

# **Trustees of the Standen Estate**

## **Land South of Clitheroe**

Environmental Statement  
Volume 2 – Appendix 1.1

October 2012

AMEC Environment & Infrastructure UK Limited

# Appendix 1.1 Transport Assessment

552 Pages

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## **Trustees of The Standen Estate**

# **PROPOSED DEVELOPMENT AT STANDEN ESTATE CLITHEROE**

**Transport Assessment  
A077038**

**October 2012**

**Transport Planning Specialists**



## REPORT CONTROL

**Document:** Transport Assessment

**Project:** Proposed Development at Standen Estate, Clitheroe

**Client:** Trustees of The Standen Estate

**Job Number:** A077038

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### Document Checking:

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Issue	Date	Status	Checked for Issue
1	26 Sep 2012	DRAFT	
2	10 Oct 2012	FINAL	PB / LDR
3			
4			

**Table 5.7: Junction Performance Summary (Highest RFC / Queue)**

Junction	Assessment Scenario	2015				2030			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
A59 / Pendle Road / Clitheroe Road	Base	0.76	3	0.75	3	1.161	32	1.137	30
	Base + Development	0.77	3	0.58	1	0.94	11	0.73	3
A59 / Whalley Road	Base	0.64	2	0.72	2	0.79	4	0.88	7
	Base + Development	0.7	2	0.83	5	0.88	7	1	35
Proposed site access - Pendle Road	Base								
	Base + Development	0.86	6	0.64	2	0.94	12	0.74	3
Waterloo Road / Wellgate	Base	0.26	0	0.48	1	0.39	1	0.77	3
	Base + Development	0.28	0	0.49	1	0.42	1	0.81	4
Shawbridge Street / Taylor Street	Base	0.18	0	0.17	0	0.22	0	0.24	0
	Base + Development	0.32	1	0.26	0	0.37	1	0.32	0
Waterloo Road / Shawbridge Street	Base	0.71	2	0.73	3	0.95	13	1.01	21
	Base + Development	0.95	13	0.90	8	1.22	98	1.25	114
Pendle Road / Goosebutts Lane	Base	0.16	0	0.1	0	0.7	0	0.14	0
	Base + Development	0.26	0	0.12	0	0.33	0	0.16	0
Pendle Road / Hayhurst Street	Base	0.21	0	0.17	0	0.28	0	0.14	0
	Base + Development	0.24	0	0.2	0	0.31	0	0.27	0

5.8.6 This junction would be operating at capacity in 2030 even without the development proposals. The junction assessment forecasts that Shawbridge Street would be operating with an RFC of 1.01 and a corresponding queue of 21 vehicles during the PM Peak hour. The southbound approach of Waterloo Road is also predicted to be approaching capacity during the PM peak hour (RFC of 0.99, queue of 27 vehicles). In the "with development" tests the junction becomes overloaded by 22% i.e. an RFC of 1.22 in the AM peak and by 25% in the PM peak.

5.8.7 At this point of the planning process it is not known whether local Highway Authority and Planning Authority would deem that future level of operation could be acceptable. The NPPF places a test of "severe" as the test of acceptability. When one considers

