:45	1075	1084
	08:45-09:00	900	908

### Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street (N)	0.51	6.28	1.0	A	487	731
B - Chaffron Way (E)	0.63	7.84	1.7	A	650	975
C - Fulmer Street (S)	1.00	67.88	24.2	F	1074	1611
D - Chaffron Way (W)	1.31	514.34	162.6	F	1097	1646

## Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	400	100	792	1251	0.320	398	964	0.0	0.5	4.209	A
B - Chaffron Way (E)	533	133	481	1357	0.393	531	709	0.0	0.6	4.342	A
C - Fulmer Street (S)	881	220	526	1452	0.607	875	486	0.0	1.5	6.181	A
D - Chaffron Way (W)	900	225	865	1253	0.718	890	536	0.0	2.5	9.683	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	477	119	934	1170	0.408	477	1146	0.5	0.7	5.183	A
B - Chaffron Way (E)	637	159	573	1298	0.491	636	838	0.6	1.0	5.428	A
C - Fulmer Street (S)	1052	263	630	1384	0.760	1046	579	1.5	3.0	10.470	B
D - Chaffron Way (W)	1075	269	1035	1144	0.940	1046	641	2.5	9.8	30.410	D

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	585	146	958	1157	0.506	583	1283	0.7	1.0	6.267	A
B - Chaffron Way (E)	780	195	663	1239	0.630	777	879	1.0	1.7	7.751	A
C - Fulmer Street (S)	1289	322	769	1293	0.996	1232	671	3.0	17.2	40.498	E
D - Chaffron Way (W)	1316	329	1225	1021	1.290	1017	776	9.8	84.6	177.955	F

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	585	146	957	1158	0.505	585	1298	1.0	1.0	6.282	A
B - Chaffron Way (E)	780	195	662	1239	0.629	780	879	1.7	1.7	7.835	A
C - Fulmer Street (S)	1289	322	771	1292	0.998	1261	671	17.2	24.2	67.881	F
D - Chaffron Way (W)	1316	329	1250	1004	1.310	1004	782	84.6	162.6	438.037	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	477	119	982	1143	0.418	479	1217	1.0	0.7	5.427	A
B - Chaffron Way (E)	637	159	581	1292	0.493	640	879	1.7	1.0	5.539	A
C - Fulmer Street (S)	1052	263	634	1381	0.762	1136	587	24.2	3.4	19.289	C
D - Chaffron Way (W)	1075	269	1112	1094	0.982	1087	658	162.6	159.5	514.339	F

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	400	100	1024	1119	0.357	400	1090	0.7	0.6	5.017	A
B - Chaffron Way (E)	533	133	534	1323	0.403	535	891	1.0	0.7	4.569	A
C - Fulmer Street (S)	881	220	531	1448	0.609	888	537	3.4	1.6	6.513	A
D - Chaffron Way (W)	900	225	877	1245	0.723	1237	542	159.5	75.2	343.129	F

# 2033 Base + CD + D with TP, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	B - Chaffron Way (E) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	C - Fulmer Street (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Chaffron Way (W) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J14	Furztion Roundabout	Standard Roundabout		A, B, C, D	188.69	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
ü	ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street (N)		ONE HOUR	ü	531	100.000
B - Chaffron Way (E)		ONE HOUR	ü	704	100.000
C - Fulmer Street (S)		ONE HOUR	ü	1162	100.000
D - Chaffron Way (W)		ONE HOUR	ü	1196	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	9	69	331	122
	B - Chaffron Way (E)	148	5	139	413
	C - Fulmer Street (S)	728	252	7	175
	D - Chaffron Way (W)	405	617	168	6

### Proportions

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0.02	0.13	0.62	0.23
	B - Chaffron Way (E)	0.21	0.01	0.20	0.59
	C - Fulmer Street (S)	0.63	0.22	0.01	0.15
	D - Chaffron Way (W)	0.34	0.52	0.14	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	5	1	5
	B - Chaffron Way (E)	5	0	2	3
	C - Fulmer Street (S)	0	1	0	1

### Average PCU Per Veh

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	1.000	1.050	1.014	1.047
	B - Chaffron Way (E)	1.047	1.000	1.021	1.030
	C - Fulmer Street (S)	1.003	1.006	1.000	1.013

D - Chaffron Way (W)	1	1	0	20
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D - Chaffron Way (W)	1.006	1.011	1.000	1.200
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## Detailed Demand Data

### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street (N)	07:30-07:45	400	410
	07:45-08:00	477	490
	08:00-08:15	585	600
	08:15-08:30	585	600
	08:30-08:45	477	490
	08:45-09:00	400	410
B - Chaffron Way (E)	07:30-07:45	530	547
	07:45-08:00	633	653
	08:00-08:15	776	800
	08:15-08:30	776	800
	08:30-08:45	633	653
	08:45-09:00	530	547
C - Fulmer Street (S)	07:30-07:45	875	880
	07:45-08:00	1045	1050
	08:00-08:15	1280	1287
	08:15-08:30	1280	1287
	08:30-08:45	1045	1050
	08:45-09:00	875	880
D - Chaffron Way (W)	07:30-07:45	900	908
	07:45-08:00	1075	1084
	08:00-08:15	1316	1328
	08:15-08:30	1316	1328
	08:30-08:45	1075	1084
	08:45-09:00	900	908

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street (N)	0.50	6.25	1.0	A	487	731
B - Chaffron Way (E)	0.63	7.77	1.7	A	646	970
C - Fulmer Street (S)	0.99	63.16	22.1	F	1067	1600
D - Chaffron Way (W)	1.31	501.73	160.7	F	1097	1646

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	400	100	786	1255	0.319	398	964	0.0	0.5	4.192	A
B - Chaffron Way (E)	530	133	481	1357	0.391	528	703	0.0	0.6	4.327	A
C - Fulmer Street (S)	875	219	526	1452	0.603	869	483	0.0	1.5	6.119	A
D - Chaffron Way (W)	900	225	859	1257	0.716	890	536	0.0	2.4	9.589	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	477	119	928	1174	0.407	477	1147	0.5	0.7	5.155	A
B - Chaffron Way (E)	633	158	573	1297	0.488	632	831	0.6	0.9	5.400	A
C - Fulmer Street (S)	1045	261	630	1384	0.755	1039	576	1.5	2.9	10.270	B
D - Chaffron Way (W)	1075	269	1028	1148	0.936	1047	641	2.4	9.5	29.647	D

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

A - Fulmer Street (N)	585	146	953	1160	0.504	583	1287	0.7	1.0	6.233	A
B - Chaffron Way (E)	776	194	663	1238	0.626	773	873	0.9	1.6	7.685	A
C - Fulmer Street (S)	1280	320	769	1293	0.990	1227	667	2.9	16.1	38.680	E
D - Chaffron Way (W)	1316	329	1220	1024	1.286	1020	776	9.5	83.5	174.983	F

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	585	146	951	1161	0.504	585	1301	1.0	1.0	6.249	A
B - Chaffron Way (E)	776	194	663	1239	0.626	775	873	1.6	1.7	7.769	A
C - Fulmer Street (S)	1280	320	771	1292	0.991	1256	667	16.1	22.1	63.160	F
D - Chaffron Way (W)	1316	329	1245	1008	1.306	1008	783	83.5	160.7	430.777	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	477	119	979	1145	0.417	479	1215	1.0	0.7	5.411	A
B - Chaffron Way (E)	633	158	583	1291	0.490	636	875	1.7	1.0	5.515	A
C - Fulmer Street (S)	1045	261	634	1381	0.756	1120	585	22.1	3.3	17.538	C
D - Chaffron Way (W)	1075	269	1097	1103	0.974	1096	656	160.7	155.3	501.732	F

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	400	100	1021	1121	0.357	400	1092	0.7	0.6	5.003	A
B - Chaffron Way (E)	530	133	534	1323	0.401	532	887	1.0	0.7	4.556	A
C - Fulmer Street (S)	875	219	531	1448	0.604	882	535	3.3	1.6	6.438	A
D - Chaffron Way (W)	900	225	871	1249	0.721	1241	542	155.3	70.0	328.657	F



# 2033 Base + CD + D - ST, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	B - Chaffron Way (E) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	C - Fulmer Street (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Chaffron Way (W) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J14	Furztion Roundabout	Standard Roundabout		A, B, C, D	196.57	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
ü	ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street (N)		ONE HOUR	ü	536	100.000
B - Chaffron Way (E)		ONE HOUR	ü	708	100.000
C - Fulmer Street (S)		ONE HOUR	ü	1175	100.000
D - Chaffron Way (W)		ONE HOUR	ü	1196	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	9	69	336	122
	B - Chaffron Way (E)	148	5	143	413
	C - Fulmer Street (S)	733	260	7	175
	D - Chaffron Way (W)	405	617	168	6

### Proportions

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0.02	0.13	0.63	0.23
	B - Chaffron Way (E)	0.21	0.01	0.20	0.58
	C - Fulmer Street (S)	0.62	0.22	0.01	0.15
	D - Chaffron Way (W)	0.34	0.52	0.14	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	5	1	5
	B - Chaffron Way (E)	5	0	2	3
	C - Fulmer Street (S)	0	1	0	1

### Average PCU Per Veh

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	1.000	1.050	1.014	1.047
	B - Chaffron Way (E)	1.047	1.000	1.021	1.030
	C - Fulmer Street (S)	1.003	1.006	1.000	1.013

D - Chaffron Way (W)	1	1	0	20
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D - Chaffron Way (W)	1.006	1.011	1.000	1.200
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## Detailed Demand Data

### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street (N)	07:30-07:45	403	414
	07:45-08:00	481	494
	08:00-08:15	590	605
	08:15-08:30	590	605
	08:30-08:45	481	494
	08:45-09:00	403	414
B - Chaffron Way (E)	07:30-07:45	533	550
	07:45-08:00	637	657
	08:00-08:15	780	804
	08:15-08:30	780	804
	08:30-08:45	637	657
	08:45-09:00	533	550
C - Fulmer Street (S)	07:30-07:45	884	889
	07:45-08:00	1056	1061
	08:00-08:15	1293	1300
	08:15-08:30	1293	1300
	08:30-08:45	1056	1061
	08:45-09:00	884	889
D - Chaffron Way (W)	07:30-07:45	900	908
	07:45-08:00	1075	1084
	08:00-08:15	1316	1328
	08:15-08:30	1316	1328
	08:30-08:45	1075	1084
	08:45-09:00	900	908

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street (N)	0.51	6.33	1.0	A	491	737
B - Chaffron Way (E)	0.63	7.89	1.7	A	650	975
C - Fulmer Street (S)	1.00	70.47	25.4	F	1078	1617
D - Chaffron Way (W)	1.31	520.99	163.6	F	1097	1646

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	403	101	792	1252	0.322	401	967	0.0	0.5	4.224	A
B - Chaffron Way (E)	533	133	484	1355	0.394	531	709	0.0	0.6	4.353	A
C - Fulmer Street (S)	884	221	526	1452	0.609	878	489	0.0	1.5	6.213	A
D - Chaffron Way (W)	900	225	868	1251	0.720	890	536	0.0	2.5	9.734	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	481	120	934	1171	0.411	481	1150	0.5	0.7	5.210	A
B - Chaffron Way (E)	637	159	577	1295	0.492	636	837	0.6	1.0	5.449	A
C - Fulmer Street (S)	1056	264	630	1384	0.763	1050	583	1.5	3.1	10.579	B
D - Chaffron Way (W)	1075	269	1038	1141	0.942	1045	641	2.5	9.9	30.821	D

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

A - Fulmer Street (N)	590	147	957	1158	0.509	588	1286	0.7	1.0	6.308	A
B - Chaffron Way (E)	780	195	668	1236	0.631	777	878	1.0	1.7	7.849	A
C - Fulmer Street (S)	1293	323	769	1293	1.000	1234	676	3.1	17.8	41.480	E
D - Chaffron Way (W)	1316	329	1228	1019	1.292	1015	775	9.9	85.2	179.500	F

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	590	147	955	1159	0.509	590	1300	1.0	1.0	6.325	A
B - Chaffron Way (E)	780	195	667	1236	0.631	780	878	1.7	1.7	7.887	A
C - Fulmer Street (S)	1293	323	771	1292	1.001	1263	676	17.8	25.4	70.470	F
D - Chaffron Way (W)	1316	329	1253	1003	1.313	1003	782	85.2	163.6	441.783	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	481	120	980	1144	0.421	483	1222	1.0	0.7	5.451	A
B - Chaffron Way (E)	637	159	585	1290	0.494	640	878	1.7	1.0	5.560	A
C - Fulmer Street (S)	1056	264	634	1381	0.764	1144	591	25.4	3.5	20.368	C
D - Chaffron Way (W)	1075	269	1119	1089	0.987	1083	658	163.6	161.7	520.989	F

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	403	101	1023	1120	0.360	404	1093	0.7	0.6	5.035	A
B - Chaffron Way (E)	533	133	537	1322	0.404	535	890	1.0	0.7	4.583	A
C - Fulmer Street (S)	884	221	531	1448	0.611	892	540	3.5	1.6	6.557	A
D - Chaffron Way (W)	900	225	881	1243	0.724	1235	542	161.7	77.9	350.768	F

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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**Filename:** J14 - Furzton Roundabout\_PM.j9

**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J14

**Report generation date:** 27/01/2021 12:03:13

- » 2033 Base + CD + D, PM
- » 2033 Base + CD + D with TP, PM
- » 2033 Base + CD + D - ST, PM

### Summary of junction performance

PM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2033 Base + CD + D</b>					
A - Fulmer Street (N)	D16	15.2	48.87	0.96	E
B - Chaffron Way (E)		128.4	356.18	1.23	F
C - Fulmer Street (S)		8.3	44.71	0.91	E
D - Chaffron Way (W)		0.7	3.69	0.42	A
<b>2033 Base + CD + D with TP</b>					
A - Fulmer Street (N)	D18	14.7	47.60	0.96	E
B - Chaffron Way (E)		123.5	338.58	1.22	F
C - Fulmer Street (S)		8.1	44.01	0.91	E
D - Chaffron Way (W)		0.7	3.68	0.42	A
<b>2033 Base + CD + D - ST</b>					
A - Fulmer Street (N)	D20	15.4	49.55	0.96	E
B - Chaffron Way (E)		128.8	358.43	1.23	F
C - Fulmer Street (S)		8.9	47.35	0.92	E
D - Chaffron Way (W)		0.7	3.71	0.42	A

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

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

### File summary

#### File Description

<b>Title</b>	Furzton Roundabout
<b>Location</b>	52° 0'43.42"N, 0°46'38.81"W
<b>Site number</b>	14
<b>Date</b>	07/01/2021
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	Will Forster
<b>Description</b>	

### Units

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

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	Ü
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	Ü
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	Ü
D12	2026 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	Ü
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	Ü
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	Ü
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	Ü
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	Ü

### Analysis Set Details

ID	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Ü	Ü	D16,D18,D20	100.000	100.000

# 2033 Base + CD + D, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	B - Chaffron Way (E) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	C - Fulmer Street (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Chaffron Way (W) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	143.39	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Fulmer Street (N)	
B	Chaffron Way (E)	
C	Fulmer Street (S)	
D	Chaffron Way (W)	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Fulmer Street (N)	2.90	7.90	14.2	40.4	62.0	9.0	
B - Chaffron Way (E)	3.20	7.90	43.7	50.4	62.0	11.0	
C - Fulmer Street (S)	3.10	7.70	34.7	40.7	62.0	13.0	
D - Chaffron Way (W)	3.10	7.90	39.7	49.4	62.0	14.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Fulmer Street (N)	Direct	Calibrated against queue length	-110
B - Chaffron Way (E)	Direct	Calibrated against queue length	-368
C - Fulmer Street (S)	Direct	Calibrated against queue length	-510
D - Chaffron Way (W)	None		

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Fulmer Street (N)	0.579	1636
B - Chaffron Way (E)	0.659	1855
C - Fulmer Street (S)	0.632	1569
D - Chaffron Way (W)	0.645	2156

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	Ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
Ü	Ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street (N)		ONE HOUR	Ü	1069	100.000
B - Chaffron Way (E)		ONE HOUR	Ü	1193	100.000
C - Fulmer Street (S)		ONE HOUR	Ü	650	100.000
D - Chaffron Way (W)		ONE HOUR	Ü	637	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	6	89	597	377
	B - Chaffron Way (E)	121	8	287	776
	C - Fulmer Street (S)	390	133	5	122
	D - Chaffron Way (W)	141	398	93	6

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	1	0	0
	B - Chaffron Way (E)	2	0	1	1
	C - Fulmer Street (S)	0	0	0	0
	D - Chaffron Way (W)	3	2	1	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street (N)	0.96	48.87	15.2	E	981	1471
B - Chaffron Way (E)	1.23	356.18	128.4	F	1094	1642
C - Fulmer Street (S)	0.91	44.71	8.3	E	596	894
D - Chaffron Way (W)	0.42	3.69	0.7	A	584	876

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	805	201	481	1352	0.595	799	492	0.0	1.4	6.443	A

B - Chaffron Way (E)	898	224	810	1309	0.686	889	470	0.0	2.1	8.417	A
C - Fulmer Street (S)	489	122	966	952	0.514	485	733	0.0	1.0	7.639	A
D - Chaffron Way (W)	479	120	495	1805	0.266	478	956	0.0	0.4	2.710	A

## 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	961	240	575	1297	0.741	955	587	1.4	2.7	10.391	B
B - Chaffron Way (E)	1072	268	968	1205	0.890	1054	562	2.1	6.6	21.696	C
C - Fulmer Street (S)	584	146	1148	836	0.698	579	874	1.0	2.2	13.754	B
D - Chaffron Way (W)	572	143	590	1744	0.328	572	1138	0.4	0.5	3.068	A

## 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	1177	294	700	1224	0.961	1139	688	2.7	12.1	33.320	D
B - Chaffron Way (E)	1313	328	1158	1081	1.215	1074	682	6.6	66.4	133.564	F
C - Fulmer Street (S)	715	179	1230	785	0.912	696	1001	2.2	7.1	34.613	D
D - Chaffron Way (W)	701	175	687	1682	0.417	700	1238	0.5	0.7	3.661	A

## 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	1177	294	704	1222	0.963	1164	696	12.1	15.2	48.874	E
B - Chaffron Way (E)	1313	328	1181	1066	1.232	1065	687	66.4	128.4	328.627	F
C - Fulmer Street (S)	715	179	1233	783	0.913	711	1013	7.1	8.3	44.711	E
D - Chaffron Way (W)	701	175	699	1675	0.418	701	1244	0.7	0.7	3.694	A

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	961	240	582	1293	0.743	1009	613	15.2	3.0	14.701	B
B - Chaffron Way (E)	1072	268	1018	1173	0.914	1163	573	128.4	105.6	356.183	F
C - Fulmer Street (S)	584	146	1250	771	0.757	604	931	8.3	3.4	23.462	C
D - Chaffron Way (W)	572	143	622	1724	0.332	573	1232	0.7	0.5	3.132	A

