

BECK DEVELOPMENTS LIMITED

PROPOSED RESIDENTIAL DEVELOPMENT, CLITHEROE

320111064P

Transport Assessment

N01951.1

December 2011

Transport Planning Specialists



320111064P

Contents

1	INTRODUCTION	1
1.1	Introduction.....	1
1.2	Pre-Application Discussions and Basis of the Assessment.....	2
1.3	Scope	2
2	TRANSPORT PLANNING POLICY.....	3
2.1	Introduction.....	3
2.2	Planning Policy Guidance Note 13.....	3
2.3	Planning Policy Statement 3.....	5
2.4	Development Plan for Mearley Croft and Primrose Village	6
2.5	Lancashire County Council Local Transport Plan 2011 to 2021	7
2.6	Planning Policy Summaries	9
3	EXISTING SITE INFORMATION	10
3.1	Site Location and Description.....	10
3.2	Site Access and Access Constraints	10
4	BASELINE TRANSPORT DATA	12
4.1	Introduction: Travel Characteristics of the Existing Site	12
4.2	Site Accessibility - Foot.....	12
4.3	Site Accessibility - Cycle	13
4.4	Site Accessibility - Bus.....	14
4.5	Site Accessibility - Rail Network.....	15
4.6	Accident Analysis.....	16
5	DEVELOPMENT PROPOSALS	18
5.1	Description of the Proposed Development.....	18
6	TRAFFIC IMPACT ASSESSMENT	20
6.1	Introduction.....	20
6.2	Traffic Surveys.....	20
6.3	Committed Development Traffic Flows	21
6.4	Traffic Growth.....	21
6.5	Base Flows	22
6.6	Development Trip Generation	22
6.7	Multi Modal Trip Generation	22
6.8	Vehicular Trip Generation.....	25
6.9	Mearley Croft Vehicular Trip Generation	25
6.10	Capacity Assessments	26
6.11	Primrose Village Phase 2 Vehicular Trip Generation	27
6.12	Capacity Assessment Primrose Village Phase 2	28
7	CONCLUSIONS	31



320111064P

Figures

Plans

- | | | |
|--------|---|--|
| Plan 1 | - | Site Location |
| Plan 2 | - | Site Boundaries |
| Plan 3 | - | 2km Walking Catchment |
| Plan 4 | - | 5km Cycling Catchment |
| Plan 5 | - | Mearley Croft Site Layout |
| Plan 6 | - | Primrose Village Phase 2 Site Layout |
| Plan 7 | - | Proposed Junction Improvements at Whalley Road/Primrose Road/Side Road |

Appendices

- | | | |
|------------|---|--------------------------|
| Appendix 1 | - | Accident Data |
| Appendix 2 | - | TEMPRO Output |
| Appendix 3 | - | Multi-modal TRICS Output |
| Appendix 4 | - | PICADY Output |



320111064P

1 INTRODUCTION

1.1 Introduction

- 1.1.1 Savell Bird & Axon have been commissioned by Beck Developments Limited to provide traffic and transport advice in respect of the proposals to redevelop an area of Primrose Village, located in south Clitheroe
- 1.1.2 This hybrid application proposes a total of 113 residential dwellings on 2 separate sites located off Woone Lane.
- 1.1.3 These sites, known as Mearley Croft and Primrose Village Phase 2, form part of a wider residential re-development within Primrose Ward, south Clitheroe.
- 1.1.4 The location of the sites in relation to Clitheroe is shown in Plan 1.
- 1.1.5 This Transport Assessment has been prepared to support a full planning application for the Mearley Croft site and an outline planning application for the Primrose Village Phase 2 site.
- 1.1.6 The current proposal is for a total of 32 residential dwelling units on the Mearley Croft site and 81 residential dwelling units on the Primrose Village Phase 2 site. Both sites will accommodate a variety of house types and sizes.
- 1.1.7 This Transport Assessment therefore provides information on the traffic and transport planning aspects of the development proposals and forms supplementary information to assist in the determination of a planning application.
- 1.1.8 In preparing this report, reference has been made to the Transport Assessment prepared by Waterman Boreham (ref: KY/BD/J/207709) to accompany a planning application for the Primrose Village Phase 1 site, as shown in Plan 2. Relevant information and data within this report has therefore been used and applied to this application.



320111064P

1.2 Pre-Application Discussions and Basis of the Assessment

1.2.1 Pre-application discussions have been undertaken with Lancashire County Council Highways Department with regard to the proposed development. During discussions comments were raised about the potential traffic impact on the local road network and, in particular, attention was drawn to the junction of Whalley Road/Primrose Road/Side Road. Potential improvements to this junction have therefore been discussed with a Highways Officer during both a site visit and a subsequent meeting.

1.2.2 In view of this, a full Transport Assessment has been prepared to accompany the planning application. The scope of this Transport Assessment is discussed in more detail below.

1.3 Scope

1.3.1 This Transport Assessment has been divided into sections that examine both the existing site and the proposed development. Following this Introduction, Section 2 looks at local and national transport policy that relates to the proposed development and its location. Section 3 of the report considers the existing site conditions, detailing the existing site location and highway access, the current site use and the existing access arrangements. Section 4 provides a qualitative description of the existing travel characteristics of the site and provides an analysis of the site's accessibility by non-car modes.

1.3.2 Section 5 provides a detailed description of the development proposals including a description of the proposed access arrangements. Details with regard to the likely forecast person trip generation at the site are discussed in Section 6 and, finally, Section 7 summaries the main conclusions of the report.



2 TRANSPORT PLANNING POLICY

320111064P

2.1 Introduction

2.1.1 This section of the report will summarise the Development Plan for the site. In addition, this section will provide preliminary consideration of providing residential and mixed use development on the site in relation to various planning and policy documents.

2.1.2 This consideration assesses whether the development proposals would be likely to accord with the content of these documents. The documents considered are as follows:

- i) Planning Policy Guidance (PPG) Note 13 'Transport';
- ii) Planning Policy Statement (PPS) Note 3 'Housing';
- iii) The Ribble Valley Districtwide Local Plan, Chapter 5 'Housing'; and Chapter 8 'Transport and Mobility' (adopted in June 1998); and
- iv) Lancashire Local Transport Plan (LTP) 2011 - 2021.

2.1.3 This section highlights the key policies in each of the documents, and considers the compliance of the site in turn to those policies.

2.2 Planning Policy Guidance Note 13

2.2.1 PPG13 'Transport' was amended in November 2010. This document provides advice on how local authorities should integrate transport and land use planning for all types of development.

2.2.2 The key aim of PPG13 is to ensure that local authorities carry out their land use policies and transport programmes in ways which help to:

- Promote more sustainable transport choices for both people and for moving freight;
- Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling; and
- Reduce the need to travel, especially by car.