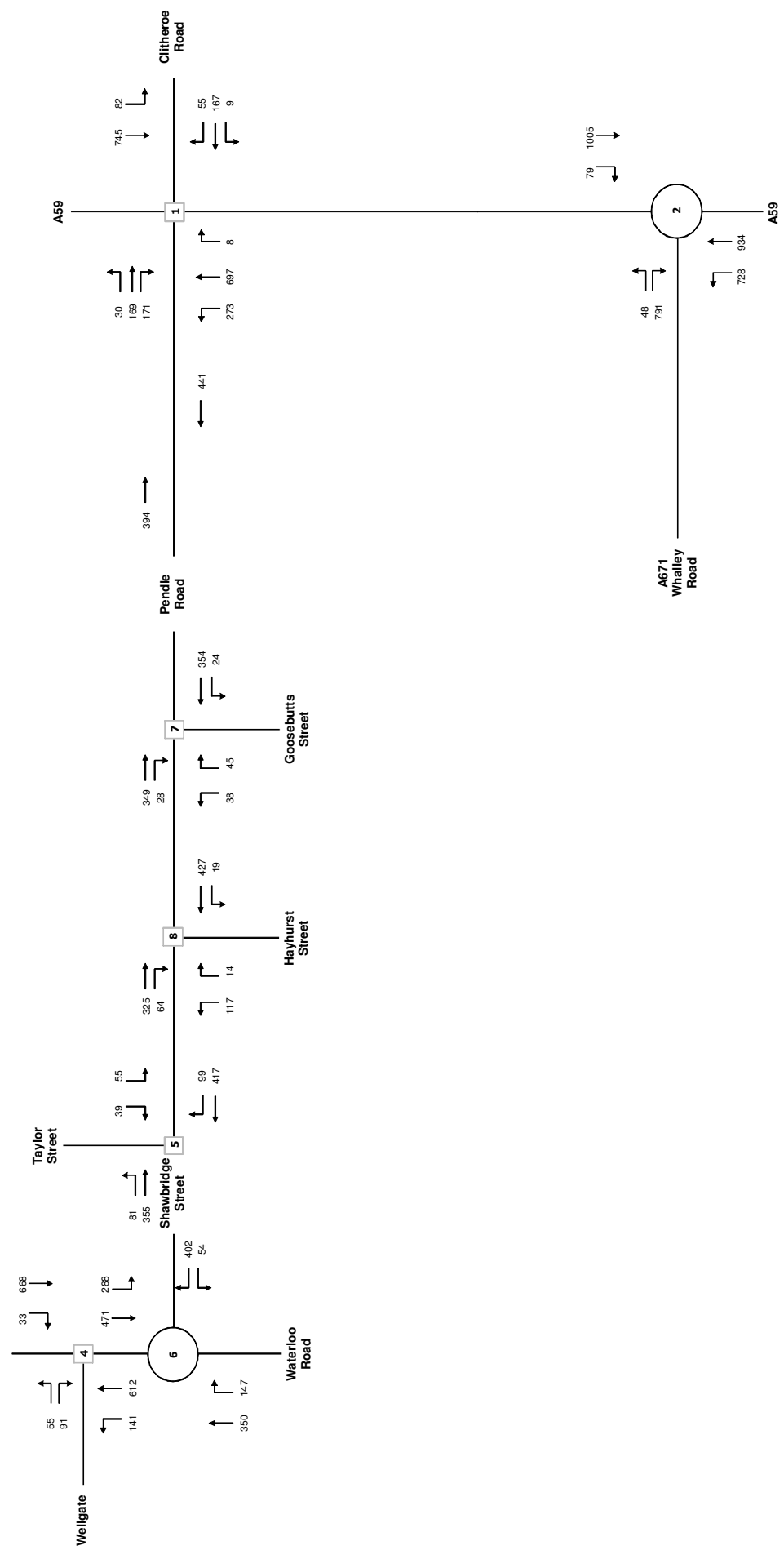
**Table 4.1: Development Traffic Generation – Current Scheme (No discounts)**

Land Use	Time Period	Trip Rate			Vehicles		
		Arrive	Depart	Total	Arrive	Depart	Total
Residential (1040 Units)	0800– 0900	0.148	0.453	0.601	154	471	625
	1700– 1800	0.417	0.214	0.631	434	223	657
	Daily	3.991	3.850	7.841	4151	4004	8155
Employment (5,575 sq m)	0800– 0900	2.313	0.210	2.523	129	12	141
	1700– 1800	0.195	2.012	2.207	11	112	123
	Daily	6.463	6.056	12.519	360	338	698
Primary School (c. 420 Pupils)	0800– 0900	0.358	0.268	0.626	150	113	263
	1700– 1800	0.010	0.026	0.036	4	11	15
	Daily	0.798	0.792	1.590	335	333	668
<b>Total Development</b>	<b>AM Peak</b>				<b>433</b>	<b>596</b>	<b>1029</b>
	<b>PM Peak</b>				<b>449</b>	<b>346</b>	<b>794</b>
	<b>Daily</b>				<b>4846</b>	<b>4675</b>	<b>9521</b>