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	805	201	487	1348	0.597	811	539	3.0	1.5	6.773	A
B - Chaffron Way (E)	898	224	821	1302	0.690	1290	477	105.6	7.7	162.758	F
C - Fulmer Street (S)	489	122	1274	756	0.647	495	836	3.4	1.9	14.075	B
D - Chaffron Way (W)	479	120	546	1772	0.271	480	1223	0.5	0.4	2.786	A



# 2033 Base + CD + D with TP, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	B - Chaffron Way (E) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	C - Fulmer Street (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Chaffron Way (W) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	136.57	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
ü	ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street (N)		ONE HOUR	ü	1069	100.000
B - Chaffron Way (E)		ONE HOUR	ü	1184	100.000
C - Fulmer Street (S)		ONE HOUR	ü	645	100.000
D - Chaffron Way (W)		ONE HOUR	ü	637	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	6	89	597	377
	B - Chaffron Way (E)	121	8	278	776
	C - Fulmer Street (S)	390	128	5	122
	D - Chaffron Way (W)	141	398	93	6

## Vehicle Mix

### Heavy Vehicle Percentages

		To			

		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	1	0	0
	B - Chaffron Way (E)	2	0	1	1
	C - Fulmer Street (S)	0	0	0	0
	D - Chaffron Way (W)	3	2	1	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street (N)	0.96	47.60	14.7	E	981	1471
B - Chaffron Way (E)	1.22	338.58	123.5	F	1086	1629
C - Fulmer Street (S)	0.91	44.01	8.1	E	592	887
D - Chaffron Way (W)	0.42	3.68	0.7	A	584	876

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	805	201	477	1354	0.594	799	492	0.0	1.4	6.420	A
B - Chaffron Way (E)	891	223	810	1309	0.681	883	466	0.0	2.1	8.293	A
C - Fulmer Street (S)	485	121	966	952	0.510	481	726	0.0	1.0	7.581	A
D - Chaffron Way (W)	479	120	491	1808	0.265	478	957	0.0	0.4	2.705	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	961	240	571	1299	0.739	956	587	1.4	2.7	10.318	B
B - Chaffron Way (E)	1064	266	968	1205	0.883	1047	558	2.1	6.3	20.903	C
C - Fulmer Street (S)	579	145	1149	836	0.693	575	867	1.0	2.2	13.560	B
D - Chaffron Way (W)	572	143	586	1747	0.328	572	1138	0.4	0.5	3.061	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	1177	294	695	1227	0.959	1140	689	2.7	11.8	32.753	D
B - Chaffron Way (E)	1303	326	1158	1080	1.206	1073	676	6.3	63.9	129.071	F
C - Fulmer Street (S)	710	177	1236	781	0.909	690	995	2.2	7.0	34.189	D
D - Chaffron Way (W)	701	175	683	1685	0.416	700	1243	0.5	0.7	3.651	A

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	1177	294	698	1225	0.961	1165	697	11.8	14.7	47.597	E
B - Chaffron Way (E)	1303	326	1181	1066	1.223	1065	682	63.9	123.5	316.922	F
C - Fulmer Street (S)	710	177	1239	779	0.911	705	1007	7.0	8.1	44.012	E
D - Chaffron Way (W)	701	175	694	1678	0.418	701	1250	0.7	0.7	3.683	A

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	961	240	578	1295	0.742	1008	614	14.7	3.0	14.386	B
B - Chaffron Way (E)	1064	266	1017	1173	0.907	1164	569	123.5	98.5	338.576	F
C - Fulmer Street (S)	579	145	1257	767	0.755	599	924	8.1	3.3	23.268	C

D - Chaffron Way (W)	572	143	618	1727	0.332	573	1238	0.7	0.5	3.123	A
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## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	805	201	483	1350	0.596	811	538	3.0	1.5	6.741	A
B - Chaffron Way (E)	891	223	821	1302	0.685	1274	473	98.5	2.9	142.117	F
C - Fulmer Street (S)	485	121	1270	759	0.639	491	825	3.3	1.8	13.730	B
D - Chaffron Way (W)	479	120	542	1775	0.270	480	1219	0.5	0.4	2.782	A

# 2033 Base + CD + D - ST, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	B - Chaffron Way (E) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	C - Fulmer Street (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Chaffron Way (W) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	144.63	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	Ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
Ü	Ü	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street (N)		ONE HOUR	Ü	1070	100.000
B - Chaffron Way (E)		ONE HOUR	Ü	1193	100.000
C - Fulmer Street (S)		ONE HOUR	Ü	655	100.000
D - Chaffron Way (W)		ONE HOUR	Ü	637	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	6	89	598	377
	B - Chaffron Way (E)	121	8	287	776
	C - Fulmer Street (S)	396	133	5	122
	D - Chaffron Way (W)	141	398	93	6

## Vehicle Mix

### Heavy Vehicle Percentages

		To			

		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	1	0	0
	B - Chaffron Way (E)	2	0	1	1
	C - Fulmer Street (S)	0	0	0	0
	D - Chaffron Way (W)	3	2	1	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street (N)	0.96	49.55	15.4	E	982	1473
B - Chaffron Way (E)	1.23	358.43	128.8	F	1094	1642
C - Fulmer Street (S)	0.92	47.35	8.9	E	601	902
D - Chaffron Way (W)	0.42	3.71	0.7	A	584	876

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	806	201	481	1352	0.596	800	496	0.0	1.4	6.457	A
B - Chaffron Way (E)	898	224	811	1308	0.686	889	470	0.0	2.1	8.431	A
C - Fulmer Street (S)	493	123	966	952	0.518	489	734	0.0	1.1	7.707	A
D - Chaffron Way (W)	479	120	499	1802	0.266	478	956	0.0	0.4	2.715	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	962	241	575	1297	0.742	957	592	1.4	2.8	10.430	B
B - Chaffron Way (E)	1072	268	970	1204	0.890	1054	562	2.1	6.6	21.790	C
C - Fulmer Street (S)	589	147	1148	837	0.704	584	876	1.1	2.3	14.015	B
D - Chaffron Way (W)	572	143	595	1741	0.329	572	1138	0.4	0.5	3.076	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	1178	295	700	1224	0.963	1141	693	2.8	12.2	33.608	D
B - Chaffron Way (E)	1313	328	1159	1080	1.216	1073	681	6.6	66.7	134.077	F
C - Fulmer Street (S)	722	180	1230	785	0.919	701	1002	2.3	7.5	36.002	E
D - Chaffron Way (W)	701	175	693	1679	0.418	700	1237	0.5	0.7	3.674	A

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	1178	295	704	1222	0.964	1165	702	12.2	15.4	49.550	E
B - Chaffron Way (E)	1313	328	1182	1065	1.233	1064	687	66.7	128.8	329.996	F
C - Fulmer Street (S)	722	180	1232	784	0.921	716	1015	7.5	8.9	47.352	E
D - Chaffron Way (W)	701	175	705	1671	0.419	701	1244	0.7	0.7	3.708	A

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	962	241	583	1293	0.744	1012	619	15.4	3.1	14.890	B
B - Chaffron Way (E)	1072	268	1020	1171	0.916	1162	574	128.8	106.4	358.426	F
C - Fulmer Street (S)	589	147	1250	772	0.763	611	933	8.9	3.5	24.629	C

D - Chaffron Way (W)	572	143	628	1720	0.333	573	1232	0.7	0.5	3.143	A
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## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street (N)	806	201	487	1348	0.598	812	543	3.1	1.5	6.790	A
B - Chaffron Way (E)	898	224	822	1301	0.690	1289	477	106.4	8.7	165.272	F
C - Fulmer Street (S)	493	123	1274	756	0.652	500	837	3.5	2.0	14.341	B
D - Chaffron Way (W)	479	120	551	1769	0.271	480	1223	0.5	0.4	2.792	A

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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**Filename:** J15 - Bleak Hall Roundabout\_V3.0\_AM Avoiding Bridge.j9

**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J15

**Report generation date:** 28/01/2021 17:26:18

- »2033 Base + CD + D, AM
- »2033 Base + CD + D with TP, AM
- »2033 Base + CD + D - ST, AM

### File summary

#### File Description

<b>Title</b>	Bleak Hall Roundabout
<b>Location</b>	52° 1'0.36"N, 0°44'42.06"W
<b>Site number</b>	15
<b>Date</b>	07/01/2021
<b>Version</b>	
<b>Status</b>	
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	Will Forster
<b>Description</b>	

### Units

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

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	✓
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D11	2026 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓

### Analysis Set Details

ID	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D15,D17,D19	100.000	100.000



# 2033 Base + CD + D, AM

## Data Errors and Warnings

*No errors or warnings*

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	326.66	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Grafton Street (N)	
B	Standing Way (E)	
C	Grafton Street (S)	
D	Standing Way (W)	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Grafton Street (N)	7.30	10.76	23.4	34.0	59.5	16.5	
B - Standing Way (E)	6.70	9.30	12.5	40.5	59.5	14.5	
C - Grafton Street (S)	7.10	11.20	15.0	29.0	59.8	16.0	
D - Standing Way (W)	7.30	10.88	11.8	43.2	59.8	12.5	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Grafton Street (N)	Direct	Calibrated using video survey	-903
B - Standing Way (E)	Direct	Calibrated against queue length	-383
C - Grafton Street (S)	Direct	Calibrated against queue length	-178
D - Standing Way (W)	Direct	Calibrated using video survey	-322

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Grafton Street (N)	0.825	2216
B - Standing Way (E)	0.755	2317
C - Grafton Street (S)	0.799	2815
D - Standing Way (W)	0.807	2681

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	



A - Grafton Street (N)	933	233	1382	966	0.966	896	1283	2.1	11.5	39.068	E
B - Standing Way (E)	1384	346	916	1507	0.919	1360	1362	2.5	8.7	21.609	C
C - Grafton Street (S)	1250	312	1475	1518	0.824	1239	801	1.6	4.3	12.447	B
D - Standing Way (W)	1493	373	1205	1591	0.938	1461	1510	2.5	10.5	23.459	C

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1143	286	1411	943	1.212	938	1410	11.5	62.7	154.155	F
B - Standing Way (E)	1696	424	951	1481	1.145	1471	1399	8.7	64.9	99.688	F
C - Grafton Street (S)	1531	383	1588	1426	1.073	1400	833	4.3	37.1	64.145	F
D - Standing Way (W)	1828	457	1350	1475	1.239	1470	1637	10.5	99.9	143.530	F

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1143	286	1407	946	1.209	945	1420	62.7	112.2	341.583	F
B - Standing Way (E)	1696	424	955	1478	1.147	1477	1398	64.9	119.6	231.326	F
C - Grafton Street (S)	1531	383	1595	1421	1.077	1416	836	37.1	65.9	139.572	F
D - Standing Way (W)	1828	457	1364	1464	1.249	1464	1646	99.9	191.0	362.536	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	933	233	1411	943	0.990	933	1414	112.2	112.1	441.541	F
B - Standing Way (E)	1384	346	947	1484	0.933	1472	1398	119.6	97.9	265.988	F
C - Grafton Street (S)	1250	312	1588	1427	0.876	1405	831	65.9	27.0	122.345	F
D - Standing Way (W)	1493	373	1355	1471	1.014	1470	1638	191.0	196.7	465.514	F

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	782	195	1511	860	0.908	853	1264	112.1	94.3	436.483	F
B - Standing Way (E)	1159	290	908	1512	0.767	1497	1455	97.9	13.4	138.045	F
C - Grafton Street (S)	1047	262	1592	1424	0.735	1143	814	27.0	2.9	17.349	C
D - Standing Way (W)	1250	313	1146	1637	0.763	1629	1589	196.7	102.0	331.278	F

# 2033 Base + CD + D with TP, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	295.69	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Grafton Street (N)		ONE HOUR	✓	1033	100.000
B - Standing Way (E)		ONE HOUR	✓	1525	100.000
C - Grafton Street (S)		ONE HOUR	✓	1389	100.000
D - Standing Way (W)		ONE HOUR	✓	1617	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	22	234	549	228
	B - Standing Way (E)	212	2	122	1189
	C - Grafton Street (S)	939	178	1	271
	D - Standing Way (W)	264	1104	246	3

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	21	6	5	5
	B - Standing Way (E)	5	0	6	5
	C - Grafton Street (S)	3	4	0	6
	D - Standing Way (W)	4	5	8	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Grafton Street (N)	1.20	412.22	106.7	F	948	1422
B - Standing Way (E)	1.14	247.14	112.4	F	1399	2099
C - Grafton Street (S)	1.07	133.47	62.9	F	1275	1912
D - Standing Way (W)	1.22	404.34	168.3	F	1484	2226

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	778	194	1147	1160	0.671	770	1075	0.0	2.0	9.064	A
B - Standing Way (E)	1148	287	783	1608	0.714	1138	1134	0.0	2.4	7.519	A
C - Grafton Street (S)	1046	261	1236	1712	0.611	1040	685	0.0	1.5	5.308	A
D - Standing Way (W)	1218	304	1013	1743	0.698	1209	1263	0.0	2.3	6.625	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	929	232	1358	986	0.942	899	1277	2.0	9.5	33.537	D
B - Standing Way (E)	1371	343	917	1506	0.910	1349	1340	2.4	8.0	20.406	C
C - Grafton Street (S)	1249	312	1461	1529	0.817	1239	804	1.5	4.2	11.980	B
D - Standing Way (W)	1454	364	1206	1590	0.914	1429	1494	2.3	8.4	19.948	C

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1138	284	1408	945	1.203	940	1412	9.5	59.0	143.219	F
B - Standing Way (E)	1679	420	954	1479	1.136	1467	1394	8.0	61.0	94.642	F
C - Grafton Street (S)	1530	382	1580	1432	1.068	1404	840	4.2	35.6	61.818	F
D - Standing Way (W)	1781	445	1356	1470	1.211	1464	1628	8.4	87.7	126.981	F

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1138	284	1405	947	1.201	947	1424	59.0	106.7	323.259	F
B - Standing Way (E)	1679	420	958	1475	1.138	1474	1394	61.0	112.4	218.560	F
C - Grafton Street (S)	1530	382	1588	1426	1.073	1421	844	35.6	62.9	133.470	F
D - Standing Way (W)	1781	445	1371	1459	1.221	1458	1638	87.7	168.3	321.269	F

#### 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	929	232	1402	950	0.978	941	1415	106.7	103.6	412.220	F
B - Standing Way (E)	1371	343	954	1479	0.927	1466	1390	112.4	88.8	247.138	F
C - Grafton Street (S)	1249	312	1579	1433	0.871	1411	840	62.9	22.4	112.624	F
D - Standing Way (W)	1454	364	1362	1466	0.992	1456	1629	168.3	167.8	404.345	F

#### 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

<b>A - Grafton Street (N)</b>	778	194	1518	854	0.911	846	1252	103.6	86.6	405.561	F
<b>B - Standing Way (E)</b>	1148	287	908	1513	0.759	1486	1456	88.8	4.4	114.560	F
<b>C - Grafton Street (S)</b>	1046	261	1575	1437	0.728	1124	818	22.4	2.8	14.418	B
<b>D - Standing Way (W)</b>	1218	304	1132	1648	0.739	1639	1568	167.8	62.6	255.041	F

# 2033 Base + CD + D - ST, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	353.58	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Grafton Street (N)		ONE HOUR	✓	1038	100.000
B - Standing Way (E)		ONE HOUR	✓	1540	100.000
C - Grafton Street (S)		ONE HOUR	✓	1406	100.000
D - Standing Way (W)		ONE HOUR	✓	1691	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	22	234	549	233
	B - Standing Way (E)	212	2	122	1204
	C - Grafton Street (S)	939	178	1	288
	D - Standing Way (W)	273	1136	279	3

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	21	6	5	5
	B - Standing Way (E)	5	0	6	5
	C - Grafton Street (S)	3	4	0	6
	D - Standing Way (W)	4	5	8	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Grafton Street (N)	1.22	467.00	117.6	F	953	1429
B - Standing Way (E)	1.16	292.58	127.3	F	1413	2120
C - Grafton Street (S)	1.08	143.92	68.8	F	1290	1936
D - Standing Way (W)	1.27	511.31	219.7	F	1552	2328

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	782	195	1195	1120	0.698	773	1081	0.0	2.2	10.121	B
B - Standing Way (E)	1159	290	810	1587	0.731	1149	1157	0.0	2.6	8.039	A
C - Grafton Street (S)	1059	265	1250	1700	0.623	1052	709	0.0	1.6	5.502	A
D - Standing Way (W)	1273	318	1013	1743	0.731	1263	1290	0.0	2.6	7.348	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	933	233	1404	948	0.984	889	1281	2.2	13.3	44.049	E
B - Standing Way (E)	1384	346	937	1491	0.929	1357	1356	2.6	9.4	23.305	C
C - Grafton Street (S)	1264	316	1471	1521	0.831	1253	823	1.6	4.5	12.895	B
D - Standing Way (W)	1521	380	1204	1591	0.956	1481	1520	2.6	12.4	26.596	D

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1143	286	1419	936	1.221	932	1402	13.3	66.0	164.868	F
B - Standing Way (E)	1696	424	969	1466	1.156	1458	1381	9.4	69.0	106.440	F
C - Grafton Street (S)	1548	387	1574	1437	1.077	1412	853	4.5	38.7	65.839	F
D - Standing Way (W)	1862	466	1345	1478	1.260	1475	1641	12.4	109.3	156.754	F

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1143	286	1414	939	1.217	939	1412	66.0	117.1	359.501	F
B - Standing Way (E)	1696	424	973	1463	1.159	1462	1380	69.0	127.3	247.925	F
C - Grafton Street (S)	1548	387	1580	1432	1.081	1428	856	38.7	68.8	143.922	F
D - Standing Way (W)	1862	466	1359	1468	1.269	1468	1649	109.3	208.0	393.772	F

#### 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	933	233	1419	936	0.997	931	1405	117.1	117.6	466.997	F
B - Standing Way (E)	1384	346	969	1467	0.944	1456	1381	127.3	109.6	292.577	F
C - Grafton Street (S)	1264	316	1572	1439	0.879	1418	852	68.8	30.3	128.854	F
D - Standing Way (W)	1521	380	1350	1475	1.031	1474	1640	208.0	219.7	511.315	F

#### 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service



<b>A - Grafton Street (N)</b>	782	195	1512	858	0.911	851	1264	117.6	100.2	461.139	F
<b>B - Standing Way (E)</b>	1159	290	931	1495	0.776	1481	1432	109.6	29.2	171.732	F
<b>C - Grafton Street (S)</b>	1059	265	1576	1436	0.737	1168	836	30.3	3.0	19.190	C
<b>D - Standing Way (W)</b>	1273	318	1153	1631	0.781	1624	1591	219.7	132.2	391.091	F

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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**Filename:** J15 - Bleak Hall Roundabout\_V3.0\_PM Avoiding Bridge.j9

**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J15

**Report generation date:** 28/01/2021 17:27:51

- »2033 Base + CD + D, PM
- »2033 Base + CD + D with TP, PM
- »2033 Base + CD + D - ST, PM