320111064P



- 2.2.3 Consideration of PPG13 is fundamental to development proposals and lies at the core of the government's commitments in the sustainable development strategy to reduce the need to travel with the aim of reducing overall the environmental impacts of transport.
- 2.2.4 In order to deliver the objectives of this guidance, when preparing development plans and considering planning applications, local authorities should, amongst other things:
- i) Actively manage the pattern of urban growth to make the fullest use of public transport, and focus major generators of travel demand in city, town or district centres and near to major public transport interchanges.
 - ii) Locate local and day-to-day facilities, which need to be near their clients in local centres so that they are accessible by walking and cycling.
 - iii) Accommodate housing principally within existing urban areas, planning for increased intensity of development for both housing and other uses at locations which are highly accessible by public transport, walking and cycling.
- 2.2.5 Paragraph 14 states that in identifying sites to be allocated for housing in local plans and UDP's, local planning authorities should:
- 'Follow a search sequence, starting with the re-use of previously developed land and building within urban areas, then urban extensions, and finally new development around nodes in good public transport corridors.'*
- 2.2.6 A key planning objective of PPG13 is to ensure that jobs, shopping, leisure and services are all highly accessible by public transport, walking and cycling.
- 2.2.7 This is important for all, but especially for those who do not have regular use of a car, and to promote social inclusion.
- 2.2.8 In preparing their development plans, local authorities should give particular emphasis to accessibility in identifying the preferred areas and sites where such land uses should be located, to ensure they will offer realistic, safe and easy access by a range of transport modes, and not exclusively by car.



2.2.9 With respect to public transport accessibility, paragraph 72 of the PPG13 states that:

'The likely availability and use of public transport is a very important ingredient in determining locational policies designed to reduce the need to travel by car.'

2.2.10 In terms of walking the PPG13 states that:

'Walking is the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly under 2 kilometres. Walking also forms an often forgotten part of all longer journeys by public transport and cars.'

2.2.11 In addition to walking, PPG13 states that;

"Cycling has the potential to substitute for short car trips, particularly those less than 5 kilometres, and to form part of a longer journey by public transport".

2.2.12 PPG13 also recognises that the likely availability and use of public transport is a very important ingredient in determining locational policies designed to reduce the need for travel by car. The aim should be to establish a high quality, safe, secure and reliable network of routes, with good interchanges, which matches the pattern of travel demand in order to maximise the potential usage of public transport.

2.3 Planning Policy Statement 3

2.3.1 PPS3 provides guidance on a range of issues relating to the provision of housing. A revised version was published in June 2010.

2.3.2 The overall focus of PPS3 is explicitly stated as being to promote more sustainable patterns of development through a new more responsive approach to land supply at the local level.

2.3.3 PPS3 identifies a tiered approach to implementation in relation to new housing. For example guidance is provided on the internal design of new estates that are intended to place the needs of people before ease of traffic movement.

2.3.4 Access to public transport and other sustainable modes of travel are a key element to the PPS3 document to ensure a wide choice of travel modes to residents in new developments.



320111064P

2.3.5 At a strategic level, the Government's key housing policy goal is to ensure that everyone has the opportunity of living in a decent home, which they can afford, in a community where they want to live. In order to achieve this goal the housing policy objectives include:

- To achieve a wide choice of high quality homes, both affordable and market housing, to address the requirements of the community;
- To improve affordability across the market, including by increasing the supply of housing; and
- To create sustainable, inclusive, mixed communities in all areas, both rural and urban.

2.3.6 At paragraph 37, PPS3 identifies the need to link development to public transport and take into account, amongst other things;

'The availability and capacity of, and accessibility to, existing major strategic infrastructure, including public and other transport services, and/or feasibility of delivering the required level of new infrastructure to support the proposed distribution of development.'

2.3.7 The proposed development will also be in line with the above policies by providing a high standard of housing, which will be well designed and affordable.

2.3.8 The development will comply with the key housing policy objectives by providing quality housing in a suitable location which offers a good range of community facilities and with good access to jobs, key services and infrastructure.

2.4 Development Plan for Mearley Croft and Primrose Village

2.4.1 The Development Plan for the site comprises the Regional Spatial Strategy for the North West (RS) and the 'saved' policies of the Ribble Valley Districtwide Local Plan (RVLP) adopted in 1998.



320111064P

North West (RS)

- 2.4.2 Of the policies contained within the North West (RS) the relevant policies are DP5, RT2 and RT9, of which DP5 and RT2 refer to 'managing travel demand', and RT2 refers to walking and cycling and the need for development to provide integrated networks for these modes of travel.

Ribble Valley Local Plan

- 2.4.3 Relevant saved policies from the 1998 Local Plan include H19 (Developments in Settlements and Allocated Sites), and T1 (Transport Development Proposals). Other policies of relevance are Policies T12 and T15 as outlined below.
- 2.4.4 Policy T12 and T15 of the Local Plan refers to sustainable transport modes, namely Cycling and Pedestrians. Outside of this application, agreement has been met with the local council to provide footways within the vicinity of the site to provide pedestrians with a continuous network of footways along Woone Lane, creating an extension to existing footways in the area. Cycle links on a development site located adjacent to the proposed Primrose Village Phase 2 site have been incorporated into the site design and it is proposed that these will link into the proposed Primrose Village Phase 2.

2.5 Lancashire County Council Local Transport Plan 2011 to 2021

- 2.5.1 This document is Lancashire's third Local Transport Plan. It sets out the plans for transport in the County for the years 2011 to 2021; the plan has been developed to contribute to achievement of the Council's long term vision.
- 2.5.2 The Third Transport Plan has involved Local Strategic Partnerships and District Councils to develop local programmes that will bring improvements to the problems which have been identified locally. The plan aims to contribute to national and regional strategies.
- 2.5.3 The Plan aims to meet the wider social and economic objectives of the County Council and in particular the aim to make Lancashire a place where people can travel safely and easily.



320111064P

2.5.4 The Plan therefore has seven key objectives, these are to;

- Improve access into area of economic growth and regeneration;
- Provide better access to education and employment;
- Improve peoples quality of life and well being;
- Improve safety of our street for our most vulnerable residents;
- Reduce carbon emissions and its effects;
- Providing safe, reliable, convenient and affordable transport alternative to the car;
and
- Maintain our assets.

2.5.5 The plan has been developed to make a significant contribution to LCC's corporate aims and objectives, particularly through the development of the accessibility strategy. Good accessibility plays a crucial role in modern society.

2.5.6 It is essential to the quality of life and prosperity of a community and makes sure that everyone in society can get to work, have a good education, quality healthcare and affordable healthy food, the four essential services identified by the Social Exclusion Unit.

2.5.7 In light of the above, a number of transport improvements are identified within the LTP and these are discussed below:

Transport and Highways

2.5.8 Due to the high levels of car ownership in the Ribble Valley, the main focus of the transport plan for the area is to encourage residents to travel by public transport, rather than private vehicle.

2.5.9 Lancashire County Council are proposing to invest £21.86 million on highways and transport services in the Ribble Valley to ensure that residents without access to a car have access to employment areas, and that rural isolation is tackled.



320111064P

- 2.5.10 Providing a reliable and accessible public transport service is therefore vital in achieving these targets and, by way of achieving these, LCC propose to provide regular services and innovative solutions. These include enhancing rail services to local stations and improving connectivity with local bus services. There are also proposals to provide smartcard travel schemes, with the aim of making it easier to combined travel by bus and rail services.
- 2.5.11 Also, over the duration of the Plan, LCC propose to increase road safety in residential areas and around schools by reducing the speed limit to 20mph.
- 2.5.12 Initiatives like these, and improvements to public transport, will be brought about through promoting sustainable travel, information and travel planning.