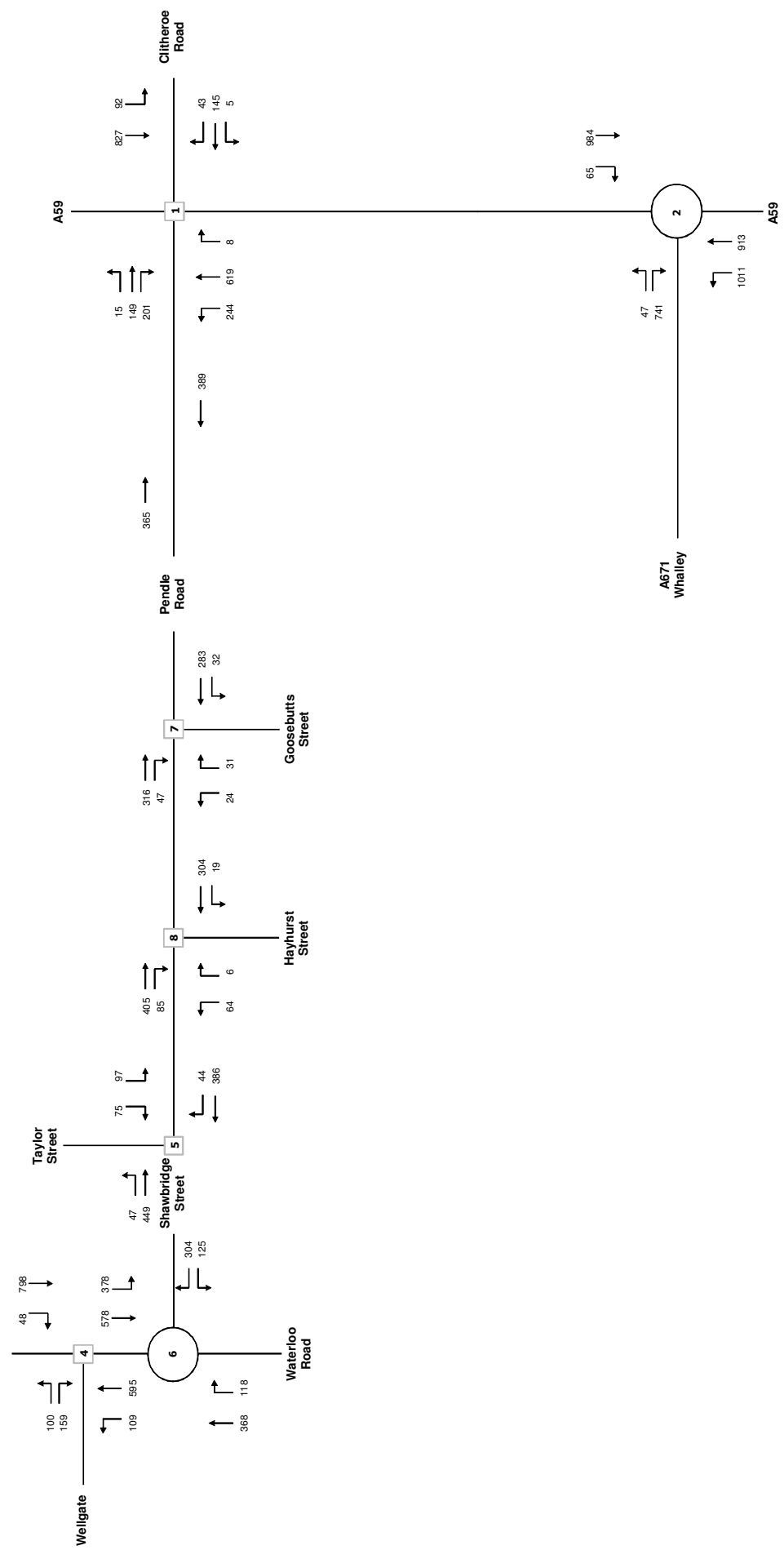
4.5.3 In order to reflect the benefits of the proposed travel plan and the presence of internalised trips (resultant from the proposed mixed land use and scale of proposals), discounts are proposed to the total traffic generation set out in Table 4.1.

4.5.4 The travel plan and internalised trip discounts are set out in Table 4.2. It has been estimated that half of the primary school pupils would originate from within the site with the remaining half originating from the existing residential areas of Clitheroe. That is in line with the EIA which confirms that an additional 1,040 homes could create a demand for about an additional 210 to 280 primary school places.

Table 4.2 also recognises that Travel Plans are generally more effective for employment uses than for residential uses.