### File summary

#### File Description

<b>Title</b>	Bleak Hall Roundabout
<b>Location</b>	52° 1'0.36"N, 0°44'42.06"W
<b>Site number</b>	15
<b>Date</b>	07/01/2021
<b>Version</b>	
<b>Status</b>	
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	Will Forster
<b>Description</b>	

### Units

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

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	✓
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D12	2026 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓

### Analysis Set Details

ID	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D16,D18,D20	100.000	100.000

# 2033 Base + CD + D, PM

## Data Errors and Warnings

*No errors or warnings*

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	339.20	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Grafton Street (N)	
B	Standing Way (E)	
C	Grafton Street (S)	
D	Standing Way (W)	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Grafton Street (N)	7.30	10.76	23.4	34.0	59.5	16.5	
B - Standing Way (E)	6.70	9.30	12.5	40.5	59.5	14.5	
C - Grafton Street (S)	7.10	11.20	15.0	29.0	59.8	16.0	
D - Standing Way (W)	7.30	10.88	11.8	43.2	59.8	12.5	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Grafton Street (N)	Direct	Calibrated against queue length	-718
B - Standing Way (E)	Direct	Calibrated using viedo survey	-358
C - Grafton Street (S)	Direct	Calibrated against queue length	-625
D - Standing Way (W)	Direct	Calibrated against queue length	-506

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Grafton Street (N)	0.825	2401
B - Standing Way (E)	0.755	2342
C - Grafton Street (S)	0.799	2368
D - Standing Way (W)	0.807	2497

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	



A - Grafton Street (N)	1051	263	1549	1080	0.973	1008	792	2.1	12.7	37.770	E
B - Standing Way (E)	1391	348	1123	1439	0.967	1349	1434	2.9	13.5	31.051	D
C - Grafton Street (S)	980	245	1460	1157	0.847	967	1011	1.6	4.9	17.804	C
D - Standing Way (W)	1671	418	688	1883	0.887	1653	1739	2.4	6.9	14.609	B

## 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1287	322	1700	952	1.352	950	869	12.7	96.9	218.250	F
B - Standing Way (E)	1704	426	1092	1461	1.167	1454	1558	13.5	75.9	119.915	F
C - Grafton Street (S)	1200	300	1543	1089	1.102	1071	1004	4.9	37.2	83.270	F
D - Standing Way (W)	2046	512	756	1828	1.119	1813	1858	6.9	65.1	80.196	F

## 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1287	322	1709	945	1.362	945	876	96.9	182.5	537.383	F
B - Standing Way (E)	1704	426	1089	1463	1.165	1462	1565	75.9	136.4	267.742	F
C - Grafton Street (S)	1200	300	1549	1084	1.107	1081	1002	37.2	67.0	182.864	F
D - Standing Way (W)	2046	512	763	1823	1.122	1821	1867	65.1	121.3	190.249	F

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1051	263	1699	953	1.102	953	871	182.5	206.9	720.321	F
B - Standing Way (E)	1391	348	1095	1459	0.954	1448	1557	136.4	122.2	323.059	F
C - Grafton Street (S)	980	245	1538	1093	0.896	1077	1005	67.0	42.7	185.021	F
D - Standing Way (W)	1671	418	760	1826	0.915	1811	1856	121.3	86.3	206.805	F

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	880	220	1618	1022	0.861	1017	813	206.9	172.7	672.283	F
B - Standing Way (E)	1165	291	1141	1425	0.818	1414	1494	122.2	60.2	234.101	F
C - Grafton Street (S)	821	205	1521	1108	0.741	979	1033	42.7	3.2	53.016	F
D - Standing Way (W)	1399	350	699	1874	0.747	1731	1800	86.3	3.2	66.704	F

# 2033 Base + CD + D with TP, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	295.19	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Grafton Street (N)		ONE HOUR	✓	1157	100.000
B - Standing Way (E)		ONE HOUR	✓	1509	100.000
C - Grafton Street (S)		ONE HOUR	✓	1087	100.000
D - Standing Way (W)		ONE HOUR	✓	1826	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	18	128	774	236
	B - Standing Way (E)	105	1	140	1263
	C - Grafton Street (S)	502	149	2	434
	D - Standing Way (W)	262	1316	245	3

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	0	2	1	0
	B - Standing Way (E)	6	0	1	3
	C - Grafton Street (S)	0	2	0	1
	D - Standing Way (W)	1	3	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Grafton Street (N)	1.34	658.14	192.8	F	1062	1592
B - Standing Way (E)	1.14	258.81	113.9	F	1385	2077
C - Grafton Street (S)	1.09	164.72	60.2	F	998	1496
D - Standing Way (W)	1.11	176.47	107.8	F	1676	2514

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	871	218	1284	1304	0.668	863	663	0.0	2.0	8.038	A
B - Standing Way (E)	1136	284	955	1564	0.726	1126	1192	0.0	2.6	8.042	A
C - Grafton Street (S)	818	205	1214	1358	0.603	813	867	0.0	1.5	6.534	A
D - Standing Way (W)	1375	344	581	1968	0.699	1366	1445	0.0	2.3	5.892	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1040	260	1529	1097	0.948	1007	788	2.0	10.3	32.179	D
B - Standing Way (E)	1356	339	1119	1442	0.941	1325	1417	2.6	10.4	25.765	D
C - Grafton Street (S)	977	244	1427	1185	0.825	966	1017	1.5	4.3	15.741	C
D - Standing Way (W)	1642	410	690	1882	0.873	1626	1703	2.3	6.1	13.363	B

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1274	318	1695	956	1.332	954	873	10.3	90.3	200.700	F
B - Standing Way (E)	1661	415	1095	1458	1.139	1449	1553	10.4	63.5	101.743	F
C - Grafton Street (S)	1197	299	1528	1102	1.087	1080	1016	4.3	33.6	75.743	F
D - Standing Way (W)	2011	503	766	1821	1.104	1803	1842	6.1	58.2	73.256	F

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1274	318	1706	948	1.344	947	880	90.3	171.9	503.478	F
B - Standing Way (E)	1661	415	1091	1461	1.137	1460	1562	63.5	113.9	225.604	F
C - Grafton Street (S)	1197	299	1537	1095	1.094	1090	1015	33.6	60.2	164.722	F
D - Standing Way (W)	2011	503	773	1815	1.108	1813	1854	58.2	107.8	171.202	F

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1040	260	1695	957	1.087	956	876	171.9	192.8	658.140	F
B - Standing Way (E)	1356	339	1098	1457	0.931	1444	1554	113.9	92.0	258.813	F
C - Grafton Street (S)	977	244	1524	1105	0.885	1087	1018	60.2	32.9	156.785	F
D - Standing Way (W)	1642	410	770	1818	0.903	1801	1841	107.8	68.0	176.471	F

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service



<b>A - Grafton Street (N)</b>	871	218	1533	1094	0.796	1088	781	192.8	138.6	549.190	F
<b>B - Standing Way (E)</b>	1136	284	1192	1388	0.818	1373	1429	92.0	32.7	166.456	F
<b>C - Grafton Street (S)</b>	818	205	1488	1135	0.721	939	1077	32.9	2.8	29.894	D
<b>D - Standing Way (W)</b>	1375	344	678	1891	0.727	1636	1749	68.0	2.8	33.896	D

# 2033 Base + CD + D - ST, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	354.87	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Grafton Street (N)		ONE HOUR	✓	1169	100.000
B - Standing Way (E)		ONE HOUR	✓	1548	100.000
C - Grafton Street (S)		ONE HOUR	✓	1113	100.000
D - Standing Way (W)		ONE HOUR	✓	1870	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	18	128	774	248
	B - Standing Way (E)	105	1	140	1302
	C - Grafton Street (S)	502	149	2	460
	D - Standing Way (W)	269	1339	259	3

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	0	2	1	0
	B - Standing Way (E)	6	0	1	3
	C - Grafton Street (S)	0	2	0	1
	D - Standing Way (W)	1	3	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Grafton Street (N)	1.37	744.95	211.9	F	1073	1609
B - Standing Way (E)	1.17	332.53	139.4	F	1420	2130
C - Grafton Street (S)	1.13	221.67	76.8	F	1021	1532
D - Standing Way (W)	1.12	212.55	124.2	F	1716	2575

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	880	220	1311	1281	0.687	871	668	0.0	2.1	8.629	A
B - Standing Way (E)	1165	291	974	1549	0.752	1154	1209	0.0	2.9	8.853	A
C - Grafton Street (S)	838	210	1251	1328	0.631	831	877	0.0	1.7	7.160	A
D - Standing Way (W)	1408	352	581	1968	0.715	1398	1501	0.0	2.5	6.214	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1051	263	1558	1072	0.980	1005	791	2.1	13.5	39.731	E
B - Standing Way (E)	1391	348	1130	1433	0.971	1347	1433	2.9	14.0	32.053	D
C - Grafton Street (S)	1001	250	1458	1159	0.863	986	1020	1.7	5.4	19.261	C
D - Standing Way (W)	1682	420	687	1884	0.893	1663	1757	2.5	7.2	15.121	C

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1287	322	1707	947	1.360	945	862	13.5	99.1	225.160	F
B - Standing Way (E)	1704	426	1099	1455	1.171	1450	1552	14.0	77.6	122.987	F
C - Grafton Street (S)	1226	306	1538	1094	1.120	1079	1011	5.4	42.1	91.629	F
D - Standing Way (W)	2059	515	747	1835	1.122	1821	1869	7.2	66.8	81.776	F

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1287	322	1715	939	1.370	939	867	99.1	186.1	551.527	F
B - Standing Way (E)	1704	426	1095	1458	1.169	1457	1559	77.6	139.4	274.297	F
C - Grafton Street (S)	1226	306	1543	1089	1.125	1087	1009	42.1	76.8	205.818	F
D - Standing Way (W)	2059	515	753	1831	1.125	1830	1878	66.8	124.2	193.825	F

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Grafton Street (N)	1051	263	1706	948	1.109	947	863	186.1	211.9	744.950	F
B - Standing Way (E)	1391	348	1101	1454	0.957	1443	1552	139.4	126.3	332.532	F
C - Grafton Street (S)	1001	250	1533	1098	0.911	1084	1012	76.8	56.0	221.674	F
D - Standing Way (W)	1682	420	750	1833	0.917	1819	1867	124.2	89.9	212.546	F

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

<b>A - Grafton Street (N)</b>	880	220	1644	999	0.881	995	836	211.9	183.3	715.724	F
<b>B - Standing Way (E)</b>	1165	291	1134	1430	0.815	1419	1505	126.3	62.9	241.902	F
<b>C - Grafton Street (S)</b>	838	210	1521	1108	0.756	1047	1032	56.0	3.7	91.634	F
<b>D - Standing Way (W)</b>	1408	352	727	1851	0.761	1753	1841	89.9	3.6	79.971	F

<b>Junctions 9</b>
<b>ARCADY 9 - Roundabout Module</b>
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**Filename:** J16 - Elfield Park Roundabout\_V3.0\_AM.j9

**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J16

**Report generation date:** 26/01/2021 09:19:27

- »2033 Base + CD + D, AM
- »2033 Base + CD + D with TP, AM
- »2033 Base + CD + D - ST, AM

### Summary of junction performance

		AM			
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2033 Base + CD + D</b>					
A - Watling Street (W)	D15	6.9	48.47	0.90	E
B - Standing Way (N)		140.5	290.58	1.17	F
C - Watling Street (E)		68.3	151.08	1.09	F
D - Standing Way (S)		243.6	499.37	1.26	F
<b>2033 Base + CD + D with TP</b>					
A - Watling Street (W)	D17	6.6	46.61	0.89	E
B - Standing Way (N)		131.8	268.50	1.16	F
C - Watling Street (E)		65.4	144.78	1.08	F
D - Standing Way (S)		209.8	438.38	1.24	F
<b>2033 Base + CD + D - ST</b>					
A - Watling Street (W)	D19	8.4	57.35	0.92	F
B - Standing Way (N)		147.5	309.47	1.18	F
C - Watling Street (E)		70.0	155.02	1.09	F
D - Standing Way (S)		259.7	529.51	1.27	F

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

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

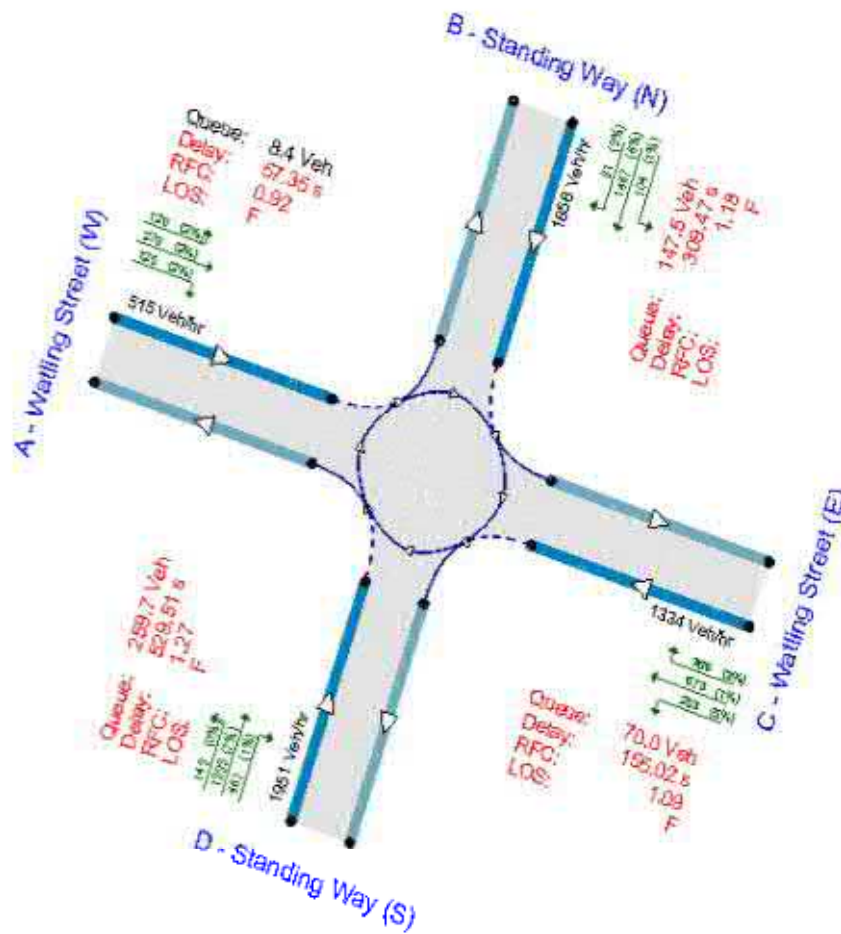
### File summary

#### File Description

<b>Title</b>	Elfield Park Roundabout
<b>Location</b>	52° 0'45.10"N, 0°45'3.92"W
<b>Site number</b>	16
<b>Date</b>	08/01/2021
<b>Version</b>	
<b>Status</b>	
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	Will Forster
<b>Description</b>	

### Units

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



The junction diagram reflects the last run of Junctions.

**Analysis Options**

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

**Demand Set Summary**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	✓
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D11	2026 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓

**Analysis Set Details**

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D15,D17,D19	100.000	100.000

# 2033 Base + CD + D, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	310.14	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Watling Street (W)	
B	Standing Way (N)	
C	Watling Street (E)	
D	Standing Way (S)	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Watling Street (W)	4.50	10.00	16.6	49.4	60.9	23.0	
B - Standing Way (N)	7.30	10.50	11.2	24.2	60.9	19.5	
C - Watling Street (E)	6.60	10.50	17.2	48.9	60.9	6.5	
D - Standing Way (S)	7.50	10.50	47.5	23.8	60.9	28.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Watling Street (W)	Direct	Calibrated against queue length	-282
B - Standing Way (N)	Direct	Calibrated against queue length	-533
C - Watling Street (E)	Direct	Calibrated against queue length	-258
D - Standing Way (S)	Direct	Calibrated against queue length	-365

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Watling Street (W)	0.667	2006
B - Standing Way (N)	0.760	2308
C - Watling Street (E)	0.801	2722
D - Standing Way (S)	0.792	2708

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Watling Street (W)		ONE HOUR	✓	499	100.000
B - Standing Way (N)		ONE HOUR	✓	1640	100.000
C - Watling Street (E)		ONE HOUR	✓	1334	100.000
D - Standing Way (S)		ONE HOUR	✓	1936	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	104	270	125
	B - Standing Way (N)	73	3	104	1459
	C - Watling Street (E)	673	368	39	253
	D - Standing Way (S)	143	1318	467	8

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	2	2	2
	B - Standing Way (N)	3	0	1	6
	C - Watling Street (E)	1	3	3	5
	D - Standing Way (S)	0	7	1	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Watling Street (W)	0.90	48.47	6.9	E	458	687
B - Standing Way (N)	1.17	290.58	140.5	F	1505	2258
C - Watling Street (E)	1.09	151.08	68.3	F	1224	1836
D - Standing Way (S)	1.26	499.37	243.6	F	1777	2665

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	376	94	1646	842	0.446	372	666	0.0	0.8	7.616	A
B - Standing Way (N)	1235	309	678	1696	0.728	1224	1340	0.0	2.6	7.480	A
C - Watling Street (E)	1004	251	1246	1636	0.614	998	657	0.0	1.6	5.593	A
D - Standing Way (S)	1458	364	866	1920	0.759	1446	1378	0.0	3.0	7.406	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	449	112	1933	646	0.695	443	790	0.8	2.1	17.339	C
B - Standing Way (N)	1475	369	800	1607	0.918	1450	1576	2.6	8.7	20.421	C
C - Watling Street (E)	1199	300	1476	1446	0.829	1188	774	1.6	4.5	13.375	B
D - Standing Way (S)	1741	435	1030	1794	0.970	1693	1634	3.0	15.1	27.541	D

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	549	137	1981	613	0.896	534	868	2.1	6.1	39.180	E
B - Standing Way (N)	1806	451	877	1550	1.165	1542	1638	8.7	74.8	106.573	F
C - Watling Street (E)	1469	367	1584	1357	1.082	1333	834	4.5	38.3	68.886	F
D - Standing Way (S)	2132	533	1152	1700	1.254	1697	1765	15.1	123.9	154.716	F



## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	549	137	1980	614	0.894	546	875	6.1	6.9	48.467	E
B - Standing Way (N)	1806	451	886	1544	1.170	1543	1640	74.8	140.5	255.652	F
C - Watling Street (E)	1469	367	1589	1353	1.085	1349	840	38.3	68.3	151.083	F
D - Standing Way (S)	2132	533	1165	1690	1.262	1690	1773	123.9	234.4	385.182	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	449	112	1985	610	0.735	464	865	6.9	3.0	26.676	D
B - Standing Way (N)	1475	369	824	1590	0.928	1578	1625	140.5	114.6	290.581	F
C - Watling Street (E)	1199	300	1601	1342	0.893	1323	801	68.3	37.3	146.010	F
D - Standing Way (S)	1741	435	1146	1705	1.021	1704	1779	234.4	243.6	499.370	F