2.6 Planning Policy Summaries

- 2.6.1 Reference to national guidance contained within PPG13 and PPS3 has helped to establish that the site is well related to the surrounding area and will contribute towards the creation of a mixed and balanced community. The review of both National and Local policy has shown that the proposals conform to the aims and aspirations of the Council and will assist in delivering the policies contained within.
- 2.6.2 The current plan seeks to ensure access to all road users including pedestrians and cyclists as well as delivering a scheme that allows the promotion of travel by public transport, both by bus and rail, to result in an encompassing strategy to provide a high quality development whilst not compromising a high level of sustainability.
- 2.6.3 The proposals will accord with the development plan and national guidance.
- 2.6.4 The review of the Lancashire County Council Local Transport Plan has demonstrated that the development proposals are in line with the main aims and aspirations of the wider and economic objectives of the County Council.

320111064P



3 EXISTING SITE INFORMATION

3.1 Site Location and Description

- 3.1.1 Plan 2 illustrates the location of the sites considered within the Transport Assessment, namely Mearley Croft and Primrose Village Phase 2. These sites are located on Woone Lane, within an existing residential area. The sites are located in south Clitheroe, within Primrose Ward, approximately 1km to the south west of Clitheroe town centre.
- 3.1.2 Within the vicinity of the site, there are convenience stores and a hairdressers located on Woone Lane and Eshton Terrace, respectively, as well as a Honda car dealership and St James C of E Primary School, both of which are located on Greenacre Street.
- 3.1.3 The Mearley Croft site is located adjacent to existing residential development, to the east of Woone Lane approximately 260m south of its junction with Eshton Terrace. The site has direct frontage onto Woone Lane and extends around existing residential developments, bordering a short residential access road that lies parallel with Woone Lane to the west of the site, and Mearley Brook to the east.
- 3.1.4 The Primrose Village Phase 2 site is located approximately 400m south of the Mearley Croft site. This site is located to the south of Primrose Village Phase 1 and the Contour-Housing site and is bound to the west by a railway line.

3.2 Site Access and Access Constraints

- 3.2.1 Woone Lane is orientated in a north/ south direction past the site. To the north, Woone Lane meets Eshton Terrace at a crossroads junction. Greenacre Street, which forms the easterly arm of this junction, operates to one-way traffic only, permitting access from Queensway, which is located approximately 150m to the east. To the west of this junction, Eshton Terrace provides access to residential streets, before eventually joining Bawdlands (B6243).
- 3.2.2 To the south of Woone Lane, a sharp eastern bend marks the start of Primrose Road. Approximately 30m north of this bend marks the access to Primrose Village Phase 1, which forms a T-junction to Woone Lane.

320111064P



- 3.2.3 Primrose Road is orientated in an approximate east/ west alignment, from which access to residential properties can be gained. Primrose Road meets Whalley Road (A671) at a priority controlled staggered junction. The third arm of this stagger is formed by an access to Brian Dent Limited.
- 3.2.4 Whalley Road (A671) provides access into Clitheroe town centre to the north, and the A59 to the south, which in turn provides access towards Blackburn.
- 3.2.5 A 30mph speed limit is imposed on all roads within the vicinity of the site.



320111064P

4 BASELINE TRANSPORT DATA

4.1 Introduction: Travel Characteristics of the Existing Site

4.1.1 A key element of PPG13 is to ensure that the development is accessible by modes of transport other than the private car. In this regard, the accessibility of the proposed development by the following modes of transport has been considered:

- accessibility on foot;
- accessibility by cycle;
- accessibility by public transport.

4.2 Site Accessibility - Foot

4.2.1 PPG13 states that walking is the 'most important mode of travel at the local level and offers the greatest potential to replace short car journeys, particularly under 2 kilometres'. A plan of the 2 kilometre pedestrian catchment from the site is provided at Plan 3.

4.2.2 As shown at Plan 3, the 2 kilometres catchment encompasses the majority of Clitheroe, including its town centre and residential areas to the north and east of the site. To the west a 2km catchment reaches up to Low Moor, whilst to the south of the site, a large area rural catchment is included.

4.2.3 Existing footways are of a good width and standard. There are footways on both sides of Woone Lane, up to Victoria Street. These continue north to provide a continuous network of footways to surrounding residential areas.

4.2.4 South of Victoria Street, there is a footway present on the western side of Woone Lane adjacent to residential properties. This continues along the entire length of Woone Lane and continues onto Primrose Lane where it borders the southern side of the carriageway.

4.2.5 Where Woone Lane meets Primrose Road, a public footpath passes to the south east of the Primrose Village Phase 2 site. This footpath continues south linking to Great Mitton.



320111064P

- 4.2.6 In addition, pedestrian links have been incorporated into the site design of Primrose Village Phase 1, to enable pedestrian access to Woone Lane, separate to vehicular access points.
- 4.2.7 Street lighting is provided along all roads within the vicinity of the site, aiding pedestrian security and promoting road safety. Dropped kerbs are provided at all junctions for pedestrians.
- 4.2.8 A number of bus stops are located along Whalley Road and Victoria Street, which are within easy walking distance of the site. Bus stops located on Victoria Street are accessible within 40m walking distance of the Mearley Croft site. Bus stops are also located on Whalley Road.
- 4.2.9 In conclusion, the development site is located such that it facilitates journeys to the site on foot.

4.3 Site Accessibility - Cycle

- 4.3.1 PPG13 states that cycling has the '*potential to replace short car journeys, particularly those under 5 kilometres*'. This would equate to a journey of around 25 minutes using a leisurely cycle speed of 12 kilometres per hour. The 5 kilometre cycle catchment is provided at Plan 4.
- 4.3.2 As shown at Plan 4, the 5 kilometre catchment encompasses the entire town of Clitheroe stretching to include some residential properties in Chatburn, West Bradford and Waddington to the north of the site and Great Mitton, and Wiswell to the south of the site.
- 4.3.3 The residential nature of Primrose Ward, and the low speeds and residential routes within the proximity of the site, help to promote cycling as a mode of transport.
- 4.3.4 Within the wider area of Clitheroe there are two Regional Cycle Routes (RCR) that make up the Lancashire Cycleway. RCR 90 passes to the north of Clitheroe, whilst RCR 91 passess to the south. These are circular routes that are mainly on road, with some traffic free sections. Departures from the route along local roads enable access to these routes from Clitheroe.



4.3.5 Clitheroe railway station is within a 5km cycling catchment from the site. It is possible therefore that journeys from the site can be carried out by combining modes of travel such as bicycles and trains.

4.3.6 The residential location of the site lends itself to cycling being of gentle gradients, and lightly trafficked residential streets. In conclusion therefore the site is accessible by bicycle.

4.4 Site Accessibility - Bus

4.4.1 There are several bus stops located within the vicinity of the site along Whalley Road and Victoria Street. These stops are accessible from both sites considered within this report.

4.4.2 The Clitheroe Circular operates from bus stops on Victoria Street. This service operates Monday-Saturday on a circular route around Clitheroe, passing through the residential areas of Primrose, Peels Park and Henthorn. The service, which operates at an hourly frequency, is run on behalf of Lancashire County Council by two independent bus operators.