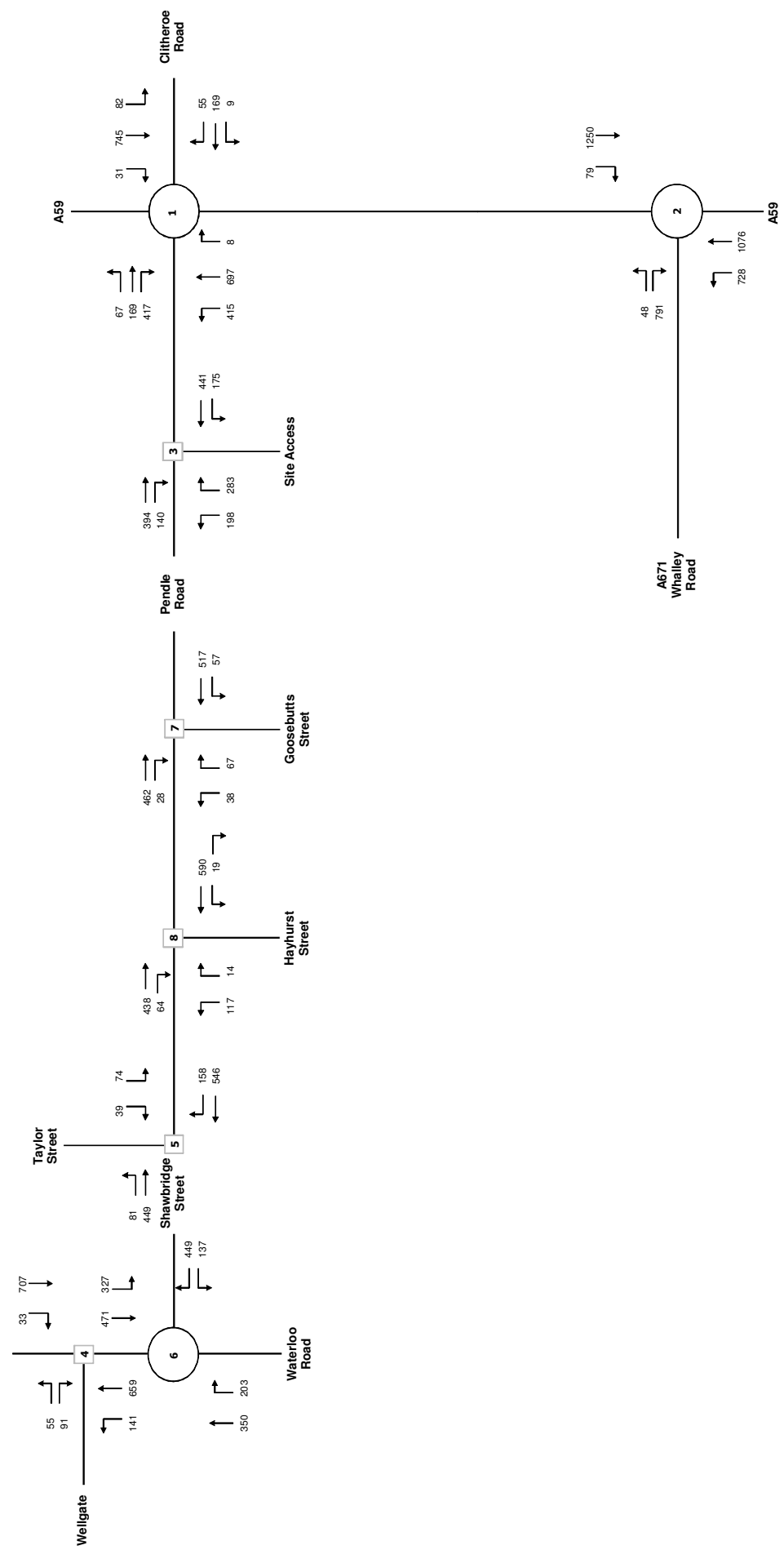


**Fig 13 - 2030 Base Flows AM Peak Period (08:00 - 09:00)**

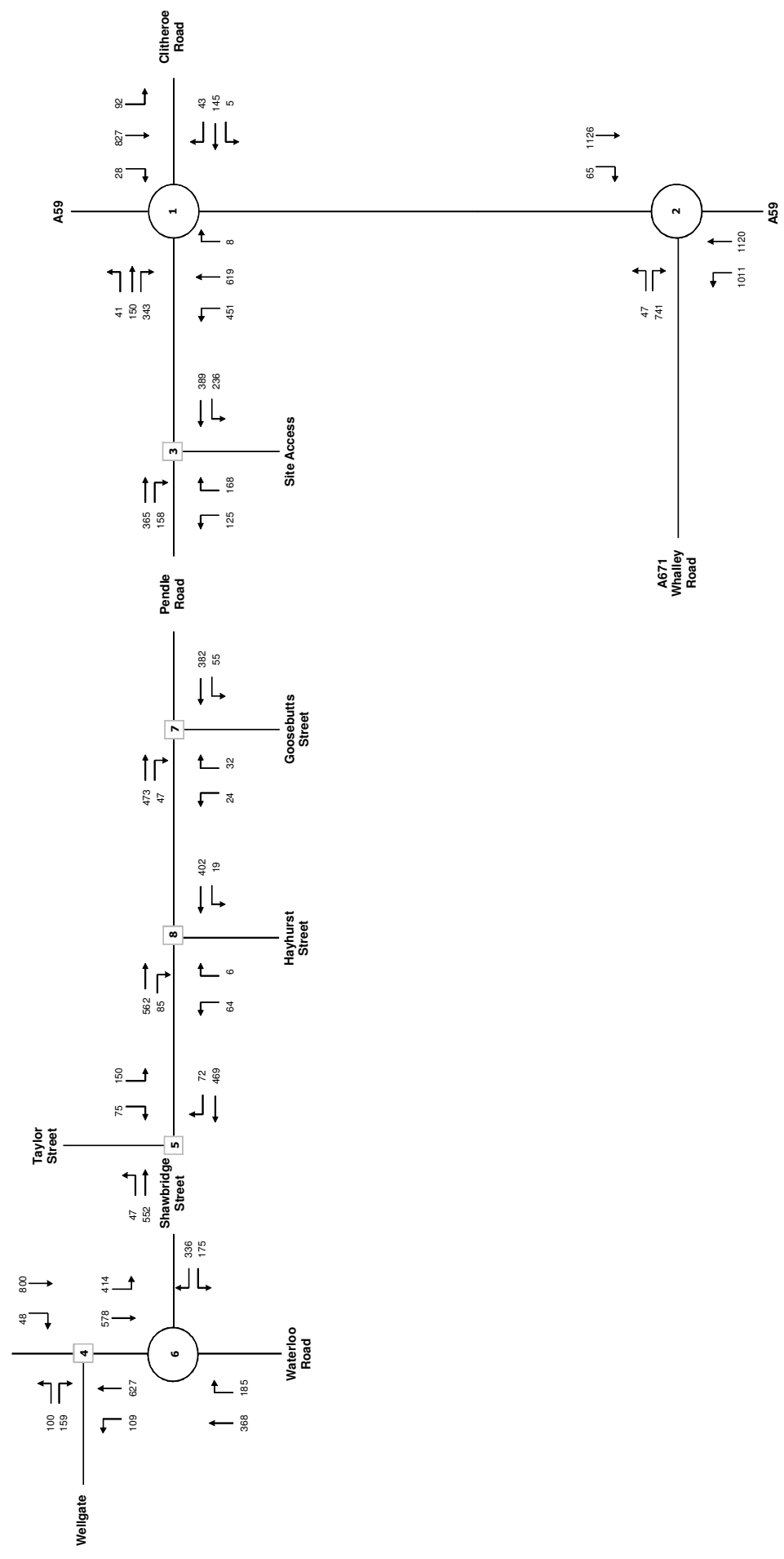


**Fig 14 - 2030 Base Flows  
PM Peak Period (16:30 - 17:30)**





**Fig 25 - 2030 Assessment Flows  
AM Peak Period (08:00 - 09:00)**



**Fig 26 - 2030 Assessment Flows  
PM Peak Period (16:30 - 17:30)**

# ARCADY 7

Version: 7.0.0.99 [10 July 2009]  
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**File:** J:\2012\A077038 Standen Estates\Arcady\Proposed A59\_Pendle Rd\_Clitheroe Rd Rdabt.arc7  
**Report generation date:** 09/10/2012 10:15:47

## A1 - Propose layout - D3 - 2015 Base, AM

### Data Errors and Warnings

Severity	Area	Description
Warning	Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

### Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Propose layout		Yes		(D1)		100.000	100.000	

### Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
2015 Base, AM	2015 Base	AM			Yes			07:45	90	15	ONE HOUR

## Roundabout Network

### Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	(untitled)	1,2,3,4	Standard			

### Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

## Arms

### Arms

ID	Name	Description
1	A59 SB	
2	Clitheroe Road	
3	A59 NB	
4	Pendle Road	

### Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A59 SB	0.00	99999.00		0.00

Clitheroe Road	0.00	999999.00	0.00
A59 NB	0.00	999999.00	0.00
Pendle Road	0.00	999999.00	0.00

### Standard 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
A59 SB	6.10	7.00	7.00	28.50	58.00	26.00	
Clitheroe Road	3.50	4.10	2.00	19.00	58.00	16.50	
A59 NB	6.00	7.00	50.00	30.00	58.00	29.00	
Pendle Road	3.50	4.10	1.00	19.00	58.00	17.50	