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	376	94	2028	580	0.647	380	782	3.0	1.9	18.358	C
B - Standing Way (N)	1235	309	778	1623	0.761	1609	1630	114.6	20.9	154.995	F
C - Watling Street (E)	1004	251	1610	1335	0.752	1140	777	37.3	3.3	30.986	D
D - Standing Way (S)	1458	364	999	1817	0.802	1810	1751	243.6	155.5	397.677	F

# 2033 Base + CD + D with TP, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	278.39	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Watling Street (W)		ONE HOUR	✓	499	100.000
B - Standing Way (N)		ONE HOUR	✓	1619	100.000
C - Watling Street (E)		ONE HOUR	✓	1334	100.000
D - Standing Way (S)		ONE HOUR	✓	1892	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	104	270	125
	B - Standing Way (N)	73	3	104	1438
	C - Watling Street (E)	673	368	39	253
	D - Standing Way (S)	143	1274	467	8

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	2	2	2
	B - Standing Way (N)	3	0	1	6
	C - Watling Street (E)	1	3	3	5
	D - Standing Way (S)	0	7	1	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
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A - Watling Street (W)	0.89	46.61	6.6	E	458	687
B - Standing Way (N)	1.16	268.50	131.8	F	1486	2229
C - Watling Street (E)	1.08	144.78	65.4	F	1224	1836
D - Standing Way (S)	1.24	438.38	209.8	F	1736	2605

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	376	94	1614	865	0.434	373	666	0.0	0.8	7.276	A
B - Standing Way (N)	1219	305	679	1696	0.719	1209	1308	0.0	2.5	7.257	A
C - Watling Street (E)	1004	251	1231	1648	0.609	998	657	0.0	1.5	5.487	A
D - Standing Way (S)	1425	356	866	1921	0.742	1413	1363	0.0	2.8	6.948	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	449	112	1904	666	0.674	444	791	0.8	2.0	15.899	C
B - Standing Way (N)	1456	364	803	1604	0.907	1434	1545	2.5	7.9	19.057	C
C - Watling Street (E)	1199	300	1460	1459	0.822	1188	778	1.5	4.3	12.796	B
D - Standing Way (S)	1701	425	1031	1794	0.948	1665	1617	2.8	11.9	23.190	C

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	549	137	1976	617	0.890	534	873	2.0	5.9	37.639	E
B - Standing Way (N)	1783	446	886	1544	1.155	1534	1624	7.9	70.2	100.922	F
C - Watling Street (E)	1469	367	1576	1364	1.077	1338	844	4.3	36.9	66.399	F
D - Standing Way (S)	2083	521	1157	1697	1.228	1692	1757	11.9	109.7	136.954	F

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	549	137	1975	618	0.890	546	881	5.9	6.6	46.607	E
B - Standing Way (N)	1783	446	895	1537	1.160	1536	1627	70.2	131.8	241.425	F
C - Watling Street (E)	1469	367	1581	1360	1.080	1355	850	36.9	65.4	144.775	F
D - Standing Way (S)	2083	521	1170	1687	1.235	1686	1766	109.7	208.9	344.021	F

#### 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	449	112	1978	616	0.728	463	870	6.6	2.9	25.521	D
B - Standing Way (N)	1456	364	831	1584	0.919	1572	1610	131.8	102.7	268.497	F
C - Watling Street (E)	1199	300	1594	1348	0.889	1328	809	65.4	33.1	136.215	F
D - Standing Way (S)	1701	425	1150	1702	1.000	1698	1772	208.9	209.8	438.379	F

#### 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	376	94	2028	580	0.647	380	778	2.9	1.9	18.284	C
B - Standing Way (N)	1219	305	790	1615	0.755	1599	1618	102.7	7.6	128.634	F
C - Watling Street (E)	1004	251	1599	1344	0.747	1124	790	33.1	3.2	25.348	D
D - Standing Way (S)	1425	356	986	1828	0.779	1819	1737	209.8	111.1	318.642	F

# 2033 Base + CD + D - ST, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	328.31	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Watling Street (W)		ONE HOUR	✓	515	100.000
B - Standing Way (N)		ONE HOUR	✓	1656	100.000
C - Watling Street (E)		ONE HOUR	✓	1334	100.000
D - Standing Way (S)		ONE HOUR	✓	1951	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	120	270	125
	B - Standing Way (N)	81	3	104	1467
	C - Watling Street (E)	673	368	39	253
	D - Standing Way (S)	143	1333	467	8

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	2	2	2
	B - Standing Way (N)	3	0	1	6
	C - Watling Street (E)	1	3	3	5
	D - Standing Way (S)	0	7	1	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
-----	---------	---------------	-----------------	---------	-------------------------	-------------------------------

A - Watling Street (W)	0.92	57.35	8.4	F	472	708
B - Standing Way (N)	1.18	309.47	147.5	F	1520	2279
C - Watling Street (E)	1.09	155.02	70.0	F	1224	1836
D - Standing Way (S)	1.27	529.51	259.7	F	1790	2686

### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	387	97	1656	834	0.464	384	671	0.0	0.9	7.932	A
B - Standing Way (N)	1247	312	678	1696	0.735	1236	1362	0.0	2.7	7.654	A
C - Watling Street (E)	1004	251	1257	1626	0.618	998	657	0.0	1.6	5.675	A
D - Standing Way (S)	1469	367	872	1915	0.767	1456	1384	0.0	3.2	7.644	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	463	116	1940	641	0.722	456	796	0.9	2.4	18.934	C
B - Standing Way (N)	1489	372	798	1608	0.926	1462	1598	2.7	9.3	21.544	C
C - Watling Street (E)	1199	300	1488	1436	0.835	1187	772	1.6	4.6	13.829	B
D - Standing Way (S)	1754	439	1036	1789	0.981	1699	1639	3.2	16.9	29.947	D

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	566	142	1978	615	0.921	547	872	2.4	7.2	44.232	E
B - Standing Way (N)	1823	456	871	1555	1.173	1547	1655	9.3	78.4	111.061	F
C - Watling Street (E)	1469	367	1590	1353	1.086	1330	828	4.6	39.3	70.551	F
D - Standing Way (S)	2148	537	1156	1696	1.266	1694	1763	16.9	130.6	163.924	F

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	566	142	1976	616	0.919	562	879	7.2	8.4	57.350	F
B - Standing Way (N)	1823	456	880	1548	1.178	1547	1658	78.4	147.5	267.130	F
C - Watling Street (E)	1469	367	1593	1350	1.088	1346	834	39.3	70.0	155.015	F
D - Standing Way (S)	2148	537	1169	1686	1.274	1686	1770	130.6	248.1	405.544	F

#### 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	463	116	1981	613	0.755	483	869	8.4	3.4	30.835	D
B - Standing Way (N)	1489	372	822	1591	0.936	1580	1642	147.5	124.7	309.475	F
C - Watling Street (E)	1199	300	1605	1340	0.895	1321	798	70.0	39.6	151.608	F
D - Standing Way (S)	1754	439	1151	1701	1.032	1700	1775	246.1	259.7	529.513	F

#### 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	387	97	2021	584	0.663	393	791	3.4	2.1	19.268	C
B - Standing Way (N)	1247	312	773	1627	0.766	1614	1641	124.7	32.8	178.471	F
C - Watling Street (E)	1004	251	1615	1330	0.755	1149	772	39.6	3.3	34.649	D
D - Standing Way (S)	1469	367	1013	1806	0.813	1799	1751	259.7	177.2	437.699	F

<b>Junctions 9</b>
<b>ARCADY 9 - Roundabout Module</b>
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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**Filename:** J16 - Elfield Park Roundabout\_V3.0\_PM.j9

**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J16

**Report generation date:** 26/01/2021 09:16:16

- »2033 Base + CD + D, PM
- »2033 Base + CD + D with TP, PM
- »2033 Base + CD + D - ST, PM

### Summary of junction performance

		PM				
		Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2033 Base + CD + D</b>						
A - Watling Street (W)	D16		51.9	216.86	1.12	F
B - Standing Way (N)			292.2	581.67	1.28	F
C - Watling Street (E)			99.2	329.49	1.17	F
D - Standing Way (S)			152.3	302.90	1.17	F
<b>2033 Base + CD + D with TP</b>						
A - Watling Street (W)	D18		50.5	208.17	1.11	F
B - Standing Way (N)			247.9	503.26	1.25	F
C - Watling Street (E)			96.4	316.98	1.16	F
D - Standing Way (S)			135.5	261.75	1.15	F
<b>2033 Base + CD + D - ST</b>						
A - Watling Street (W)	D20		53.1	222.15	1.12	F
B - Standing Way (N)			311.8	616.44	1.30	F
C - Watling Street (E)			100.4	334.86	1.17	F
D - Standing Way (S)			159.2	321.49	1.17	F

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

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

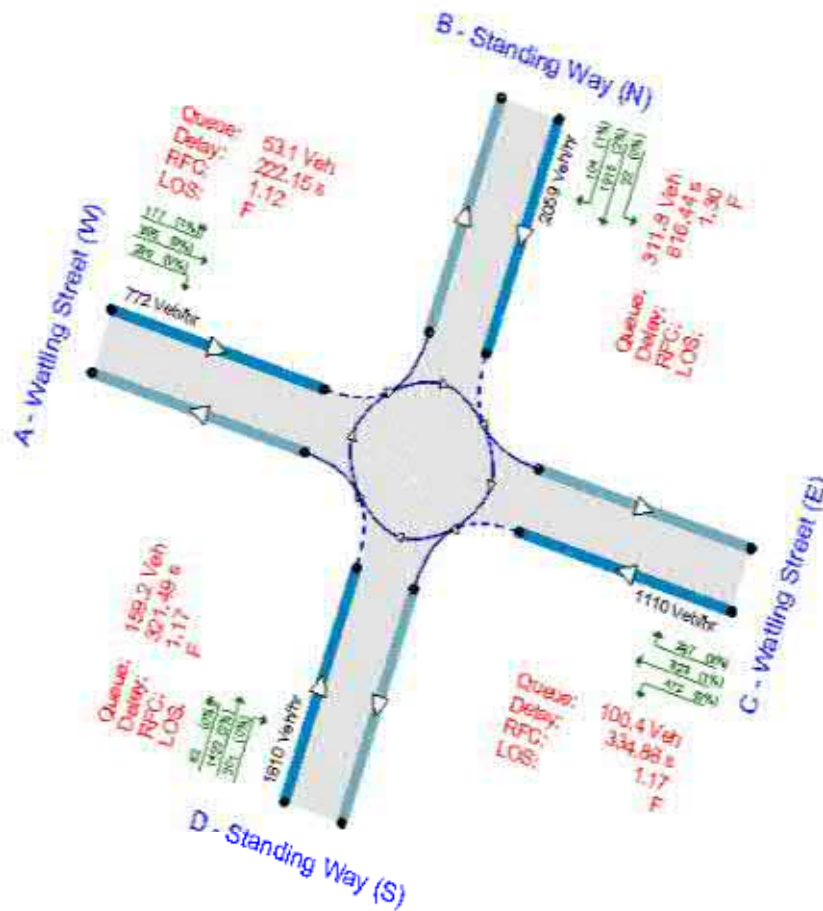
### File summary

#### File Description

<b>Title</b>	Elfield Park Roundabout
<b>Location</b>	52° 0'45.10"N, 0°45'3.92"W
<b>Site number</b>	16
<b>Date</b>	08/01/2021
<b>Version</b>	
<b>Status</b>	
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	Will Forster
<b>Description</b>	

### Units

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



The junction diagram reflects the last run of Junctions.

**Analysis Options**

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

**Demand Set Summary**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	✓
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D12	2026 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓

**Analysis Set Details**

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D16,D18,D20	100.000	100.000

# 2033 Base + CD + D, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	396.22	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Watling Street (W)	
B	Standing Way (N)	
C	Watling Street (E)	
D	Standing Way (S)	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Watling Street (W)	4.50	10.00	16.6	49.4	60.9	23.0	
B - Standing Way (N)	7.30	10.50	11.2	24.2	60.9	19.5	
C - Watling Street (E)	6.60	10.50	17.2	48.9	60.9	6.5	
D - Standing Way (S)	7.50	10.50	47.5	23.8	60.9	28.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Watling Street (W)	Direct	Calibrated against queue length	-195
B - Standing Way (N)	Direct	Calibrated against queue length	-365
C - Watling Street (E)	Direct	Calibrated against queue length	-275
D - Standing Way (S)	Direct	Calibrated against queue length	-772

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Watling Street (W)	0.667	2093
B - Standing Way (N)	0.760	2476
C - Watling Street (E)	0.801	2706
D - Standing Way (S)	0.792	2301

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
-----	------------	--------------	--------------	-------------------------	--------------------



A - Watling Street (W)	ONE HOUR	✓	766	100.000
B - Standing Way (N)	ONE HOUR	✓	2036	100.000
C - Watling Street (E)	ONE HOUR	✓	1110	100.000
D - Standing Way (S)	ONE HOUR	✓	1804	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1	171	305	290
	B - Standing Way (N)	92	8	32	1903
	C - Watling Street (E)	323	287	28	472
	D - Standing Way (S)	62	1427	301	14

### Proportions

From		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0.00	0.22	0.40	0.38
	B - Standing Way (N)	0.05	0.00	0.02	0.93
	C - Watling Street (E)	0.29	0.26	0.02	0.43
	D - Standing Way (S)	0.03	0.79	0.17	0.01

## Vehicle Mix

### Heavy Vehicle Percentages

From		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	1	0	0
	B - Standing Way (N)	1	0	0	2
	C - Watling Street (E)	1	3	0	0
	D - Standing Way (S)	0	3	0	8

### Average PCU Per Veh

From		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1.000	1.014	1.004	1.004
	B - Standing Way (N)	1.013	1.000	1.000	1.023
	C - Watling Street (E)	1.011	1.032	1.000	1.002
	D - Standing Way (S)	1.000	1.030	1.000	1.083

## Detailed Demand Data

### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Watling Street (W)	16:45-17:00	577	580
	17:00-17:15	689	693
	17:15-17:30	844	849
	17:30-17:45	844	849
	17:45-18:00	689	693
	18:00-18:15	577	580
B - Standing Way (N)	16:45-17:00	1533	1566
	17:00-17:15	1830	1870
	17:15-17:30	2241	2290
	17:30-17:45	2241	2290
	17:45-18:00	1830	1870
	18:00-18:15	1533	1566
C - Watling Street (E)	16:45-17:00	836	846
	17:00-17:15	998	1010
	17:15-17:30	1222	1238
	17:30-17:45	1222	1238
	17:45-18:00	998	1010
	18:00-18:15	836	846
D - Standing Way (S)	16:45-17:00	1358	1391
	17:00-17:15	1622	1661
	17:15-17:30	1987	2035
	17:30-17:45	1987	2035
	17:45-18:00	1622	1661
	18:00-18:15	1358	1391

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Watling Street (W)	1.12	216.86	51.9	F	703	1055
B - Standing Way (N)	1.28	581.67	292.2	F	1868	2802
C - Watling Street (E)	1.17	329.49	99.2	F	1019	1528
D - Standing Way (S)	1.17	302.90	152.3	F	1656	2484

## Main Results for each time segment

## 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	577	144	1541	1033	0.559	572	357	0.0	1.2	7.730	A
B - Standing Way (N)	1533	383	700	1901	0.806	1517	1413	0.0	4.0	9.042	A
C - Watling Street (E)	836	209	1720	1285	0.650	829	497	0.0	1.8	7.768	A
D - Standing Way (S)	1358	340	552	1813	0.749	1347	1997	0.0	2.9	7.556	A

## 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	689	172	1820	843	0.817	678	417	1.2	4.0	20.559	C
B - Standing Way (N)	1830	458	829	1804	1.014	1746	1669	4.0	24.9	39.252	E
C - Watling Street (E)	998	250	1988	1069	0.934	969	587	1.8	9.1	30.077	D
D - Standing Way (S)	1622	406	644	1740	0.932	1593	2313	2.9	10.1	21.303	C

## 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	844	211	1943	760	1.110	743	441	4.0	29.1	95.529	F
B - Standing Way (N)	2241	560	900	1751	1.280	1750	1786	24.9	147.8	184.233	F
C - Watling Street (E)	1222	306	2017	1046	1.169	1038	633	9.1	55.0	123.046	F
D - Standing Way (S)	1987	497	684	1708	1.163	1700	2371	10.1	81.7	105.729	F

## 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	844	211	1949	756	1.116	753	443	29.1	51.9	205.867	F
B - Standing Way (N)	2241	560	908	1745	1.284	1745	1793	147.8	271.9	436.718	F
C - Watling Street (E)	1222	306	2016	1047	1.168	1046	637	55.0	99.2	273.940	F
D - Standing Way (S)	1987	497	688	1705	1.165	1704	2373	81.7	152.3	252.631	F

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	689	172	1941	761	0.905	747	440	51.9	37.3	216.857	F
B - Standing Way (N)	1830	458	903	1749	1.046	1749	1785	271.9	292.2	581.674	F
C - Watling Street (E)	998	250	2018	1045	0.955	1035	634	99.2	90.0	329.489	F
D - Standing Way (S)	1622	406	682	1710	0.949	1699	2370	152.3	133.2	302.901	F

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	577	144	1939	763	0.757	711	440	37.3	3.8	93.981	F
B - Standing Way (N)	1533	383	875	1770	0.866	1764	1775	292.2	234.3	537.453	F
C - Watling Street (E)	836	209	2019	1044	0.801	1032	620	90.0	40.8	230.742	F
D - Standing Way (S)	1358	340	682	1710	0.794	1698	2370	133.2	48.4	194.739	F

# 2033 Base + CD + D with TP, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	350.64	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Watling Street (W)		ONE HOUR	✓	766	100.000
B - Standing Way (N)		ONE HOUR	✓	1982	100.000
C - Watling Street (E)		ONE HOUR	✓	1110	100.000
D - Standing Way (S)		ONE HOUR	✓	1772	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1	171	305	290
	B - Standing Way (N)	92	8	32	1849
	C - Watling Street (E)	323	287	28	472
	D - Standing Way (S)	62	1395	301	14

### Proportions

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0.00	0.22	0.40	0.38
	B - Standing Way (N)	0.05	0.00	0.02	0.93
	C - Watling Street (E)	0.29	0.26	0.02	0.43
	D - Standing Way (S)	0.04	0.79	0.17	0.01

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	1	0	0
	B - Standing Way (N)	1	0	0	2
	C - Watling Street (E)	1	3	0	0
	D - Standing Way (S)	0	3	0	8

### Average PCU Per Veh

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1.000	1.014	1.004	1.004
	B - Standing Way (N)	1.013	1.000	1.000	1.023
	C - Watling Street (E)	1.011	1.032	1.000	1.002
	D - Standing Way (S)	1.000	1.030	1.000	1.083