4.4.3 The Clitheroe Circular and other services that operate from bus stops along Whalley Road, are shown in Table 4.1 below.

320111064P



Service No	Route	Mon – Fri Frequency per hour				Sat	Sun
		AM Peak	Midday	PM Peak	Evening		
C1	Clitheroe Circular	0	1	0	0	1	0
5	Clitheroe-Whalley-Ribchester-londridge	0	4 jnys	0	0	7 jnys	0
26/27	Clitheroe-Whalley-Read-Padiham-Burnley	1	2	2	1	2	1
X80/280	Preston-Clitheroe-Gisburn-Skipton	2	1	1 (one way)	1 jny	13 jnys	10 jnys
225	Clitheroe-Blackburn-Bolton	1	1	1	1	1	10 jnys
231	Clitheroe-Whalley-Accrington	1	5 jnys	0	0	6 jnys	0
241	Clitheroe- Accrington-Royal Blackburn Hospital	0	1	1	0	5 jnys	0

Table 4.1 Bus Services Operating from Whalley Road and Victoria Street

4.4.4 As can be seen from Tables 4.1, there are a number of services operating along Whalley Road, throughout the week and during weekends that provide connections into Clitheroe town and the surrounding residential areas, as well as to areas surrounding Clitheroe, including Blackburn, Bolton, Accrington, and Burnley.

4.4.5 In conclusion, bus services accessible from the site operate through the weekday and during the weekend enabling residents and visitors to access the site.

4.4.6 It is concluded that the site can be considered well served by public transport.

4.5 Site Accessibility - Rail Network

4.5.1 The nearest railway station is Clitheroe, which is located approximately 1km from the site.

4.5.2 Clitheroe railway station is operated by Northern Rail. Services from Clitheroe operate between Clitheroe, Blackburn and Manchester.



- 4.5.3 Whilst the distance to the railway station slightly exceeds the preferred 800m walking distance, it is considered that the station would, nevertheless, be accessed by pedestrians.
- 4.5.4 In addition, the station is within cycling distance of the site. Northern Rail provided a number of cycle lockers at the station, facilitating its access by bicycle, whilst they also permit travel for up to 2 bicycle on all of there services.
- 4.5.5 An interchange at the railway station also makes it possible for those travelling by bus to access the railway station. Service number X80 and 280, which operate past the site from Whalley Road, also travel to the railway station. It is therefore possible for journeys to the railway station to be carried out by a variety of modes.
- 4.5.6 Train services from Clitheroe operate hourly throughout the day and during the morning and evening peak, Monday to Sunday, providing a connection to Manchester, Blackburn, and Preston. Journey duration between Manchester and Clitheroe is approximately 1 hour and 40 minutes.

4.6 Accident Analysis

- 4.6.1 Collision data relating to the latest information available has been obtained from Lancashire County Council's MARIO (Maps and Related Information Online) website. MARIO is an interactive online mapping system that provides information on a variety of categories including collision data.
- 4.6.2 Data from MARIO has been collected for the following locations, with the full output being provided at Appendix 1:
- the junction of Woone Lane/Eshton Terrace/Greenacre Street,
 - Woone Lane/Primrose Road, and
 - Whalley Road/Primrose Road/Side Road.



320111064P

Woone Lane/Eshton Terrace/Greenacre Street

- 4.6.3 Data at the cross road junction of Woone Lane/Eshton Terrace/Greenacre Street was collected including, collisions that have been recorded within approximately 30m of the junction.
- 4.6.4 In total 4 collisions have been recorded at this junction and within its vicinity. Of these, a total of 3 have been categorised as slight collisions and 1 has been a serious collision.
- 4.6.5 Of those collisions recorded in this area, one was recorded in 2006, two in 2007 and one in 2009.

Woone Lane/Primrose Road

- 4.6.6 Collision data was also collected from Woone Lane and Primrose Road. In total, two collisions have been recorded in this study area, both of which have occurred on Woone Lane. There have been no collisions recorded on Primrose Road.
- 4.6.7 Both collisions that were recorded occurred in 2009. Slight injuries were sustained in both occurrences.

Whalley Road/Primrose Road

- 4.6.8 The latest collision data illustrates that there have been no collisions recorded at this junction.



320111064P

5 DEVELOPMENT PROPOSALS

5.1 Description of the Proposed Development

- 5.1.1 It is proposed to develop residential dwellings on two sites located on Woone Lane. The first site, referred to as Mearley Croft, is located approximately 260m south of the Woone Lane/Greenacre Street/Eshton Terrace junction. The proposed layout of the Mearley Croft site is shown at Plan 5.
- 5.1.2 The second site is known as Primrose Village Phase 2 and is located approximately 400m south of Mearley Croft and adjacent to a recent development known as Primrose Village Phase 1. The proposed layout of the Primrose Village Phase 2 site is shown at Plan 6.
- 5.1.3 The development will form part of a phased scheme with properties on Mearley Brook being constructed first. In total, 32 properties are proposed on this site. These consist of a variety of housing types as set out on Table 5.1 below. All housing developed on Mearley Croft will be affordable/ social housing.

Number	Housing Description
10	2 bed apartments
4	2 bed bungalow
8	2 bed houses (3 person)
2	2 bed houses (4 person)
5	3 bed houses (4 person)
3	3 bed houses (5 person)

Table 5.1 Accommodation Schedule at Mearley Croft

- 5.1.4 Site access to Mearley Croft will be taken directly from Woone Lane forming a staggered junction with Victoria Street. Within the site, the residential access road will be approximately 5.5m and will form a cul-de-sac.
- 5.1.5 Pedestrian footways from Woone Lane will continue into the site to provide pedestrians with a continuous footway network into the site. Street lighting will also be provided to aid in pedestrian safety and security.



320111064P

- 5.1.6 Within the vicinity of the site, Woone Lane is approximately 6.5m wide, with good visibility. It has a speed limit of 30mph and sightlines of 2.4m x 43m will be provided at the proposed site access junction.
- 5.1.7 The second phase of development will be at the Primrose Village Phase 2 site. A total of 81 properties are proposed to be constructed on this site. These will be a mix of development types as set out in Table 5.2 below.

Number	Housing Description
1	2 bed duplex
20	3 bed mews
23	3 bed townhouse
6	3 bed detached
31	4 bed detached

Table 5.2 Accommodation Schedule at Primrose Village Phase 2

- 5.1.8 This shows the site linking through to an adjacent site Primrose Village Phase 1 Site. Linking through to this site the main access forms a cul-de-sac with 2 additional, short cul-de-sac roads penetrating into housing development.
- 5.1.9 Pedestrian footways will link through to the site from the adjacent site providing a continuous network of footways through the site, and to the existing access that forms part of the Phase 1 development and Woone Lane. Street lighting will be provided within the site facilitating its connectivity to the neighbouring phase 1 site and to Woone Lane.
- 5.1.10 In view of the Phase 2 development proposals, improvements to the Whalley Road/Primrose Road/Site Access junction are proposed.