### Pedestrian Crossings

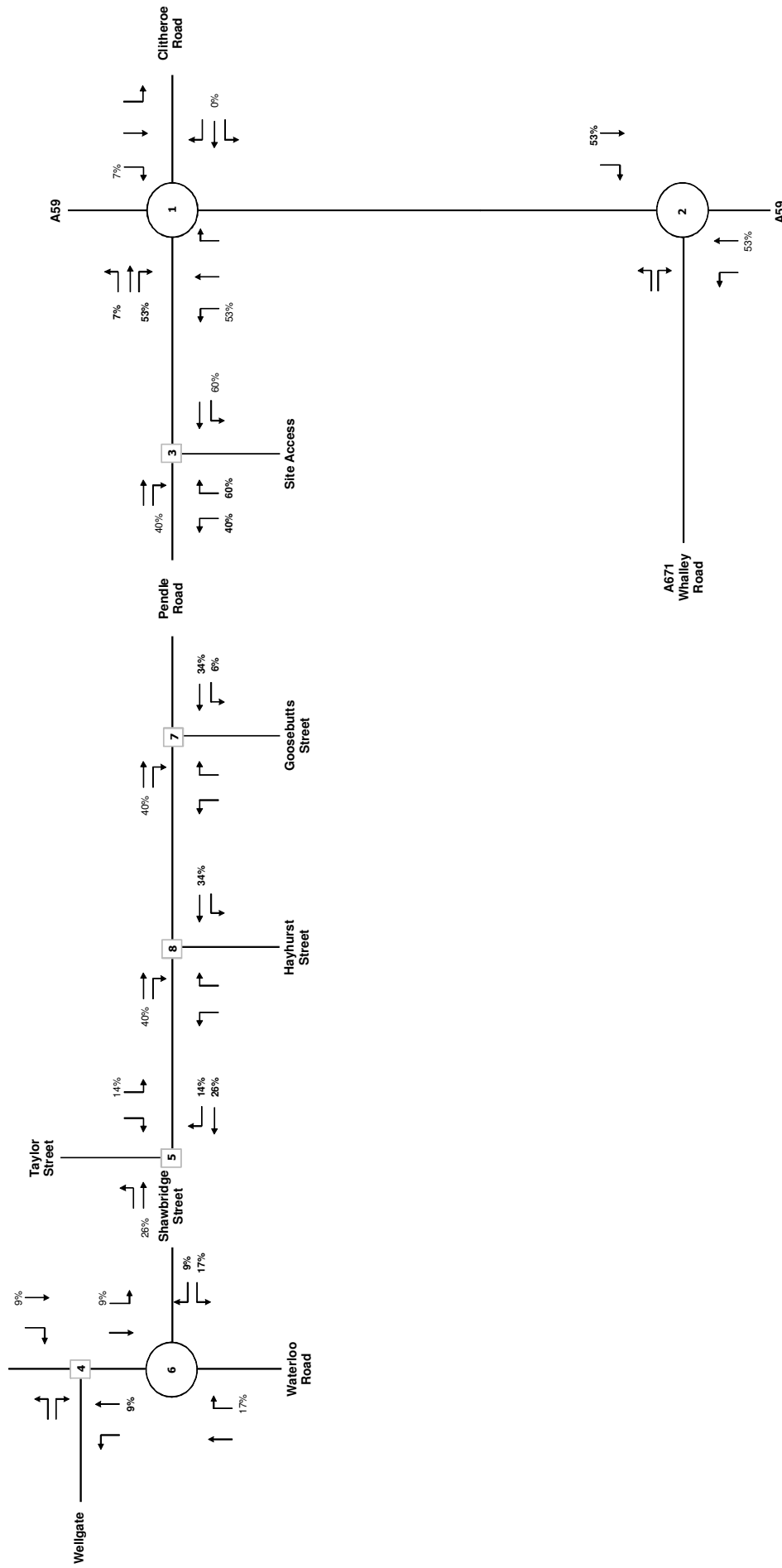
Arm	Crossing Type
A59 SB	None
Clitheroe Road	None
A59 NB	None
Pendle Road	None

### Arm Slope/ Intercept and Capacity

#### Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A59 SB		((calculated))	((calculated))	0.646	2099.618
Clitheroe Road		((calculated))	((calculated))	0.492	1204.311
A59 NB		((calculated))	((calculated))	0.652	2144.346
Pendle Road		((calculated))	((calculated))	0.485	1168.570

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



**Fig 15 - Residential Distribution**