## Detailed Demand Data

## Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Watling Street (W)	16:45-17:00	577	580
	17:00-17:15	689	693
	17:15-17:30	844	849
	17:30-17:45	844	849
	17:45-18:00	689	693
	18:00-18:15	577	580
B - Standing Way (N)	16:45-17:00	1492	1524
	17:00-17:15	1782	1820
	17:15-17:30	2182	2229
	17:30-17:45	2182	2229
	17:45-18:00	1782	1820
	18:00-18:15	1492	1524
C - Watling Street (E)	16:45-17:00	836	846
	17:00-17:15	998	1010
	17:15-17:30	1222	1238
	17:30-17:45	1222	1238
	17:45-18:00	998	1010
	18:00-18:15	836	846
D - Standing Way (S)	16:45-17:00	1334	1366
	17:00-17:15	1593	1632
	17:15-17:30	1951	1998
	17:30-17:45	1951	1998
	17:45-18:00	1593	1632
	18:00-18:15	1334	1366

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Watling Street (W)	1.11	208.17	50.5	F	703	1055
B - Standing Way (N)	1.25	503.26	247.9	F	1818	2728
C - Watling Street (E)	1.16	316.98	96.4	F	1019	1528
D - Standing Way (S)	1.15	261.75	135.5	F	1626	2440

## Main Results for each time segment

## 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	577	144	1518	1049	0.550	572	358	0.0	1.2	7.480	A
B - Standing Way (N)	1492	373	701	1900	0.785	1478	1390	0.0	3.5	8.269	A
C - Watling Street (E)	836	209	1681	1316	0.635	829	497	0.0	1.7	7.286	A
D - Standing Way (S)	1334	334	552	1812	0.736	1323	1958	0.0	2.7	7.214	A

## 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	689	172	1797	859	0.802	679	420	1.2	3.7	19.045	C
B - Standing Way (N)	1782	445	831	1803	0.988	1722	1645	3.5	18.4	31.823	D
C - Watling Street (E)	998	250	1964	1089	0.917	973	589	1.7	7.9	26.851	D
D - Standing Way (S)	1593	398	648	1737	0.917	1569	2289	2.7	8.8	19.127	C

## 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	844	211	1938	763	1.105	745	445	3.7	28.2	92.378	F
B - Standing Way (N)	2182	545	907	1747	1.249	1744	1777	18.4	128.0	158.190	F
C - Watling Street (E)	1222	306	2012	1050	1.164	1042	639	7.9	53.1	117.455	F
D - Standing Way (S)	1951	488	688	1705	1.144	1695	2365	8.8	72.9	95.530	F

## 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
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A - Watling Street (W)	844	211	1946	758	1.113	755	447	28.2	50.5	200.035	F
B - Standing Way (N)	2182	545	915	1740	1.254	1740	1786	128.0	238.4	383.076	F
C - Watling Street (E)	1222	306	2011	1050	1.164	1049	644	53.1	96.4	264.907	F
D - Standing Way (S)	1951	488	692	1702	1.147	1701	2368	72.9	135.5	226.354	F

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	689	172	1936	764	0.901	750	444	50.5	35.3	208.168	F
B - Standing Way (N)	1782	445	909	1744	1.021	1743	1776	238.4	247.9	503.255	F
C - Watling Street (E)	998	250	2013	1049	0.951	1039	640	96.4	86.2	316.976	F
D - Standing Way (S)	1593	398	687	1707	0.934	1694	2365	135.5	110.3	261.748	F

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	577	144	1934	766	0.753	704	444	35.3	3.6	84.453	F
B - Standing Way (N)	1492	373	873	1771	0.842	1764	1764	247.9	179.8	436.994	F
C - Watling Street (E)	836	209	2016	1047	0.799	1035	622	86.2	36.5	216.422	F
D - Standing Way (S)	1334	334	685	1708	0.781	1692	2365	110.3	20.8	142.956	F

# 2033 Base + CD + D - ST, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	416.79	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Watling Street (W)		ONE HOUR	✓	772	100.000
B - Standing Way (N)		ONE HOUR	✓	2059	100.000
C - Watling Street (E)		ONE HOUR	✓	1110	100.000
D - Standing Way (S)		ONE HOUR	✓	1810	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1	177	305	290
	B - Standing Way (N)	104	8	32	1915
	C - Watling Street (E)	323	287	28	472
	D - Standing Way (S)	62	1433	301	14

### Proportions

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0.00	0.23	0.39	0.38
	B - Standing Way (N)	0.05	0.00	0.02	0.93
	C - Watling Street (E)	0.29	0.26	0.02	0.43
	D - Standing Way (S)	0.03	0.79	0.17	0.01

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	1	0	0
	B - Standing Way (N)	1	0	0	2
	C - Watling Street (E)	1	3	0	0
	D - Standing Way (S)	0	3	0	8

### Average PCU Per Veh

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1.000	1.014	1.004	1.004
	B - Standing Way (N)	1.013	1.000	1.000	1.023
	C - Watling Street (E)	1.011	1.032	1.000	1.002
	D - Standing Way (S)	1.000	1.030	1.000	1.083

## Detailed Demand Data

## Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Watling Street (W)	16:45-17:00	581	585
	17:00-17:15	694	698
	17:15-17:30	850	855
	17:30-17:45	850	855
	17:45-18:00	694	698
	18:00-18:15	581	585
B - Standing Way (N)	16:45-17:00	1550	1584
	17:00-17:15	1851	1891
	17:15-17:30	2267	2316
	17:30-17:45	2267	2316
	17:45-18:00	1851	1891
	18:00-18:15	1550	1584
C - Watling Street (E)	16:45-17:00	836	846
	17:00-17:15	998	1010
	17:15-17:30	1222	1238
	17:30-17:45	1222	1238
	17:45-18:00	998	1010
	18:00-18:15	836	846
D - Standing Way (S)	16:45-17:00	1363	1396
	17:00-17:15	1627	1667
	17:15-17:30	1993	2041
	17:30-17:45	1993	2041
	17:45-18:00	1627	1667
	18:00-18:15	1363	1396

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Watling Street (W)	1.12	222.15	53.1	F	709	1063
B - Standing Way (N)	1.30	616.44	311.8	F	1890	2834
C - Watling Street (E)	1.17	334.86	100.4	F	1019	1528
D - Standing Way (S)	1.17	321.49	159.2	F	1661	2492

## Main Results for each time segment

## 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	581	145	1546	1030	0.564	576	366	0.0	1.3	7.850	A
B - Standing Way (N)	1550	388	700	1901	0.816	1534	1422	0.0	4.2	9.419	A
C - Watling Street (E)	836	209	1737	1272	0.657	828	497	0.0	1.9	7.994	A
D - Standing Way (S)	1363	341	560	1806	0.755	1351	2005	0.0	3.0	7.726	A

## 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	694	174	1823	841	0.825	683	426	1.3	4.1	21.301	C
B - Standing Way (N)	1851	463	828	1805	1.026	1755	1677	4.2	28.2	42.860	E
C - Watling Street (E)	998	250	1997	1062	0.940	967	587	1.9	9.5	31.357	D
D - Standing Way (S)	1627	407	653	1733	0.939	1596	2312	3.0	10.8	22.432	C

## 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	850	213	1937	764	1.113	748	450	4.1	29.8	97.160	F
B - Standing Way (N)	2267	567	897	1754	1.293	1752	1788	28.2	156.9	196.517	F
C - Watling Street (E)	1222	306	2019	1044	1.171	1037	630	9.5	55.9	125.374	F
D - Standing Way (S)	1993	498	692	1702	1.171	1695	2364	10.8	85.4	110.565	F

## 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
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A - Watling Street (W)	850	213	1943	760	1.119	757	452	29.8	53.1	209.277	F
B - Standing Way (N)	2267	567	905	1748	1.297	1747	1794	156.9	286.9	460.757	F
C - Watling Street (E)	1222	306	2018	1045	1.170	1044	635	55.9	100.4	277.828	F
D - Standing Way (S)	1993	498	696	1699	1.173	1698	2366	85.4	159.2	264.616	F

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	694	174	1935	765	0.907	751	448	53.1	38.8	222.154	F
B - Standing Way (N)	1851	463	900	1752	1.057	1751	1786	286.9	311.8	616.437	F
C - Watling Street (E)	998	250	2020	1044	0.956	1033	631	100.4	91.6	334.865	F
D - Standing Way (S)	1627	407	690	1703	0.955	1693	2363	159.2	142.9	321.487	F

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Watling Street (W)	581	145	1933	766	0.759	721	449	38.8	3.9	99.749	F
B - Standing Way (N)	1550	388	876	1769	0.876	1764	1778	311.8	258.4	582.270	F
C - Watling Street (E)	836	209	2021	1043	0.801	1032	619	91.6	42.6	236.756	F
D - Standing Way (S)	1363	341	690	1704	0.800	1692	2362	142.9	60.6	218.357	F



<b>Junctions 9</b>
<b>ARCADY 9 - Roundabout Module</b>
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**Filename:** J17 - Emerson Roundabout\_V2.0\_AM.j9

**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J17

**Report generation date:** 28/01/2021 16:25:00

- »2033 Base + CD + D, AM
- »2033 Base + CD + D with TP, AM
- »2033 Base + CD + D - ST, AM

### Summary of junction performance

		AM			
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2033 Base + CD + D</b>					
A - Fulmer Street	D15	70.6	313.99	1.23	F
B - Standing Way (N)		96.0	223.51	1.12	F
C - Shenley Way		45.8	246.53	1.13	F
D - Standing Way (S)		59.9	75.68	1.03	F
<b>2033 Base + CD + D with TP</b>					
A - Fulmer Street	D17	62.7	273.14	1.20	F
B - Standing Way (N)		86.6	204.61	1.11	F
C - Shenley Way		42.7	216.52	1.12	F
D - Standing Way (S)		41.8	56.87	1.01	F
<b>2033 Base + CD + D - ST</b>					
A - Fulmer Street	D19	74.9	349.78	1.24	F
B - Standing Way (N)		101.0	234.65	1.13	F
C - Shenley Way		47.0	257.03	1.14	F
D - Standing Way (S)		68.3	84.28	1.04	F

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

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

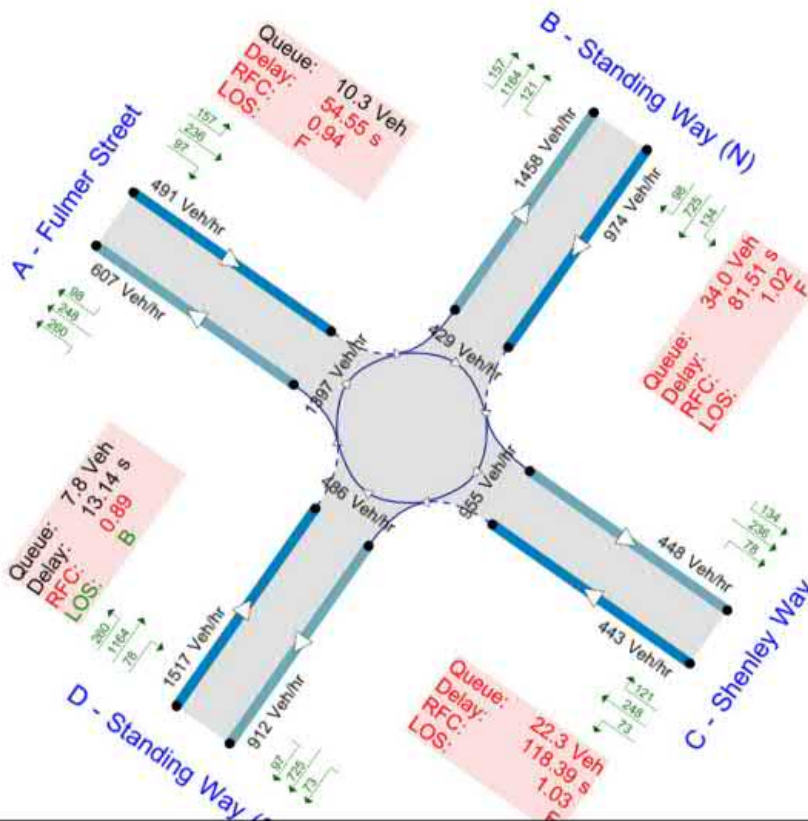
### File summary

#### File Description

<b>Title</b>	Emerson Roundabout
<b>Location</b>	52° 0'10.64"N, 0°45'50.10"W
<b>Site number</b>	17
<b>Date</b>	07/01/2021
<b>Version</b>	
<b>Status</b>	
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	Will Forster
<b>Description</b>	

### Units

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



The junction diagram reflects the last run of Junctions.

**Analysis Options**

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

**Demand Set Summary**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	✓
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D11	2026 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓

**Analysis Set Details**

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D15,D17,D19	100.000	100.000

# 2033 Base + CD + D, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Fulmer Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	169.57	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Fulmer Street	
B	Standing Way (N)	
C	Shenley Way	
D	Standing Way (S)	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Fulmer Street	3.00	8.10	60.4	35.5	68.0	8.0	
B - Standing Way (N)	7.30	10.50	27.9	39.2	68.0	17.5	
C - Shenley Way	3.70	10.50	13.0	42.1	69.4	18.5	
D - Standing Way (S)	7.50	10.60	39.8	30.0	69.4	27.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Fulmer Street	Direct	Calibrated against queue length	-190
B - Standing Way (N)	Direct	Calibrated against queue length	-1150
C - Shenley Way	Direct	Calibrated against queue length	-546
D - Standing Way (S)	None		

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Fulmer Street	0.640	2143
B - Standing Way (N)	0.758	1968
C - Shenley Way	0.574	1469
D - Standing Way (S)	0.737	3105

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	✓	683	100.000
B - Standing Way (N)		ONE HOUR	✓	1463	100.000
C - Shenley Way		ONE HOUR	✓	606	100.000
D - Standing Way (S)		ONE HOUR	✓	2369	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
	A - Fulmer Street	1	210	311	161
	B - Standing Way (N)	131	23	179	1130
	C - Shenley Way	331	162	1	112
	D - Standing Way (S)	398	1834	115	22

### Proportions

From		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
	A - Fulmer Street	0.00	0.31	0.46	0.24
	B - Standing Way (N)	0.09	0.02	0.12	0.77
	C - Shenley Way	0.55	0.27	0.00	0.18
	D - Standing Way (S)	0.17	0.77	0.05	0.01

## Vehicle Mix

### Heavy Vehicle Percentages

From		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
	A - Fulmer Street	0	2	2	3
	B - Standing Way (N)	4	5	1	7
	C - Shenley Way	2	0	0	2
	D - Standing Way (S)	0	5	1	5

### Average PCU Per Veh

From		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
	A - Fulmer Street	1.000	1.016	1.018	1.027
	B - Standing Way (N)	1.035	1.050	1.013	1.069
	C - Shenley Way	1.017	1.000	1.000	1.024
	D - Standing Way (S)	1.003	1.050	1.011	1.053

## Detailed Demand Data

### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street	07:30-07:45	514	524
	07:45-08:00	614	626
	08:00-08:15	752	767
	08:15-08:30	752	767
	08:30-08:45	614	626
	08:45-09:00	514	524
B - Standing Way (N)	07:30-07:45	1101	1165
	07:45-08:00	1315	1392
	08:00-08:15	1610	1704
	08:15-08:30	1610	1704
	08:30-08:45	1315	1392
	08:45-09:00	1101	1165
C - Shenley Way	07:30-07:45	456	463
	07:45-08:00	545	553
	08:00-08:15	668	677
	08:15-08:30	668	677
	08:30-08:45	545	553
	08:45-09:00	456	463
D - Standing Way (S)	07:30-07:45	1783	1855
	07:45-08:00	2129	2216
	08:00-08:15	2608	2713
	08:15-08:30	2608	2713
	08:30-08:45	2129	2216
	08:45-09:00	1783	1855

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street	1.23	313.99	70.6	F	627	940
B - Standing Way (N)	1.12	223.51	96.0	F	1342	2013
C - Shenley Way	1.13	246.53	45.8	F	556	835

D - Standing Way (S)	1.03	75.68	59.9	F	2174	3260
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### Main Results for each time segment

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	514	129	1615	1043	0.493	510	643	0.0	1.0	6.701	A
B - Standing Way (N)	1101	275	457	1525	0.722	1091	1669	0.0	2.5	8.117	A
C - Shenley Way	456	114	1095	792	0.577	451	453	0.0	1.3	10.418	B
D - Standing Way (S)	1783	446	483	2636	0.676	1775	1063	0.0	2.1	4.143	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	614	153	1927	839	0.732	607	765	1.0	2.6	15.159	C
B - Standing Way (N)	1315	329	544	1461	0.900	1295	1991	2.5	7.4	19.738	C
C - Shenley Way	545	136	1301	668	0.816	535	539	1.3	3.8	25.315	D
D - Standing Way (S)	2129	532	573	2571	0.828	2119	1262	2.1	4.6	7.793	A

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	752	188	2242	632	1.189	620	863	2.6	35.4	126.512	F
B - Standing Way (N)	1610	403	574	1439	1.119	1426	2288	7.4	53.6	87.216	F
C - Shenley Way	668	167	1421	596	1.121	581	578	3.8	25.5	108.726	F
D - Standing Way (S)	2608	652	625	2534	1.029	2480	1378	4.6	36.5	37.898	E

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	752	188	2272	612	1.228	611	873	35.4	70.6	313.990	F
B - Standing Way (N)	1610	403	570	1443	1.116	1441	2314	53.6	96.0	195.021	F
C - Shenley Way	668	167	1433	589	1.134	586	578	25.5	45.8	232.575	F
D - Standing Way (S)	2608	652	630	2530	1.031	2515	1388	36.5	59.9	75.683	F

#### 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	614	153	2132	705	0.871	695	843	70.6	50.3	302.004	F
B - Standing Way (N)	1315	329	618	1407	0.934	1393	2209	96.0	76.5	223.507	F
C - Shenley Way	545	136	1409	604	0.903	591	602	45.8	34.4	246.527	F
D - Standing Way (S)	2129	532	629	2531	0.841	2345	1371	59.9	5.9	33.965	D

#### 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	514	129	1672	1007	0.511	711	743	50.3	1.1	25.751	D
B - Standing Way (N)	1101	275	597	1422	0.774	1389	1786	76.5	4.6	105.408	F
C - Shenley Way	456	114	1404	606	0.753	578	582	34.4	4.1	121.220	F
D - Standing Way (S)	1783	446	618	2539	0.702	1797	1364	5.9	2.4	4.943	A

# 2033 Base + CD + D with TP, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Fulmer Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	147.11	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	✓	679	100.000
B - Standing Way (N)		ONE HOUR	✓	1442	100.000
C - Shenley Way		ONE HOUR	✓	604	100.000
D - Standing Way (S)		ONE HOUR	✓	2317	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	1	210	311	157
	B - Standing Way (N)	131	23	179	1109
	C - Shenley Way	331	162	1	110
	D - Standing Way (S)	391	1791	113	22

### Proportions

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0.00	0.31	0.46	0.23
	B - Standing Way (N)	0.09	0.02	0.12	0.77
	C - Shenley Way	0.55	0.27	0.00	0.18
	D - Standing Way (S)	0.17	0.77	0.05	0.01

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0	2	2	3
	B - Standing Way (N)	4	5	1	7
	C - Shenley Way	2	0	0	2
	D - Standing Way (S)	0	5	1	5