320111064P

6 TRAFFIC IMPACT ASSESSMENT

6.1 Introduction

- 6.1.1 Having established that the proposed development site is highly accessible by modes of transport other than the private car and would be in general accordance with land use and transport policies, the following section of the report considers the traffic impact of the development proposals on the local highway network.

6.2 Traffic Surveys

- 6.2.1 Before considering the potential changes in traffic that would occur on the local highway as a result of development proposals the existing levels of traffic on the highway network in the vicinity of the site must first be established.
- 6.2.2 In this regard, traffic survey data has been extracted from a Waterman Boreham Transport Assessment, submitted in June 2008 (ref: KY/BD/J/207709).
- 6.2.3 Full classified turning counts were carried out on Thursday 3rd April 2008 for the time periods 0730-0930 and 1600-1800, for all movements at the following junctions:
- Woone Lane/Site Access of Primrose Village Phase 1
 - Eshton Terrace/Woone Lane/Greenacre Street
 - Whalley Road/Primrose Road
- 6.2.4 Analysis of the traffic survey data indicates that the weekday AM peak occurred between 0830 and 0930 hours, whilst the PM peak occurred between 1700 and 1800 hours.
- 6.2.5 Figure 1 and Figure 2 provide the weekday AM and PM peak 2008 surveyed traffic flows respectively. Figure 3 and Figure 4 demonstrate the respective AM and PM Peak flows in PCUs.



320111064P

6.3 Committed Development Traffic Flows

- 6.3.1 Traffic associated with committed development in the local area has been considered in the preparation of this assessment.
- 6.3.2 Committed development in the area is associated directly with traffic generated by Primrose Village Phase 1 site, which was granted approval for 54 apartments and 116 houses.
- 6.3.3 Vehicle trip rates and the associated vehicle trip generation are shown in Table 6.1, below. These have been extracted from Table 4.3 of the Waterman Boreham Transport Assessment.

	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
Vehicle Trip Rates, Apartments (per dwelling)	0.103	0.344	0.447	0.344	0.138	0.481
Vehicle Trips (for 54 dwellings)	5	19	24	19	7	26
Vehicle Trip Rates, Houses (per dwelling)	0.140	0.516	0.656	0.519	0.259	0.778
Vehicle Trips (for 116 dwelling)	16	60	76	60	30	90
TOTAL	21	79	100	79	37	116

Table 6.1 Vehicle Trip Rates and Associated Vehicle Trips for Committed Development

- 6.3.4 Figure 5 and Figure 6 show the committed development trips during the AM and PM peak periods respectively.

6.4 Traffic Growth

- 6.4.1 The year of opening of the proposed development has been assumed to be 2013 and consideration has been given to the potential for traffic growth between the 2008 survey year and the future assessment years.

320111064P



6.4.2 Guidance set out in the document 'Guidance on Transport Assessments' (Department for Transport, 2007) requires an assessment 5 years after the submission of the planning application. The 2008 background traffic flows have therefore been growthed to the 2013 opening year and the 2016 assessment year using Temprow/National Transport Model low growth factors.

6.4.3 Figure 7 and Figure 8 show the 2013 Growthed Flows for the AM and PM and peak periods respectively. Similarly, Figure 9 and Figure 10 show the 2016 Growthed Flows for the AM and PM peak periods respectively.

6.4.4 TEMPRO output is included within Appendix 2.

6.5 Base Flows

6.5.1 In order to establish the levels of traffic that would occur on the local highway network should the development proposals not proceed, the committed development traffic has been added to the growthed traffic flows to derive base flows.

6.5.2 Figure 11 and Figure 12 show the 2013 base flows for the AM and PM peak periods respectively, whilst Figure 13 and Figure 14 show the 2016 base flows for the AM and PM peak periods respectively.

6.6 Development Trip Generation

6.6.1 In accordance with the latest guidance on Transport Assessments, an estimate of the person trips by all modes has been calculated for the proposed development.

6.7 Multi Modal Trip Generation

6.7.1 In order to establish suitable person trip rates for the proposed development, reference has been made to the latest version, 2011 (b), v6.8.2, of the TRICS database.

6.7.2 Sites with a number of dwellings between 9 to 120 and that are accessibility by public transport have been used for the analysis. Sites located within "edge of town" have been used for the analysis. The analysis has, as far as possible, selected sites which demonstrate similar locational characteristics.



6.7.3 The multi-modal assessment below provides output based on the total number of dwellings at the Mearley Croft site and Primrose Village Phase 2 site.

6.7.4 The full multi-modal TRICS outputs are contained in Appendix 3.

Pedestrian Trip Generation

6.7.5 The peak hours of pedestrian demand for the proposed site on a weekday have been calculated as 1400-1500. The average trip rates and trips are presented in Table 6.2.

	Average Trip Rate (per dwelling)			Trips		
	Arr	Dep	2-way	Arr	Dep	2-way
AM Peak (0800-0900)	0.055	0.239	0.294	6	27	33
PM Peak (1700-1800)	0.079	0.062	0.141	9	7	16

Table 6.2 Proposed Development Average Pedestrian Trip Rates and Trips

6.7.6 As illustrated above it is predicted that the proposed development will experience a peak hour pedestrian generation of 33 trips during the AM peak and 16 during the PM Peak. Given the location of the proposed sites within Clitheroe, it is likely that the majority of the pedestrian trips would be towards the north, or east of the site.

6.7.7 As described in Section 3, the site is easily accessed on foot with the existing pedestrian infrastructure providing safe and accessible links between the site and amenities and transport infrastructure located to the north and east of the site.

6.7.8 The good network of pedestrian footways within the vicinity of the site will help to facilitate journeys on foot to the north of the site into Clitheroe town centre and to the local school located on Greenacre Street.

6.7.9 It is therefore concluded that there is adequate existing pedestrian infrastructure in the vicinity of the site to cater for the predicted increase in footfall, which will arise as a result of the development proposals.



320111064P

Public Transport Trip Generation

- 6.7.10 The peak hours of public transport demand for the proposed development on a weekday have been calculated as 0800-0900. The average trip rates and trips are presented in Table 6.3.

	Average Trip Rate (per dwelling)			Trips		
	Arr	Dep	2-way	Arr	Dep	2-way
AM Peak (0800-0900)	0.01	0.013	0.023	1	1	3
PM Peak (1700-1800)	0.018	0.001	0.019	2	0	2

Table 6.3 Proposed Development Average Public Transport Trip Rates and Trips

- 6.7.11 As illustrated above, it is predicted that the proposed development will generate a maximum peak hour generation of 3 public transport trips during the AM peak and 2 during the PM Peak.
- 6.7.12 Tables 3.1 and 3.2 presented the frequency of bus services operating from the bus station located on Victoria Street and Whalley Road, both of which are accessible from the site. These tables illustrate that the bus services accessible within the vicinity of the site operates to a good frequency and to a variety of locations.
- 6.7.13 As such, it is robustly concluded that forecast public transport trips can be accommodated on existing public transport services.

Cyclist Trip Generation

- 6.7.14 The peak hours of cycle demand for the proposed foodstore on a weekday and Saturday have been calculated as 1500 to 1600 and 0900 to 1000 respectively. The average trip rates and trips are presented in Table 6.4.

320111064P



	Average Trip Rate (trips/100m ²)			Trips		
	Arr	Dep	2-way	Arr	Dep	2-way
AM Peak (0800-0900)	0.011	0.021	0.032	12	2	4
PM Peak (1700-1800)	0.005	0.01	0.015	1	1	2

Table 6.4 Proposed Development Average Cyclist Trip Rates and Trips

6.7.15 As illustrated above it is predicted that the proposed development will experience a peak hour cycle generation of 4 trips during the AM peak and 2 during the PM Peak.

6.7.16 The level of cycle parking at the development will be sufficient to cater for the predicted demand for these facilities, and it is concluded that there is sufficient capacity on the local highway network to accommodate these forecast trips by this mode.

6.8 Vehicular Trip Generation

6.8.1 In respect of the approval sought for the two sites considered within this report it is considered that the vehicular trip generation of both sites be considered separately.

6.8.2 Vehicle trips rates for Primrose Village Phase 1, a site that forms part of the overall masterplan, have previously been agreed with the Council. It is felt therefore that these agreed trip rates are appropriate for this application. These trip rates are shown in Table 6.5, below.

	AM Peak			PM Peak		
	Arrive	Depart	Total	Arrive	Depart	Total
Apartment Trip Rate	0.103	0.344	0.447	0.344	0.138	0.481
Houses Trip Rate	0.140	0.516	0.656	0.519	0.259	0.778

Table 6.5 Proposed Vehicle Trip Rates

6.9 Mearley Croft Vehicular Trip Generation

6.9.1 In total, 32 residential properties are proposed on the Mealey Croft site. Vehicle trip generation for this site based on the vehicle trip rates shown in Table 6.5, are demonstrated below in Table 6.6.

320111064P



	Arrive	Depart	Total
AM Peak (0830-0930)	4	15	19
PM Peak (1700-1800)	15	7	22

Table 6.6 Vehicle Trip Generation at Mearley Croft

- 6.9.2 In order to assign the new trips, reference has been made to an existing distribution of traffic on the network. Figure 15 illustrates the trip distribution during the AM peak, whilst Figure 16 illustrates the trip distribution during the PM peak. The distribution has previously been agreed with the council in respect of proposals for Primrose Village Phase 1.
- 6.9.3 Vehicle trips generated by the proposed Mearley Croft development are shown in Figure 17 and Figure 18, for the respective AM and PM peak periods.
- 6.9.4 Figure 19 and Figure 20 show the 2013 'with Mearley Croft development' flows for the AM and PM peak periods respectively, whilst Figure 21 and Figure 22 show the 2016 'with Mearley Croft development' flows for the AM and PM peak periods respectively.
- 6.9.5 Having determined the 'with development' levels of traffic that are predicted to occur following the implementation of the development proposals, capacity assessments have been carried out for the Mearley Croft site.

6.10 Capacity Assessments

Whalley Road/ Primrose Road/ Side Road Junction

- 6.10.1 In order to advise the highway authority, capacity assessments of the proposed highway network have been carried out.
- 6.10.2 Capacity assessments have focused on the Whalley Road/Primrose Road staggered junction. A PICADY model has been constructed to assess the operation of this junction with the introduction of the Mearley Croft development generated traffic.

320111064P



- 6.10.3 Assessments have been undertaken for the AM and PM peak periods for the 2016 'with development' scenario.
- 6.10.4 Table 6.7 below demonstrates the output summary from the junction assessment carried out during the AM and PM Peak periods.

Arm	Road Name			
A	Whalley Road North			
B	Side Road			
C	Whalley Road South			
D	Primrose Road			
2016 Base + Development				
Movement	AM Peak		PM Peak	
	Max RFC	Max Queue	Max RFC	Max Queue
B-AD	0.007	0	0.022	0
A-BCD	0.047	0	0.100	0
D-ABC	0.857	4	0.597	1
C-ABC	0.018	0	0.005	0

**Table 6.7 PICADY Output for the Existing Whalley Road/Primrose Road Junction
- 2016 'With Mearley Croft' Development**

- 6.10.5 Table 6.7 above demonstrates that the junction continues to operate with acceptable levels of performance during the AM and PM periods in 2016, although the junction begins to approach its operational design capacity during the AM peak.

6.11 Primrose Village Phase 2 Vehicular Trip Generation

- 6.11.1 Vehicle traffic generation has also been considered with regard to the proposed Primrose Village Phase 2 site. In total, 81 residential properties are proposed at the site.
- 6.11.2 The likely vehicle trip generation of these dwellings are illustrated in Table 6.8 below.

320111064P



	Arrive	Depart	Total
AM Peak (0830-0930)	11	42	53
PM Peak (1700-1800)	42	21	63

Table 6.8 Vehicle Trip Generation at Primrose Village Phase 2

6.11.3 As before, vehicle trips have been distributed on the local highway network. The vehicle trip distribution used for the Primrose Village Phase 2 site is shown in Figure 23 and Figure 24 during the AM and PM peak hours respectively, whilst Figure 25 and Figure 26 demonstrate the proposed vehicle trips on the network.

6.11.4 Figure 27 and Figure 28 show the 2013 'with full development' flows for the AM and PM peak periods respectively, whilst Figure 29 and Figure 30 show the 2016 'with full development' flows for the AM and PM peak periods respectively.

6.12 Capacity Assessment Primrose Village Phase 2

6.12.1 As before, the existing junction of Whalley Road/Primrose Road/Side Road has been assessed using PICADY. The results are summarised in Table 6.9 below.

Arm	Road Name			
A	Whalley Road North			
B	Side Road			
C	Whalley Road South			
D	Primrose Road			
2016 Base + Development				
Movement	AM Peak		PM Peak	
	Max RFC	Max Queue	Max RFC	Max Queue
B-AD	0.008	0	0.022	0
A-BCD	0.053	0	0.100	0
D-ABC	1.029	11	0.597	1
C-ABC	0.018	0	0.005	0

Table 6.9 PICADY Output for the Existing Whalley Road/Primrose Road Junction
- 2016 'With Mearley Croft and Primrose Village Phase 2' Development



320111064P

- 6.12.2 The results in Table 6.9 illustrate that the junction operates within capacity during the PM Peak, however, during the AM peak the junction operates with a maximum RFC of 1.029.

Proposed Improvement to the Whalley Rd/Primrose Rd/Side Rd Junction

- 6.12.3 In view of the PICADY output demonstrated in Table 6.9 above, it is proposed that improvements are made to the existing Whalley Road/Primrose Road/Side Road Junction following the implementation of the Mearley Croft site but prior to the construction of the Primrose Village Phase 2 site is underway.
- 6.12.4 The improved junction design is shown in Plan 7. This shows widening of Primrose Road on the approach to the junction to provide a flare and include a pedestrian refuge. In addition, it is proposed that Whalley Road be widened along its north-east edge to facilitate a right turn lane onto Primrose Road and the Side Road. The principle of this improvement has been discussed and agreed with Lancashire CC.
- 6.12.5 A PICADY model has been prepared based on the proposed junction arrangement, and the junction has been tested using the 2016 'with development' flows. A summary of the PICADY output is shown in Table 6.10, with the output being provided in full at Appendix 4.