### Average PCU Per Veh

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	1.000	1.016	1.018	1.027
	B - Standing Way (N)	1.035	1.050	1.013	1.069
	C - Shenley Way	1.017	1.000	1.000	1.024
	D - Standing Way (S)	1.003	1.050	1.011	1.053

## Detailed Demand Data

## Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street	07:30-07:45	511	521
	07:45-08:00	610	622
	08:00-08:15	747	762
	08:15-08:30	747	762
	08:30-08:45	610	622
	08:45-09:00	511	521
B - Standing Way (N)	07:30-07:45	1085	1149
	07:45-08:00	1296	1372
	08:00-08:15	1587	1680
	08:15-08:30	1587	1680
	08:30-08:45	1296	1372
	08:45-09:00	1085	1149
C - Shenley Way	07:30-07:45	455	461
	07:45-08:00	543	551
	08:00-08:15	665	675
	08:15-08:30	665	675
	08:30-08:45	543	551
	08:45-09:00	455	461
D - Standing Way (S)	07:30-07:45	1744	1815
	07:45-08:00	2083	2167
	08:00-08:15	2551	2654
	08:15-08:30	2551	2654
	08:30-08:45	2083	2167
	08:45-09:00	1744	1815

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street	1.20	273.14	62.7	F	623	934
B - Standing Way (N)	1.11	204.61	86.6	F	1323	1984
C - Shenley Way	1.12	216.52	42.7	F	555	832
D - Standing Way (S)	1.01	56.87	41.8	F	2126	3189

## Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	511	128	1582	1065	0.480	507	638	0.0	0.9	6.413	A
B - Standing Way (N)	1085	271	452	1529	0.710	1076	1637	0.0	2.4	7.797	A
C - Shenley Way	455	114	1077	803	0.567	450	451	0.0	1.3	10.066	B
D - Standing Way (S)	1744	436	484	2636	0.662	1736	1043	0.0	1.9	3.967	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	610	153	1888	864	0.706	605	760	0.9	2.3	13.587	B
B - Standing Way (N)	1296	324	539	1465	0.885	1279	1954	2.4	6.5	17.966	C
C - Shenley Way	543	136	1281	680	0.799	534	538	1.3	3.5	23.367	C
D - Standing Way (S)	2083	521	574	2571	0.810	2074	1241	1.9	4.1	7.126	A

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	747	187	2221	646	1.157	631	865	2.3	31.3	112.125	F
B - Standing Way (N)	1587	397	580	1435	1.106	1419	2273	6.5	48.7	80.579	F
C - Shenley Way	665	166	1413	601	1.107	584	586	3.5	23.8	101.953	F
D - Standing Way (S)	2551	638	630	2530	1.008	2456	1367	4.1	27.9	31.333	D

## 08:15 - 08:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)		service
A - Fulmer Street	747	187	2256	623	1.199	622	876	31.3	62.7	273.143	F
B - Standing Way (N)	1587	397	576	1438	1.104	1436	2302	48.7	86.6	178.338	F
C - Shenley Way	665	166	1426	593	1.122	590	586	23.8	42.7	216.500	F
D - Standing Way (S)	2551	638	637	2526	1.010	2495	1379	27.9	41.8	56.870	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	610	153	2037	767	0.795	755	830	62.7	26.5	213.531	F
B - Standing Way (N)	1296	324	653	1382	0.938	1366	2139	86.6	69.0	204.609	F
C - Shenley Way	543	136	1394	613	0.886	599	625	42.7	28.7	216.523	F
D - Standing Way (S)	2083	521	637	2526	0.825	2230	1356	41.8	5.0	17.899	C

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	511	128	1631	1034	0.494	613	726	26.5	1.0	10.972	B
B - Standing Way (N)	1085	271	527	1474	0.736	1349	1718	69.0	3.1	68.316	F
C - Shenley Way	455	114	1341	644	0.706	559	535	28.7	2.7	70.012	F
D - Standing Way (S)	1744	436	602	2551	0.684	1756	1298	5.0	2.2	4.589	A



# 2033 Base + CD + D - ST, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Fulmer Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	182.55	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	✓	687	100.000
B - Standing Way (N)		ONE HOUR	✓	1471	100.000
C - Shenley Way		ONE HOUR	✓	609	100.000
D - Standing Way (S)		ONE HOUR	✓	2389	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	1	210	315	161
	B - Standing Way (N)	131	23	179	1138
	C - Shenley Way	333	162	1	113
	D - Standing Way (S)	398	1850	119	22

### Proportions

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0.00	0.31	0.46	0.23
	B - Standing Way (N)	0.09	0.02	0.12	0.77
	C - Shenley Way	0.55	0.27	0.00	0.19
	D - Standing Way (S)	0.17	0.77	0.05	0.01

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0	2	2	3
	B - Standing Way (N)	4	5	1	7
	C - Shenley Way	2	0	0	2
	D - Standing Way (S)	0	5	1	5

### Average PCU Per Veh

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	1.000	1.016	1.018	1.027
	B - Standing Way (N)	1.035	1.050	1.013	1.069
	C - Shenley Way	1.017	1.000	1.000	1.024
	D - Standing Way (S)	1.003	1.050	1.011	1.053

## Detailed Demand Data

## Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street	07:30-07:45	517	527
	07:45-08:00	617	630
	08:00-08:15	756	771
	08:15-08:30	756	771
	08:30-08:45	617	630
	08:45-09:00	517	527
B - Standing Way (N)	07:30-07:45	1107	1172
	07:45-08:00	1322	1399
	08:00-08:15	1619	1714
	08:15-08:30	1619	1714
	08:30-08:45	1322	1399
	08:45-09:00	1107	1172
C - Shenley Way	07:30-07:45	459	465
	07:45-08:00	548	555
	08:00-08:15	671	680
	08:15-08:30	671	680
	08:30-08:45	548	555
	08:45-09:00	459	465
D - Standing Way (S)	07:30-07:45	1798	1871
	07:45-08:00	2147	2234
	08:00-08:15	2630	2736
	08:15-08:30	2630	2736
	08:30-08:45	2147	2234
	08:45-09:00	1798	1871

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street	1.24	349.78	74.9	F	630	945
B - Standing Way (N)	1.13	234.65	101.0	F	1349	2024
C - Shenley Way	1.14	257.03	47.0	F	559	839
D - Standing Way (S)	1.04	84.28	68.3	F	2192	3288

## Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	517	129	1630	1034	0.500	513	645	0.0	1.0	6.865	A
B - Standing Way (N)	1107	277	462	1521	0.728	1097	1680	0.0	2.6	8.299	A
C - Shenley Way	459	115	1101	788	0.582	453	458	0.0	1.4	10.586	B
D - Standing Way (S)	1798	450	485	2635	0.682	1790	1069	0.0	2.1	4.216	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	617	154	1944	828	0.746	610	767	1.0	2.7	16.078	C
B - Standing Way (N)	1322	331	551	1457	0.908	1301	2004	2.6	7.8	20.799	C
C - Shenley Way	548	137	1306	665	0.824	537	545	1.4	4.0	26.244	D
D - Standing Way (S)	2147	537	574	2571	0.835	2137	1269	2.1	4.8	8.098	A

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	756	189	2251	627	1.207	616	861	2.7	37.8	134.522	F
B - Standing Way (N)	1619	405	575	1439	1.126	1426	2291	7.8	56.2	90.999	F
C - Shenley Way	671	168	1421	596	1.125	582	581	4.0	26.2	111.219	F
D - Standing Way (S)	2630	657	624	2535	1.038	2487	1379	4.8	40.5	40.831	E

## 08:15 - 08:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)		service
A - Fulmer Street	756	189	2279	608	1.243	607	870	37.8	74.9	337.098	F
B - Standing Way (N)	1619	405	571	1442	1.123	1440	2315	56.2	101.0	204.308	F
C - Shenley Way	671	168	1431	590	1.137	587	580	26.2	47.0	238.062	F
D - Standing Way (S)	2630	657	630	2531	1.039	2519	1388	40.5	68.3	84.279	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	617	154	2175	676	0.913	667	847	74.9	62.4	349.779	F
B - Standing Way (N)	1322	331	605	1416	0.933	1403	2237	101.0	80.9	234.652	F
C - Shenley Way	548	137	1411	602	0.910	589	597	47.0	36.6	257.033	F
D - Standing Way (S)	2147	537	628	2532	0.848	2395	1373	68.3	6.4	44.474	E

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	517	129	1690	995	0.519	762	747	62.4	1.1	47.506	E
B - Standing Way (N)	1107	277	637	1393	0.795	1376	1815	80.9	13.7	128.355	F
C - Shenley Way	459	115	1405	606	0.757	587	608	36.6	4.6	133.909	F
D - Standing Way (S)	1798	450	623	2536	0.709	1814	1369	6.4	2.5	5.094	A

<b>Junctions 9</b>
<b>ARCADY 9 - Roundabout Module</b>
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Filename: J17 - Emerson Roundabout\_V2.0\_PM.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J17

Report generation date: 28/01/2021 16:27:08

- »2033 Base + CD + D, PM
- »2033 Base + CD + D with TP, PM
- »2033 Base + CD + D - ST, PM

### Summary of junction performance

		PM			
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2033 Base + CD + D</b>					
A - Fulmer Street	D16	21.1	95.01	1.02	F
B - Standing Way (N)		242.5	425.54	1.23	F
C - Shenley Way		62.9	464.09	1.21	F
D - Standing Way (S)		52.2	93.74	1.04	F
<b>2033 Base + CD + D with TP</b>					
A - Fulmer Street	D18	16.6	77.97	0.99	F
B - Standing Way (N)		207.6	348.22	1.20	F
C - Shenley Way		57.4	422.17	1.19	F
D - Standing Way (S)		39.0	74.44	1.02	F
<b>2033 Base + CD + D - ST</b>					
A - Fulmer Street	D20	21.5	96.81	1.02	F
B - Standing Way (N)		249.9	441.45	1.24	F
C - Shenley Way		67.6	496.69	1.23	F
D - Standing Way (S)		53.8	96.02	1.04	F

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

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

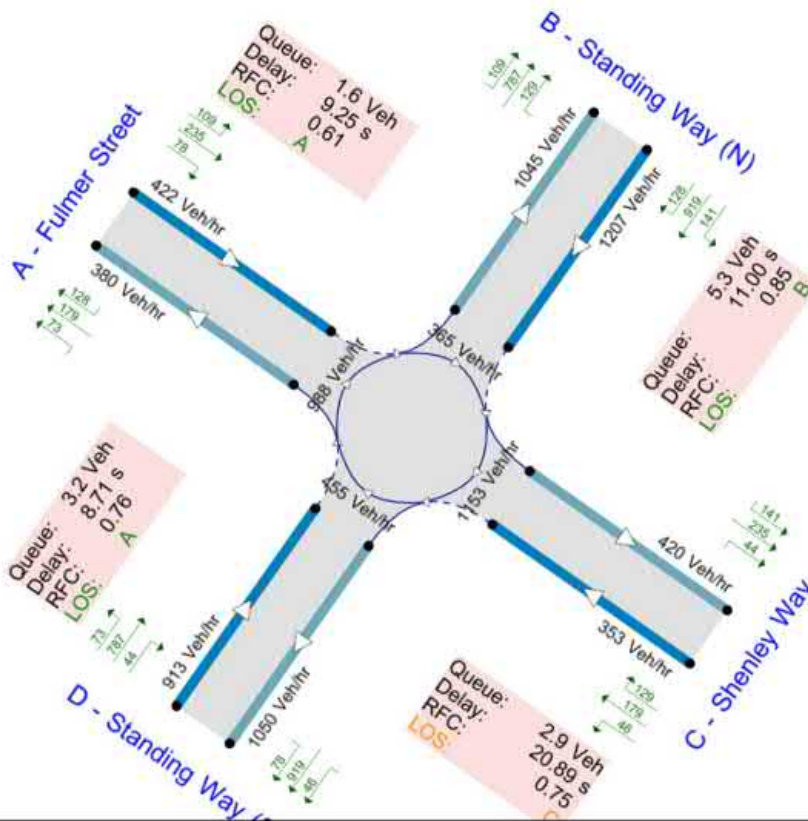
### File summary

#### File Description

Title	Emerson Roundabout
Location	52° 0'10.64"N, 0°45'50.10"W
Site number	17
Date	07/01/2021
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
Description	

### Units

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



The junction diagram reflects the last run of Junctions.

**Analysis Options**

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

**Demand Set Summary**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	✓
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D12	2026 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓

**Analysis Set Details**

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D16,D18,D20	100.000	100.000

# 2033 Base + CD + D, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Fulmer Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	276.25	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Fulmer Street	
B	Standing Way (N)	
C	Shenley Way	
D	Standing Way (S)	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Fulmer Street	3.00	8.10	60.4	35.5	68.0	8.0	
B - Standing Way (N)	7.30	10.50	27.9	39.2	68.0	17.5	
C - Shenley Way	3.70	10.50	13.0	42.1	69.4	18.5	
D - Standing Way (S)	7.50	10.60	39.8	30.0	69.4	27.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Fulmer Street	Direct	Calibrated using video survey	-370
B - Standing Way (N)	Direct	Calibrated against queue length	-578
C - Shenley Way	Direct	Calibrated against queue length	-335
D - Standing Way (S)	Direct	Calibrated against queue length	-815

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Fulmer Street	0.640	1963
B - Standing Way (N)	0.758	2540
C - Shenley Way	0.574	1681
D - Standing Way (S)	0.737	2290

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	✓	710	100.000
B - Standing Way (N)		ONE HOUR	✓	2225	100.000
C - Shenley Way		ONE HOUR	✓	559	100.000
D - Standing Way (S)		ONE HOUR	✓	1678	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	0	168	361	180	
B - Standing Way (N)	197	30	217	1781	
C - Shenley Way	276	198	0	85	
D - Standing Way (S)	150	1433	82	13	

### Proportions

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	0.00	0.24	0.51	0.25	
B - Standing Way (N)	0.09	0.01	0.10	0.80	
C - Shenley Way	0.49	0.35	0.00	0.15	
D - Standing Way (S)	0.09	0.85	0.05	0.01	

## Vehicle Mix

### Heavy Vehicle Percentages

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	0	1	0	2	
B - Standing Way (N)	0	0	0	2	
C - Shenley Way	1	0	0	0	
D - Standing Way (S)	0	3	2	0	

### Average PCU Per Veh

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	1.000	1.007	1.000	1.019	
B - Standing Way (N)	1.000	1.000	1.000	1.021	
C - Shenley Way	1.008	1.000	1.000	1.000	
D - Standing Way (S)	1.000	1.028	1.017	1.000	

## Detailed Demand Data

### Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street	16:45-17:00	534	538
	17:00-17:15	638	642
	17:15-17:30	781	786
	17:30-17:45	781	786
	17:45-18:00	638	642
	18:00-18:15	534	538
B - Standing Way (N)	16:45-17:00	1675	1703
	17:00-17:15	2000	2034
	17:15-17:30	2450	2491
	17:30-17:45	2450	2491
	17:45-18:00	2000	2034
	18:00-18:15	1675	1703
C - Shenley Way	16:45-17:00	421	423
	17:00-17:15	503	505
	17:15-17:30	616	618
	17:30-17:45	616	618
	17:45-18:00	503	505
	18:00-18:15	421	423
D - Standing Way (S)	16:45-17:00	1263	1294
	17:00-17:15	1508	1546
	17:15-17:30	1847	1893
	17:30-17:45	1847	1893
	17:45-18:00	1508	1546
	18:00-18:15	1263	1294

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street	1.02	95.01	21.1	F	651	977
B - Standing Way (N)	1.23	425.54	242.5	F	2042	3063
C - Shenley Way	1.21	464.09	62.9	F	513	770

D - Standing Way (S)	1.04	93.74	52.2	F	1539	2309
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### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	534	134	1312	1097	0.487	531	464	0.0	0.9	6.319	A
B - Standing Way (N)	1675	419	475	2140	0.783	1661	1368	0.0	3.5	7.318	A
C - Shenley Way	421	105	1644	717	0.587	415	493	0.0	1.4	11.727	B
D - Standing Way (S)	1263	316	522	1858	0.680	1255	1537	0.0	2.1	5.886	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	638	159	1560	935	0.682	633	545	0.9	2.1	11.763	B
B - Standing Way (N)	2000	500	568	2071	0.966	1954	1626	3.5	15.1	24.423	C
C - Shenley Way	503	126	1936	547	0.919	481	586	1.4	6.7	44.923	E
D - Standing Way (S)	1508	377	608	1796	0.840	1497	1809	2.1	4.8	11.613	B

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	781	195	1789	786	0.994	737	580	2.1	13.1	51.497	F
B - Standing Way (N)	2450	613	660	2002	1.224	1998	1866	15.1	128.2	135.777	F
C - Shenley Way	616	154	2003	508	1.212	502	655	6.7	35.2	169.056	F
D - Standing Way (S)	1847	462	630	1781	1.037	1739	1875	4.8	31.8	47.721	E

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	781	195	1815	769	1.016	750	585	13.1	21.1	95.013	F
B - Standing Way (N)	2450	613	671	1993	1.229	1993	1893	128.2	242.5	337.608	F
C - Shenley Way	616	154	2002	508	1.211	507	662	35.2	62.2	360.483	F
D - Standing Way (S)	1847	462	634	1778	1.039	1766	1876	31.8	52.2	93.737	F

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	638	159	1744	815	0.782	706	576	21.1	4.1	44.283	E
B - Standing Way (N)	2000	500	634	2022	0.990	2013	1816	242.5	239.3	425.540	F
C - Shenley Way	503	126	2009	505	0.996	500	638	62.2	62.9	464.088	F
D - Standing Way (S)	1508	377	630	1781	0.847	1690	1879	52.2	6.7	55.198	F

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	534	134	1359	1066	0.501	547	532	4.1	1.0	7.085	A
B - Standing Way (N)	1675	419	489	2130	0.786	2121	1417	239.3	127.8	312.380	F
C - Shenley Way	421	105	2063	473	0.890	466	548	62.9	51.7	444.258	F
D - Standing Way (S)	1263	316	612	1794	0.704	1280	1917	6.7	2.4	7.225	A



# 2033 Base + CD + D with TP, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Fulmer Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	230.10	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	✓	700	100.000
B - Standing Way (N)		ONE HOUR	✓	2171	100.000
C - Shenley Way		ONE HOUR	✓	557	100.000
D - Standing Way (S)		ONE HOUR	✓	1638	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0	168	361	170
	B - Standing Way (N)	197	30	217	1727
	C - Shenley Way	276	198	0	83
	D - Standing Way (S)	144	1401	80	13

### Proportions

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0.00	0.24	0.52	0.24
	B - Standing Way (N)	0.09	0.01	0.10	0.80
	C - Shenley Way	0.49	0.36	0.00	0.15
	D - Standing Way (S)	0.09	0.86	0.05	0.01

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0	1	0	2
	B - Standing Way (N)	0	0	0	2
	C - Shenley Way	1	0	0	0
	D - Standing Way (S)	0	3	2	0