320111064P

Arm	Road Name			
A	Whalley Road North			
B	Side Road			
C	Whalley Road South			
D	Primrose Road			
2016 Base + Development				
Movement	AM Peak		PM Peak	
	Max RFC	Max Queue	Max RFC	Max Queue
B-ACD	0.005	0	0.023	0
A-BCD	0.049	0	0.135	0
D-AB	0.232	0	0.174	0
D-BC	0.692	2	0.600	1
C-ABC	0.015	0	0.005	0

**Table 6.10 PICADY Output for the Proposed Whalley Road/Primrose Road Junction
- 2016 'With Mearley Croft and Primrose Village Phase 2' Development**

- 6.12.6 It can be seen from Table 6.10 that the proposed junction operate will operate well within capacity at 2016 following the implementation of both the Mearley Croft and Primrose Village Phase 2 developments.



320111064P

7 CONCLUSIONS

- 7.1.1 Savell Bird and Axon have been instructed by beck Development Limited to advise on the traffic and transportation issues relating to the development of land off Woone Lane, south Clitheroe.
- 7.1.2 It is proposed that a total of 113 residential dwellings are constructed across two sites. The first site, Mearley Croft, which is located within approximately 260m south of the junction of Woone Lane/Greenacre Road/Eshton Terrace, will be occupied by a total of 32 units. These will be affordable/ social housing and it is anticipated will be constructed first. Access to the proposed Mearley Croft will be taken from Woone Lane.
- 7.1.3 The second phase of development is located to the south of this site, within approximately 400m of the Mearley Croft site. On this site, referred to as Primrose Village Phase 2, it is proposed to construct a total of 81 residential units. Access to the Primrose Village Phase 2 site will be gained via the existing access that serves the Phase 1 development.
- 7.1.4 It has been demonstrated that the proposed development would be accessible by non-car travel modes including walking, cycling and by public transport, in accordance with PPG13. Within the site footways will be provided to a good standard linking the sites with Woone Lane.
- 7.1.5 Likely vehicle trip generation for the proposed sites have been forecast based on previously agreed TRICS trip rates.
- 7.1.6 Capacity assessments have been carried out at the Whalley Road/ Primrose Road/ Side Road junction, which demonstrate that the junction will operate close to capacity following the implementation of the Mearley Croft development.
- 7.1.7 Therefore, prior to the implementation of the Primrose Village Phase 2 development, it is proposed that improvements be provided at the Whalley Road/Primrose Road/Side Road junction.
- 7.1.8 Taking the above information into account, it is concluded that the proposals should be acceptable in highways terms.

320111064P

FIGURES



320111064P

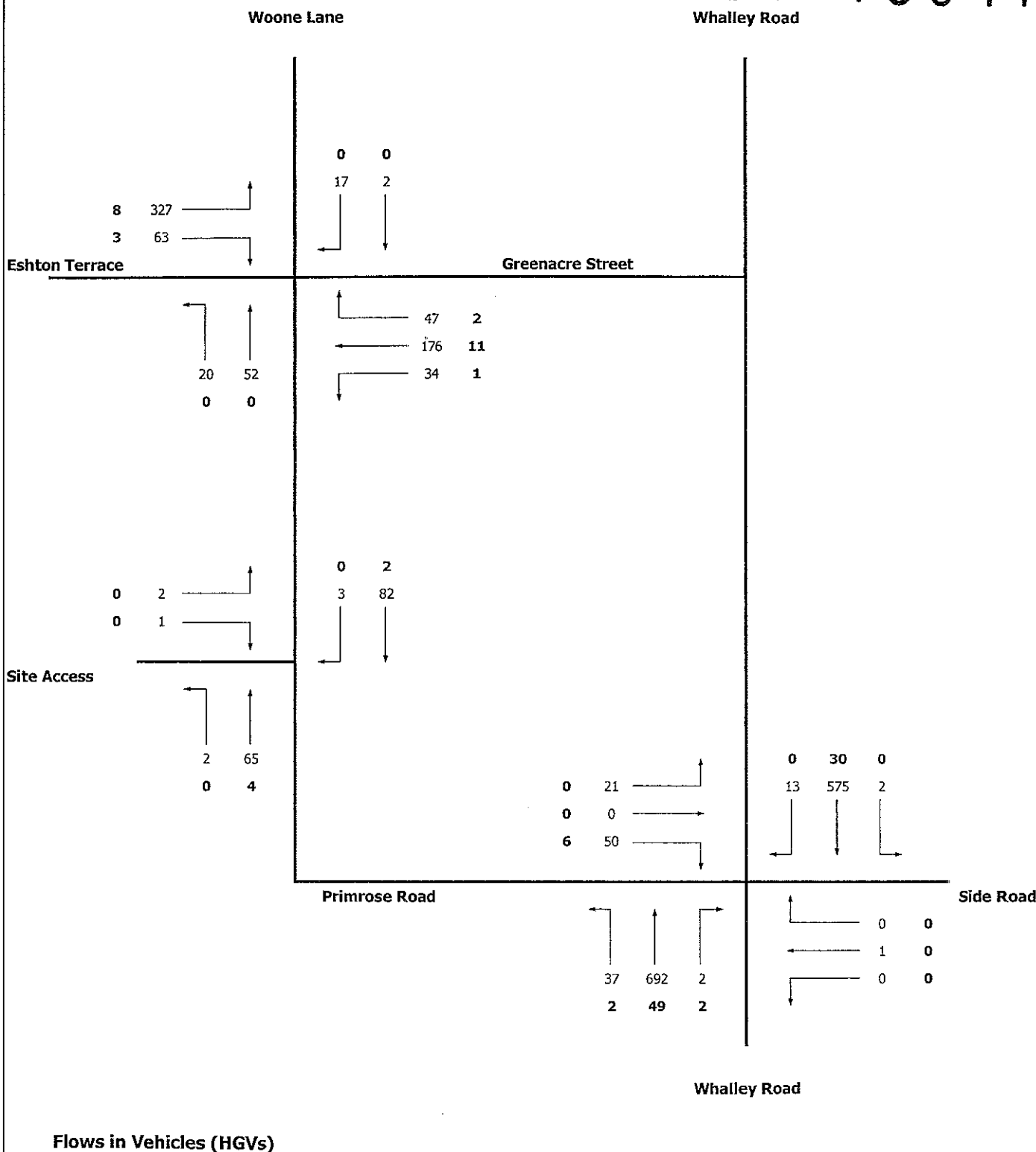


Figure 1 2008 Surveyed Flows - Weekday AM Peak (0830-0930)