### Average PCU Per Veh

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	1.000	1.007	1.000	1.019
	B - Standing Way (N)	1.000	1.000	1.000	1.021
	C - Shenley Way	1.008	1.000	1.000	1.000
	D - Standing Way (S)	1.000	1.028	1.017	1.000

## Detailed Demand Data

## Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street	16:45-17:00	527	530
	17:00-17:15	629	633
	17:15-17:30	770	775
	17:30-17:45	770	775
	17:45-18:00	629	633
	18:00-18:15	527	530
B - Standing Way (N)	16:45-17:00	1635	1662
	17:00-17:15	1952	1985
	17:15-17:30	2391	2431
	17:30-17:45	2391	2431
	17:45-18:00	1952	1985
	18:00-18:15	1635	1662
C - Shenley Way	16:45-17:00	420	421
	17:00-17:15	501	503
	17:15-17:30	614	616
	17:30-17:45	614	616
	17:45-18:00	501	503
	18:00-18:15	420	421
D - Standing Way (S)	16:45-17:00	1233	1263
	17:00-17:15	1472	1508
	17:15-17:30	1803	1847
	17:30-17:45	1803	1847
	17:45-18:00	1472	1508
	18:00-18:15	1233	1263

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street	0.99	77.97	16.6	F	642	963
B - Standing Way (N)	1.20	348.22	207.6	F	1992	2989
C - Shenley Way	1.19	422.17	57.4	F	511	767
D - Standing Way (S)	1.02	74.44	39.0	F	1503	2254

## Main Results for each time segment

## 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	527	132	1288	1113	0.473	523	460	0.0	0.9	6.065	A
B - Standing Way (N)	1635	409	467	2147	0.761	1622	1344	0.0	3.1	6.712	A
C - Shenley Way	420	105	1597	744	0.564	415	492	0.0	1.3	10.764	B
D - Standing Way (S)	1233	308	523	1858	0.663	1225	1489	0.0	1.9	5.620	A

## 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	629	157	1533	953	0.660	625	543	0.9	1.9	10.840	B
B - Standing Way (N)	1952	488	557	2079	0.939	1919	1601	3.1	11.2	19.525	C
C - Shenley Way	501	125	1891	573	0.874	485	586	1.3	5.2	36.058	E
D - Standing Way (S)	1472	368	614	1793	0.821	1463	1762	1.9	4.3	10.617	B

## 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	770	193	1776	795	0.969	734	584	1.9	10.9	44.628	E
B - Standing Way (N)	2391	598	655	2006	1.192	1999	1855	11.2	109.0	115.379	F
C - Shenley Way	614	153	1991	515	1.193	507	663	5.2	32.0	150.961	F
D - Standing Way (S)	1803	451	641	1773	1.017	1719	1857	4.3	25.4	40.764	E

## 17:30 - 17:45

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)		service
A - Fulmer Street	770	193	1805	776	0.993	747	589	10.9	16.6	77.971	F
B - Standing Way (N)	2391	598	666	1997	1.197	1996	1886	109.0	207.6	288.504	F
C - Shenley Way	614	153	1992	514	1.194	513	671	32.0	57.2	328.702	F
D - Standing Way (S)	1803	451	645	1770	1.019	1749	1859	25.4	39.0	74.440	F

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	629	157	1672	863	0.729	684	573	16.6	2.9	25.347	D
B - Standing Way (N)	1952	488	610	2039	0.957	2029	1745	207.6	188.2	348.223	F
C - Shenley Way	501	125	2005	506	0.989	500	634	57.2	57.4	422.165	F
D - Standing Way (S)	1472	368	638	1775	0.829	1607	1867	39.0	5.4	32.468	D

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	527	132	1332	1084	0.486	534	535	2.9	1.0	6.634	A
B - Standing Way (N)	1635	409	476	2140	0.764	2128	1391	188.2	64.8	215.626	F
C - Shenley Way	420	105	2055	477	0.879	469	549	57.4	45.0	394.620	F
D - Standing Way (S)	1233	308	622	1787	0.690	1245	1902	5.4	2.3	6.801	A

# 2033 Base + CD + D - ST, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Fulmer Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	287.89	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	✓	711	100.000
B - Standing Way (N)		ONE HOUR	✓	2236	100.000
C - Shenley Way		ONE HOUR	✓	565	100.000
D - Standing Way (S)		ONE HOUR	✓	1684	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0	168	363	180
	B - Standing Way (N)	197	30	217	1792
	C - Shenley Way	279	198	0	88
	D - Standing Way (S)	151	1438	82	13

### Proportions

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0.00	0.24	0.51	0.25
	B - Standing Way (N)	0.09	0.01	0.10	0.80
	C - Shenley Way	0.49	0.35	0.00	0.16
	D - Standing Way (S)	0.09	0.85	0.05	0.01

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0	1	0	2
	B - Standing Way (N)	0	0	0	2
	C - Shenley Way	1	0	0	0
	D - Standing Way (S)	0	3	2	0

### Average PCU Per Veh

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	1.000	1.007	1.000	1.019
	B - Standing Way (N)	1.000	1.000	1.000	1.021
	C - Shenley Way	1.008	1.000	1.000	1.000
	D - Standing Way (S)	1.000	1.028	1.017	1.000

## Detailed Demand Data

## Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street	16:45-17:00	535	539
	17:00-17:15	639	643
	17:15-17:30	783	788
	17:30-17:45	783	788
	17:45-18:00	639	643
	18:00-18:15	535	539
B - Standing Way (N)	16:45-17:00	1684	1712
	17:00-17:15	2010	2045
	17:15-17:30	2462	2504
	17:30-17:45	2462	2504
	17:45-18:00	2010	2045
	18:00-18:15	1684	1712
C - Shenley Way	16:45-17:00	425	427
	17:00-17:15	508	510
	17:15-17:30	622	625
	17:30-17:45	622	625
	17:45-18:00	508	510
	18:00-18:15	425	427
D - Standing Way (S)	16:45-17:00	1268	1299
	17:00-17:15	1514	1551
	17:15-17:30	1854	1899
	17:30-17:45	1854	1899
	17:45-18:00	1514	1551
	18:00-18:15	1268	1299

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Fulmer Street	1.02	96.81	21.5	F	653	979
B - Standing Way (N)	1.24	441.45	249.9	F	2052	3078
C - Shenley Way	1.23	496.69	67.6	F	518	778
D - Standing Way (S)	1.04	96.02	53.8	F	1545	2317

## Main Results for each time segment

## 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	535	134	1316	1094	0.489	532	467	0.0	0.9	6.355	A
B - Standing Way (N)	1684	421	476	2139	0.787	1669	1371	0.0	3.6	7.453	A
C - Shenley Way	425	106	1651	712	0.597	420	494	0.0	1.4	12.078	B
D - Standing Way (S)	1268	317	524	1857	0.682	1259	1547	0.0	2.1	5.938	A

## 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	639	160	1564	933	0.685	635	546	0.9	2.1	11.883	B
B - Standing Way (N)	2010	503	569	2070	0.971	1960	1630	3.6	16.0	25.581	D
C - Shenley Way	508	127	1942	543	0.935	484	587	1.4	7.5	48.533	E
D - Standing Way (S)	1514	378	608	1797	0.842	1502	1818	2.1	4.9	11.781	B

## 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	783	196	1790	786	0.997	738	580	2.1	13.4	52.219	F
B - Standing Way (N)	2462	616	661	2001	1.231	1997	1867	16.0	132.3	140.367	F
C - Shenley Way	622	156	2003	508	1.226	502	655	7.5	37.4	179.395	F
D - Standing Way (S)	1854	463	627	1783	1.040	1743	1878	4.9	32.6	48.578	E

## 17:30 - 17:45

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)		service
A - Fulmer Street	783	196	1815	769	1.018	750	585	13.4	21.5	96.814	F
B - Standing Way (N)	2462	616	672	1992	1.236	1992	1894	132.3	249.9	348.170	F
C - Shenley Way	622	156	2002	508	1.224	507	662	37.4	66.1	381.976	F
D - Standing Way (S)	1854	463	631	1780	1.041	1769	1878	32.6	53.8	96.019	F

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	639	160	1752	810	0.789	708	578	21.5	4.3	47.336	E
B - Standing Way (N)	2010	503	636	2019	0.996	2010	1824	249.9	249.9	441.451	F
C - Shenley Way	508	127	2008	505	1.006	502	639	66.1	67.6	496.686	F
D - Standing Way (S)	1514	378	628	1782	0.849	1701	1881	53.8	6.9	58.451	F

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Fulmer Street	535	134	1362	1065	0.503	548	532	4.3	1.0	7.141	A
B - Standing Way (N)	1684	421	491	2129	0.791	2120	1420	249.9	140.8	332.533	F
C - Shenley Way	425	106	2063	473	0.900	466	548	67.6	57.5	484.623	F
D - Standing Way (S)	1268	317	609	1796	0.706	1285	1920	6.9	2.5	7.277	A

<b>Junctions 9</b>
<b>ARCADY 9 - Roundabout Module</b>
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Filename: J18 - Windmill Hill Roundabout\_V2.0\_AM.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J18

Report generation date: 26/01/2021 13:17:38

- »2033 Base + CD + D, AM
- »2033 Base + CD + D with TP, AM
- »2033 Base + CD + D - ST, AM

### Summary of junction performance

AM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2033 Base + CD + D</b>					
A - Tattenhoe Street	D15	2.8	13.32	0.74	B
B - A421 Standing Way (N)		55.0	119.81	1.06	F
C - Tattenhoe Lane		23.2	131.76	1.04	F
D - A421 Standing Way (S)		152.6	253.19	1.15	F
<b>2033 Base + CD + D with TP</b>					
A - Tattenhoe Street	D17	2.7	12.98	0.74	B
B - A421 Standing Way (N)		42.2	96.55	1.04	F
C - Tattenhoe Lane		20.4	116.93	1.03	F
D - A421 Standing Way (S)		123.8	189.24	1.12	F
<b>2033 Base + CD + D - ST</b>					
A - Tattenhoe Street	D19	2.9	13.55	0.75	B
B - A421 Standing Way (N)		60.9	130.96	1.07	F
C - Tattenhoe Lane		25.4	141.84	1.05	F
D - A421 Standing Way (S)		165.3	280.88	1.16	F

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

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

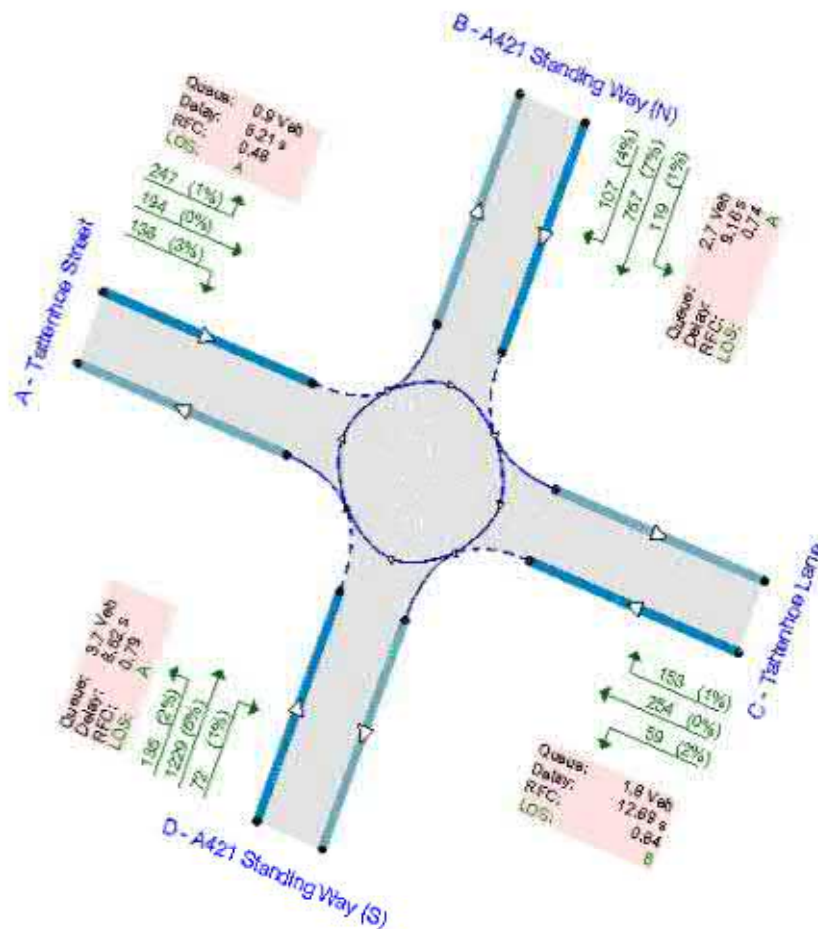
### File summary

#### File Description

Title	Windmill Hill Roundabout
Location	51°59'53.19"N, 0°46'21.08"W
Site number	18
Date	08/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
Description	

### Units

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



The junction diagram reflects the last run of Junctions.

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	✓
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D11	2026 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓

### Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D15,D17,D19	100.000	100.000



# 2033 Base + CD + D, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Tattenhoe Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - A421 Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	163.86	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Tattenhoe Street	
B	A421 Standing Way (N)	
C	Tattenhoe Lane	
D	A421 Standing Way (S)	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Tattenhoe Street	3.20	9.40	59.8	45.4	65.0	8.0	
B - A421 Standing Way (N)	7.40	10.50	29.0	32.5	65.0	13.0	
C - Tattenhoe Lane	2.90	7.00	20.5	33.1	65.0	17.0	
D - A421 Standing Way (S)	7.30	10.50	48.7	43.4	65.0	19.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Tattenhoe Street	Direct	Calibrated against queue length	-85
B - A421 Standing Way (N)	Direct	Calibrated against queue length	-1230
C - Tattenhoe Lane	Direct	Calibrated against queue length	-283
D - A421 Standing Way (S)	Direct	Calibrated against queue length	-645

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Tattenhoe Street	0.708	2542
B - A421 Standing Way (N)	0.792	1941
C - Tattenhoe Lane	0.553	1459
D - A421 Standing Way (S)	0.794	2563

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
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✓	✓	HV Percentages	2.00
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### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street		ONE HOUR	✓	712	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1365	100.000
C - Tattenhoe Lane		ONE HOUR	✓	558	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	2039	100.000

### Origin-Destination Data

#### Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	308	223	179
	B - A421 Standing Way (N)	131	15	136	1083
	C - Tattenhoe Lane	291	175	0	91
	D - A421 Standing Way (S)	170	1775	94	0

### Vehicle Mix

#### Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	1	0	3
	B - A421 Standing Way (N)	4	15	1	7
	C - Tattenhoe Lane	0	1	0	2
	D - A421 Standing Way (S)	2	5	1	0

### Results

#### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Tattenhoe Street	0.74	13.32	2.8	B	654	980
B - A421 Standing Way (N)	1.06	119.81	55.0	F	1253	1879
C - Tattenhoe Lane	1.04	131.76	23.2	F	512	768
D - A421 Standing Way (S)	1.15	253.19	152.6	F	1871	2807

#### Main Results for each time segment

##### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	536	134	1539	1384	0.388	534	444	0.0	0.6	4.224	A
B - A421 Standing Way (N)	1028	257	373	1542	0.667	1020	1700	0.0	2.0	6.800	A
C - Tattenhoe Lane	420	105	1054	832	0.505	416	339	0.0	1.0	8.568	A
D - A421 Standing Way (S)	1535	384	459	2095	0.733	1525	1011	0.0	2.7	6.199	A

##### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	640	160	1830	1171	0.547	638	529	0.6	1.2	6.731	A
B - A421 Standing Way (N)	1227	307	445	1487	0.825	1218	2023	2.0	4.4	12.897	B
C - Tattenhoe Lane	501	125	1258	713	0.704	497	405	1.0	2.2	16.288	C
D - A421 Standing Way (S)	1833	458	547	2027	0.905	1812	1207	2.7	8.0	15.412	C

##### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	784	196	1986	1057	0.742	778	595	1.2	2.7	12.628	B

B - A421 Standing Way (N)	1503	376	531	1423	1.057	1391	2232	4.4	32.3	58.499	F
C - Tattenhoe Lane	614	154	1450	601	1.022	567	473	2.2	14.0	68.839	F
D - A421 Standing Way (S)	2245	561	626	1967	1.142	1955	1392	8.0	80.6	89.535	F

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	784	196	1991	1053	0.745	784	602	2.7	2.8	13.317	B
B - A421 Standing Way (N)	1503	376	535	1420	1.058	1412	2240	32.3	55.0	119.808	F
C - Tattenhoe Lane	614	154	1471	589	1.043	577	477	14.0	23.2	131.758	F
D - A421 Standing Way (S)	2245	561	636	1958	1.147	1957	1412	80.6	152.6	219.560	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	640	160	1983	1059	0.604	645	597	2.8	1.6	8.798	A
B - A421 Standing Way (N)	1227	307	456	1479	0.830	1422	2172	55.0	6.2	74.257	F
C - Tattenhoe Lane	501	125	1445	603	0.831	568	434	23.2	6.7	96.514	F
D - A421 Standing Way (S)	1833	458	629	1964	0.933	1951	1383	152.6	123.1	253.192	F

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	536	134	1997	1048	0.512	538	501	1.6	1.1	7.091	A
B - A421 Standing Way (N)	1028	257	398	1523	0.675	1044	2137	6.2	2.1	7.756	A
C - Tattenhoe Lane	420	105	1077	819	0.513	442	366	6.7	1.1	10.111	B
D - A421 Standing Way (S)	1535	384	483	2076	0.739	2014	1036	123.1	3.4	105.329	F

# 2033 Base + CD + D with TP, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Tattenhoe Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - A421 Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	126.61	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street		ONE HOUR	✓	710	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1337	100.000
C - Tattenhoe Lane		ONE HOUR	✓	555	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1982	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	308	223	177
	B - A421 Standing Way (N)	131	15	136	1055
	C - Tattenhoe Lane	291	175	0	88
	D - A421 Standing Way (S)	168	1722	93	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	1	0	3
	B - A421 Standing Way (N)	4	15	1	7
	C - Tattenhoe Lane	0	1	0	2
	D - A421 Standing Way (S)	2	5	1	0

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Tattenhoe Street	0.74	12.98	2.7	B	652	978
B - A421 Standing Way (N)	1.04	96.55	42.2	F	1227	1840
C - Tattenhoe Lane	1.03	116.93	20.4	F	509	764
D - A421 Standing Way (S)	1.12	189.24	123.8	F	1819	2728

## Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	535	134	1499	1413	0.378	532	442	0.0	0.6	4.076	A
B - A421 Standing Way (N)	1007	252	370	1544	0.652	999	1661	0.0	1.8	6.523	A
C - Tattenhoe Lane	418	104	1032	845	0.494	414	338	0.0	1.0	8.273	A
D - A421 Standing Way (S)	1492	373	459	2095	0.712	1483	987	0.0	2.4	5.788	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	639	160	1786	1204	0.531	636	528	0.6	1.1	6.325	A
B - A421 Standing Way (N)	1202	301	443	1490	0.807	1194	1980	1.8	3.9	11.831	B
C - Tattenhoe Lane	499	125	1233	728	0.685	494	404	1.0	2.1	15.134	C
D - A421 Standing Way (S)	1782	445	548	2026	0.879	1766	1179	2.4	6.5	13.048	B

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	782	196	1975	1065	0.735	776	601	1.1	2.6	12.217	B
B - A421 Standing Way (N)	1472	368	530	1424	1.034	1383	2222	3.9	26.3	50.268	F
C - Tattenhoe Lane	611	153	1438	608	1.005	569	475	2.1	12.5	62.790	F
D - A421 Standing Way (S)	2182	546	632	1962	1.113	1945	1375	6.5	65.9	75.425	F

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	782	196	1985	1058	0.739	782	610	2.6	2.7	12.976	B
B - A421 Standing Way (N)	1472	368	533	1422	1.036	1408	2233	26.3	42.2	96.554	F
C - Tattenhoe Lane	611	153	1462	594	1.029	579	480	12.5	20.4	116.927	F
D - A421 Standing Way (S)	2182	546	643	1953	1.118	1951	1398	65.9	123.8	180.600	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	639	160	1980	1061	0.602	643	596	2.7	1.5	8.713	A
B - A421 Standing Way (N)	1202	301	455	1480	0.812	1351	2168	42.2	4.9	44.909	E
C - Tattenhoe Lane	499	125	1376	644	0.775	564	431	20.4	4.0	60.071	F
D - A421 Standing Way (S)	1782	445	624	1968	0.905	1952	1316	123.8	81.2	189.236	F

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	535	134	1801	1192	0.449	538	480	1.5	0.8	5.524	A
B - A421 Standing Way (N)	1007	252	389	1531	0.658	1018	1950	4.9	2.0	7.185	A
C - Tattenhoe Lane	418	104	1050	835	0.501	430	357	4.0	1.0	9.147	A
D - A421 Standing Way (S)	1492	373	474	2083	0.716	1806	1006	81.2	2.6	35.956	E

# 2033 Base + CD + D - ST, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Tattenhoe Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - A421 Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	180.76	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street		ONE HOUR	✓	715	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1374	100.000
C - Tattenhoe Lane		ONE HOUR	✓	564	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	2062	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	308	226	179
	B - A421 Standing Way (N)	131	15	136	1092
	C - Tattenhoe Lane	294	175	0	94
	D - A421 Standing Way (S)	170	1795	97	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	1	0	3
	B - A421 Standing Way (N)	4	15	1	7
	C - Tattenhoe Lane	0	1	0	2
	D - A421 Standing Way (S)	2	5	1	0

## Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Tattenhoe Street	0.75	13.55	2.9	B	656	985
B - A421 Standing Way (N)	1.07	130.96	60.9	F	1261	1891
C - Tattenhoe Lane	1.05	141.84	25.4	F	517	776
D - A421 Standing Way (S)	1.16	280.88	165.3	F	1892	2839

## Main Results for each time segment

## 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	539	135	1556	1371	0.393	536	446	0.0	0.6	4.297	A
B - A421 Standing Way (N)	1035	259	378	1538	0.672	1027	1715	0.0	2.0	6.929	A
C - Tattenhoe Lane	425	106	1060	828	0.513	420	344	0.0	1.0	8.740	A
D - A421 Standing Way (S)	1553	388	461	2094	0.742	1541	1020	0.0	2.8	6.397	A

## 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	643	161	1848	1158	0.556	641	531	0.6	1.2	6.934	A
B - A421 Standing Way (N)	1235	309	451	1483	0.833	1225	2038	2.0	4.6	13.427	B
C - Tattenhoe Lane	507	127	1266	708	0.716	502	410	1.0	2.4	16.997	C
D - A421 Standing Way (S)	1854	464	550	2025	0.916	1830	1217	2.8	8.9	16.692	C

## 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	788	197	1988	1055	0.747	781	594	1.2	2.8	12.867	B
B - A421 Standing Way (N)	1513	378	537	1418	1.067	1391	2233	4.6	35.2	62.443	F
C - Tattenhoe Lane	621	155	1450	600	1.034	570	477	2.4	15.1	72.723	F
D - A421 Standing Way (S)	2271	568	625	1967	1.154	1957	1396	8.9	87.2	96.101	F

## 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	788	197	1993	1052	0.749	787	601	2.8	2.9	13.546	B
B - A421 Standing Way (N)	1513	378	540	1416	1.069	1410	2240	35.2	60.9	130.956	F
C - Tattenhoe Lane	621	155	1469	589	1.053	580	481	15.1	25.4	141.842	F
D - A421 Standing Way (S)	2271	568	635	1959	1.159	1958	1414	87.2	165.3	236.960	F

## 08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	643	161	1983	1059	0.607	648	598	2.9	1.6	8.875	A
B - A421 Standing Way (N)	1235	309	461	1476	0.837	1449	2171	60.9	7.6	90.006	F
C - Tattenhoe Lane	507	127	1469	589	0.861	569	440	25.4	9.8	120.561	F
D - A421 Standing Way (S)	1854	464	630	1963	0.944	1951	1408	165.3	141.0	280.878	F

## 08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	539	135	2037	1019	0.529	540	511	1.6	1.1	7.553	A
B - A421 Standing Way (N)	1035	259	404	1518	0.681	1056	2173	7.6	2.2	8.142	A
C - Tattenhoe Lane	425	106	1088	812	0.523	459	372	9.8	1.1	11.205	B
D - A421 Standing Way (S)	1553	388	496	2066	0.751	2052	1051	141.0	16.2	141.031	F

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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**Filename:** J18 - Windmill Hill Roundabout\_V2.0\_PM.j9

**Path:** \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Mitigation\J18

**Report generation date:** 26/01/2021 13:15:57

- »2033 Base + CD + D, PM
- »2033 Base + CD + D with TP, PM
- »2033 Base + CD + D - ST, PM

### Summary of junction performance

		PM			
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2033 Base + CD + D</b>					
A - Tattenhoe Street	D16	1.9	8.66	0.66	A
B - A421 Standing Way (N)		121.8	185.35	1.12	F
C - Tattenhoe Lane		44.8	408.84	1.20	F
D - A421 Standing Way (S)		20.2	47.09	0.98	E
<b>2033 Base + CD + D with TP</b>					
A - Tattenhoe Street	D18	1.7	8.09	0.64	A
B - A421 Standing Way (N)		85.3	134.42	1.08	F
C - Tattenhoe Lane		39.7	352.38	1.18	F
D - A421 Standing Way (S)		14.4	35.39	0.95	E
<b>2033 Base + CD + D - ST</b>					
A - Tattenhoe Street	D20	1.9	8.76	0.66	A
B - A421 Standing Way (N)		129.7	196.56	1.13	F
C - Tattenhoe Lane		46.3	424.11	1.20	F
D - A421 Standing Way (S)		21.2	49.01	0.98	E

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

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

### File summary

#### File Description

<b>Title</b>	Windmill Hill Roundabout
<b>Location</b>	51°59'53.19"N, 0°46'21.08"W
<b>Site number</b>	18
<b>Date</b>	08/01/2021
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	Will Forster
<b>Description</b>	

### Units

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



## Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	✓
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D12	2026 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓

## Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D16,D18,D20	100.000	100.000

# 2033 Base + CD + D, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Tattenhoe Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - A421 Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	133.11	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
A	Tattenhoe Street	
B	A421 Standing Way (N)	
C	Tattenhoe Lane	
D	A421 Standing Way (S)	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Tattenhoe Street	3.20	9.40	59.8	45.4	65.0	8.0	
B - A421 Standing Way (N)	7.40	10.50	29.0	32.5	65.0	13.0	
C - Tattenhoe Lane	2.90	7.00	20.5	33.1	65.0	17.0	
D - A421 Standing Way (S)	7.30	10.50	48.7	43.4	65.0	19.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Tattenhoe Street	Direct	Calibrated against queue length	-290
B - A421 Standing Way (N)	Direct	Calibrated against queue length	-800
C - Tattenhoe Lane	Direct	Calibrated against queue length	-285
D - A421 Standing Way (S)	Direct	Calibrated against queue length	-1075

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Tattenhoe Street	0.708	2337
B - A421 Standing Way (N)	0.792	2371
C - Tattenhoe Lane	0.553	1457
D - A421 Standing Way (S)	0.794	2132

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

## Traffic Demand

## Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street		ONE HOUR	✓	715	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1900	100.000
C - Tattenhoe Lane		ONE HOUR	✓	420	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1457	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	255	273	185
	B - A421 Standing Way (N)	213	15	185	1488
	C - Tattenhoe Lane	242	119	0	59
	D - A421 Standing Way (S)	141	1250	66	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	0	0	0
	B - A421 Standing Way (N)	1	0	0	3
	C - Tattenhoe Lane	0	0	0	2
	D - A421 Standing Way (S)	0	3	2	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Tattenhoe Street	0.66	8.66	1.9	A	656	985
B - A421 Standing Way (N)	1.12	185.35	121.8	F	1744	2616
C - Tattenhoe Lane	1.20	408.84	44.8	F	386	578
D - A421 Standing Way (S)	0.98	47.09	20.2	E	1337	2005

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	539	135	1084	1546	0.348	536	447	0.0	0.5	3.557	A
B - A421 Standing Way (N)	1431	358	395	2012	0.711	1421	1226	0.0	2.4	6.000	A
C - Tattenhoe Lane	316	79	1423	649	0.488	313	393	0.0	0.9	10.605	B
D - A421 Standing Way (S)	1097	274	441	1731	0.634	1090	1295	0.0	1.7	5.564	A

#### 17:00 - 17:15

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Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	643	161	1295	1393	0.462	642	531	0.5	0.8	4.785	A
B - A421 Standing Way (N)	1708	427	472	1952	0.875	1693	1464	2.4	6.3	13.181	B
C - Tattenhoe Lane	378	94	1696	495	0.763	370	469	0.9	2.9	27.288	D
D - A421 Standing Way (S)	1310	327	523	1667	0.786	1303	1543	1.7	3.5	9.692	A

## 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	788	197	1528	1223	0.644	784	581	0.8	1.8	8.142	A
B - A421 Standing Way (N)	2092	523	575	1872	1.118	1856	1736	6.3	65.5	78.168	F
C - Tattenhoe Lane	463	116	1881	392	1.181	381	550	2.9	23.2	145.588	F
D - A421 Standing Way (S)	1604	401	553	1644	0.976	1556	1709	3.5	15.5	30.875	D

## 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	788	197	1555	1202	0.655	787	586	1.8	1.9	8.658	A
B - A421 Standing Way (N)	2092	523	579	1869	1.120	1867	1764	65.5	121.8	185.353	F
C - Tattenhoe Lane	463	116	1892	385	1.200	384	554	23.2	42.9	331.417	F
D - A421 Standing Way (S)	1604	401	556	1641	0.977	1586	1719	15.5	20.2	47.092	E

## 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	643	161	1361	1345	0.478	647	565	1.9	0.9	5.186	A
B - A421 Standing Way (N)	1708	427	479	1947	0.878	1931	1529	121.8	66.2	176.421	F
C - Tattenhoe Lane	378	94	1913	373	1.012	370	497	42.9	44.8	408.836	F
D - A421 Standing Way (S)	1310	327	552	1645	0.796	1374	1731	20.2	4.2	16.060	C

## 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	539	135	1149	1500	0.359	540	578	0.9	0.6	3.752	A
B - A421 Standing Way (N)	1431	358	398	2010	0.712	1685	1291	66.2	2.6	24.155	C
C - Tattenhoe Lane	316	79	1663	514	0.616	487	420	44.8	2.1	167.275	F
D - A421 Standing Way (S)	1097	274	623	1590	0.690	1104	1528	4.2	2.3	7.526	A

# 2033 Base + CD + D with TP, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Tattenhoe Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - A421 Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	102.52	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street		ONE HOUR	✓	713	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1834	100.000
C - Tattenhoe Lane		ONE HOUR	✓	419	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1412	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	255	273	183
	B - A421 Standing Way (N)	213	15	185	1422
	C - Tattenhoe Lane	242	119	0	58
	D - A421 Standing Way (S)	139	1210	63	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	0	0	0
	B - A421 Standing Way (N)	1	0	0	3

C - Tattenhoe Lane	0	0	0	2
D - A421 Standing Way (S)	0	3	2	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Tattenhoe Street	0.64	8.09	1.7	A	655	982
B - A421 Standing Way (N)	1.08	134.42	85.3	F	1683	2525
C - Tattenhoe Lane	1.18	352.38	39.7	F	385	577
D - A421 Standing Way (S)	0.95	35.39	14.4	E	1296	1944

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	537	134	1052	1570	0.342	535	445	0.0	0.5	3.471	A
B - A421 Standing Way (N)	1381	345	391	2015	0.685	1372	1196	0.0	2.1	5.532	A
C - Tattenhoe Lane	316	79	1373	678	0.465	312	390	0.0	0.9	9.743	A
D - A421 Standing Way (S)	1063	266	441	1731	0.614	1057	1244	0.0	1.6	5.291	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	641	160	1258	1420	0.452	640	531	0.5	0.8	4.609	A
B - A421 Standing Way (N)	1649	412	468	1955	0.843	1638	1430	2.1	5.0	10.946	B
C - Tattenhoe Lane	377	94	1639	529	0.713	371	467	0.9	2.3	22.090	C
D - A421 Standing Way (S)	1269	317	525	1666	0.762	1263	1485	1.6	3.1	8.807	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	785	196	1495	1247	0.630	782	591	0.8	1.7	7.686	A
B - A421 Standing Way (N)	2020	505	571	1876	1.077	1849	1706	5.0	47.6	60.367	F
C - Tattenhoe Lane	462	115	1866	401	1.151	388	554	2.3	20.8	129.447	F
D - A421 Standing Way (S)	1555	389	566	1634	0.951	1519	1688	3.1	12.0	25.668	D

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	785	196	1518	1230	0.639	785	596	1.7	1.7	8.091	A
B - A421 Standing Way (N)	2020	505	574	1873	1.078	1869	1730	47.6	85.3	134.425	F
C - Tattenhoe Lane	462	115	1885	390	1.182	388	558	20.8	39.1	298.389	F
D - A421 Standing Way (S)	1555	389	569	1632	0.953	1545	1704	12.0	14.4	35.391	E

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	641	160	1305	1385	0.463	645	571	1.7	0.9	4.884	A
B - A421 Standing Way (N)	1649	412	473	1951	0.845	1929	1477	85.3	15.4	97.986	F
C - Tattenhoe Lane	377	94	1902	380	0.991	374	500	39.1	39.7	352.381	F
D - A421 Standing Way (S)	1269	317	564	1636	0.776	1312	1712	14.4	3.6	12.466	B

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
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	(Veh/hr)	(Veh)	(Veh/hr)				(Veh/hr)	(Veh)	(Veh)		service
<b>A - Tattenhoe Street</b>	537	134	1110	1529	0.351	538	545	0.9	0.5	3.640	A
<b>B - A421 Standing Way (N)</b>	1381	345	394	2013	0.686	1434	1254	15.4	2.2	6.780	A
<b>C - Tattenhoe Lane</b>	316	79	1429	647	0.488	470	398	39.7	1.0	48.066	E
<b>D - A421 Standing Way (S)</b>	1063	266	585	1620	0.656	1070	1315	3.6	1.9	6.623	A

# 2033 Base + CD + D - ST, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A - Tattenhoe Street - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - A421 Standing Way (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	140.00	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street		ONE HOUR	✓	716	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1914	100.000
C - Tattenhoe Lane		ONE HOUR	✓	422	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1464	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	255	274	185
	B - A421 Standing Way (N)	213	15	185	1502
	C - Tattenhoe Lane	243	119	0	60
	D - A421 Standing Way (S)	141	1257	66	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	0	0	0
	B - A421 Standing Way (N)	1	0	0	3



C - Tattenhoe Lane	0	0	0	2
D - A421 Standing Way (S)	0	3	2	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Tattenhoe Street	0.66	8.76	1.9	A	657	986
B - A421 Standing Way (N)	1.13	196.56	129.7	F	1757	2635
C - Tattenhoe Lane	1.20	424.11	46.3	F	387	581
D - A421 Standing Way (S)	0.98	49.01	21.2	E	1343	2015

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	539	135	1089	1543	0.350	537	447	0.0	0.5	3.572	A
B - A421 Standing Way (N)	1441	360	396	2011	0.717	1431	1231	0.0	2.5	6.110	A
C - Tattenhoe Lane	318	79	1434	644	0.493	314	393	0.0	1.0	10.785	B
D - A421 Standing Way (S)	1102	276	441	1731	0.637	1095	1306	0.0	1.7	5.606	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	644	161	1301	1389	0.464	643	531	0.5	0.9	4.817	A
B - A421 Standing Way (N)	1721	430	473	1951	0.882	1704	1470	2.5	6.6	13.749	B
C - Tattenhoe Lane	380	95	1708	490	0.775	371	470	1.0	3.0	28.642	D
D - A421 Standing Way (S)	1316	329	523	1667	0.789	1309	1556	1.7	3.6	9.838	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	789	197	1533	1219	0.647	785	579	0.9	1.8	8.228	A
B - A421 Standing Way (N)	2108	527	576	1871	1.127	1856	1742	6.6	69.5	82.183	F
C - Tattenhoe Lane	465	116	1883	392	1.187	382	550	3.0	23.8	149.328	F
D - A421 Standing Way (S)	1612	403	551	1646	0.979	1562	1713	3.6	16.1	31.684	D

#### 17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	789	197	1561	1198	0.658	788	585	1.8	1.9	8.765	A
B - A421 Standing Way (N)	2108	527	580	1868	1.128	1867	1769	69.5	129.7	196.564	F
C - Tattenhoe Lane	465	116	1893	386	1.205	384	554	23.8	44.0	339.213	F
D - A421 Standing Way (S)	1612	403	554	1643	0.981	1592	1723	16.1	21.2	49.015	E

#### 17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Tattenhoe Street	644	161	1370	1338	0.481	648	563	1.9	0.9	5.243	A
B - A421 Standing Way (N)	1721	430	480	1946	0.884	1931	1538	129.7	77.3	193.759	F
C - Tattenhoe Lane	380	95	1914	373	1.017	370	497	44.0	46.3	424.114	F
D - A421 Standing Way (S)	1316	329	549	1647	0.799	1384	1735	21.2	4.2	16.783	C

#### 18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of
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	(Veh/hr)	(Veh)	(Veh/hr)				(Veh/hr)	(Veh)	(Veh)		service
<b>A - Tattenhoe Street</b>	539	135	1151	1499	0.360	541	576	0.9	0.6	3.761	A
<b>B - A421 Standing Way (N)</b>	1441	360	399	2009	0.717	1740	1293	77.3	2.7	35.679	E
<b>C - Tattenhoe Lane</b>	318	79	1713	486	0.654	476	425	46.3	6.7	209.918	F
<b>D - A421 Standing Way (S)</b>	1102	276	617	1595	0.691	1110	1572	4.2	2.3	7.537	A



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