320111064P

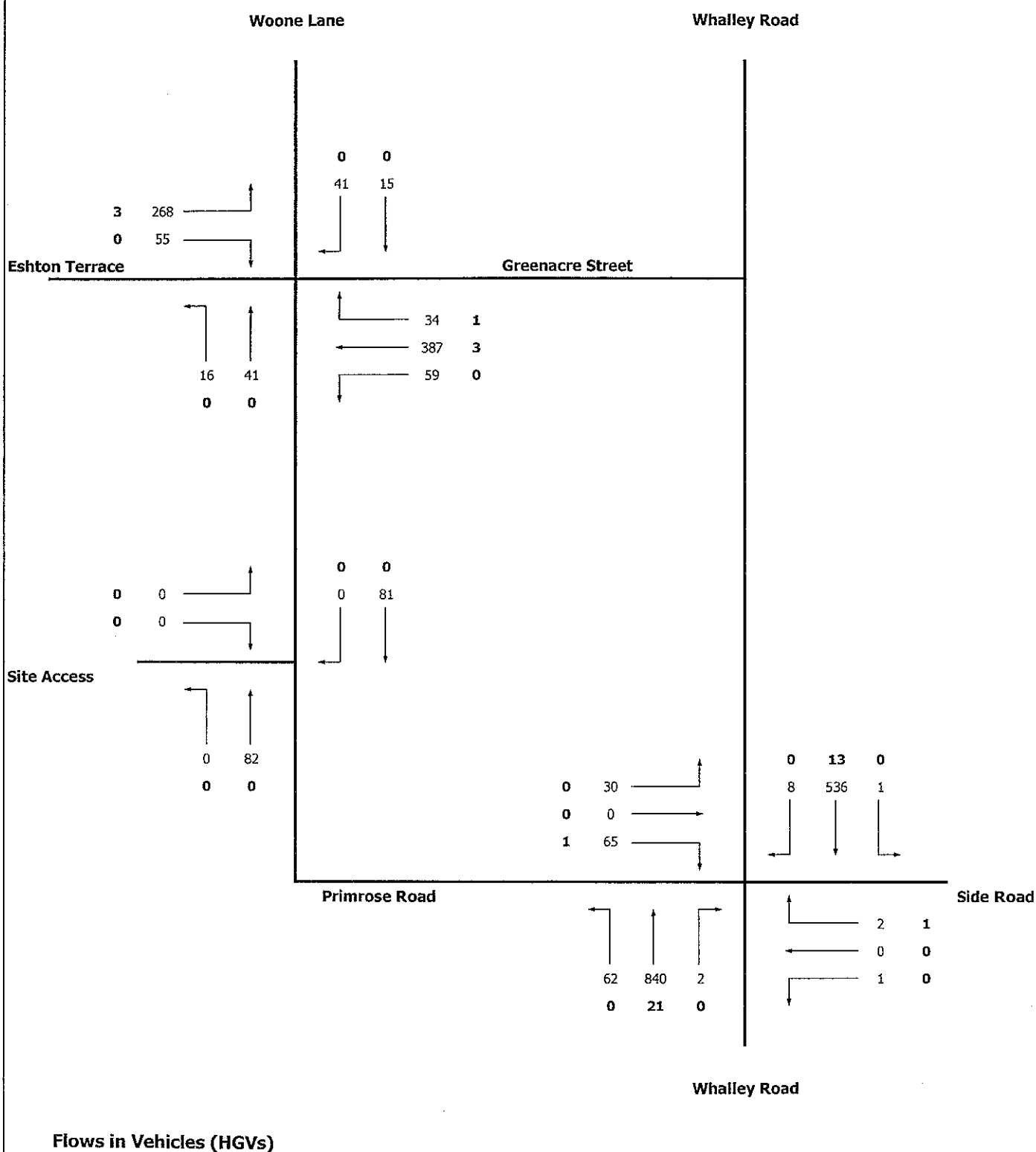


Figure 2 2008 Surveyed Flows - Weekday PM Peak (1700-1800)

320111064P

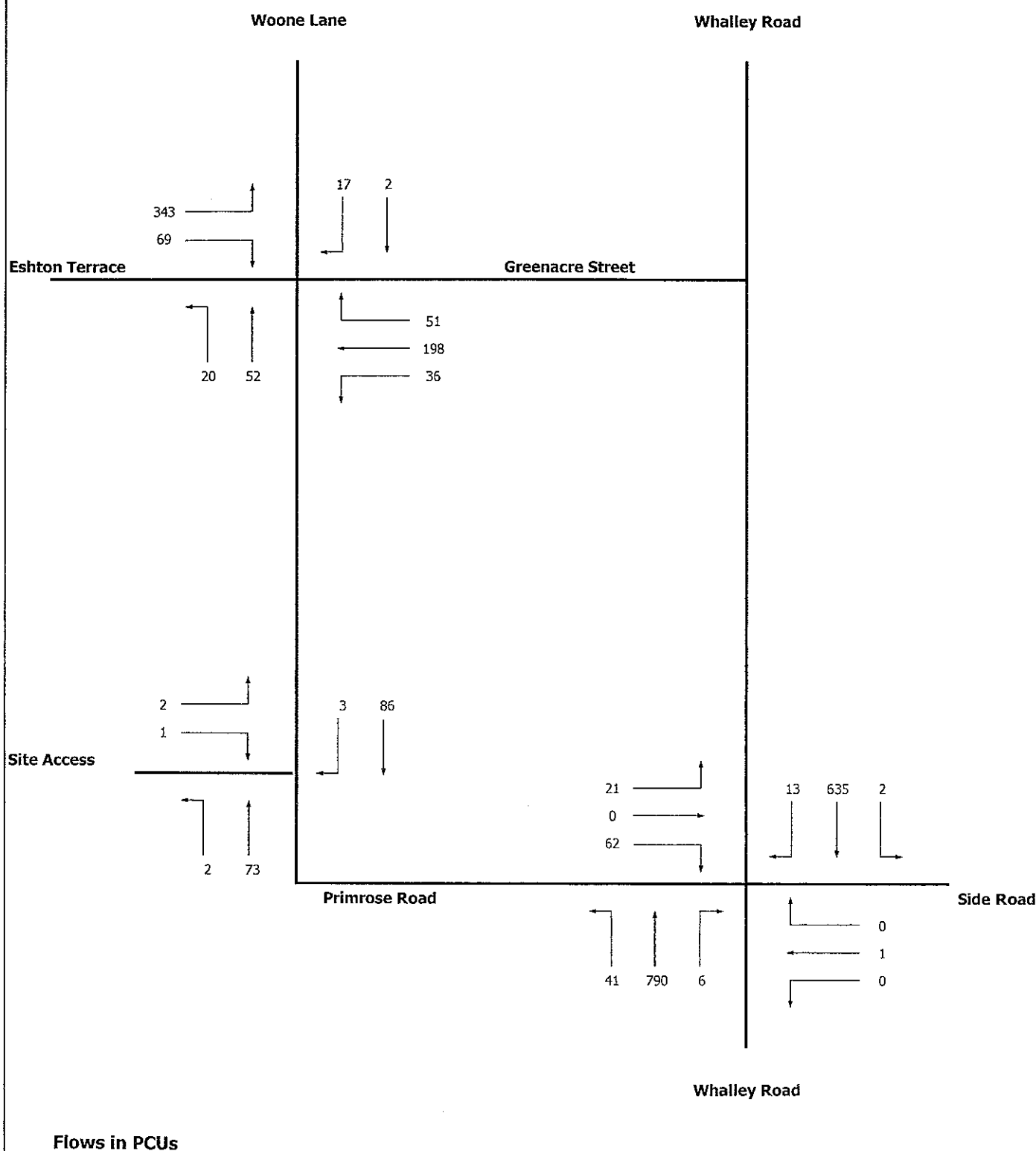


Figure 3 2008 Surveyed Flows - Weekday AM Peak



320111064P

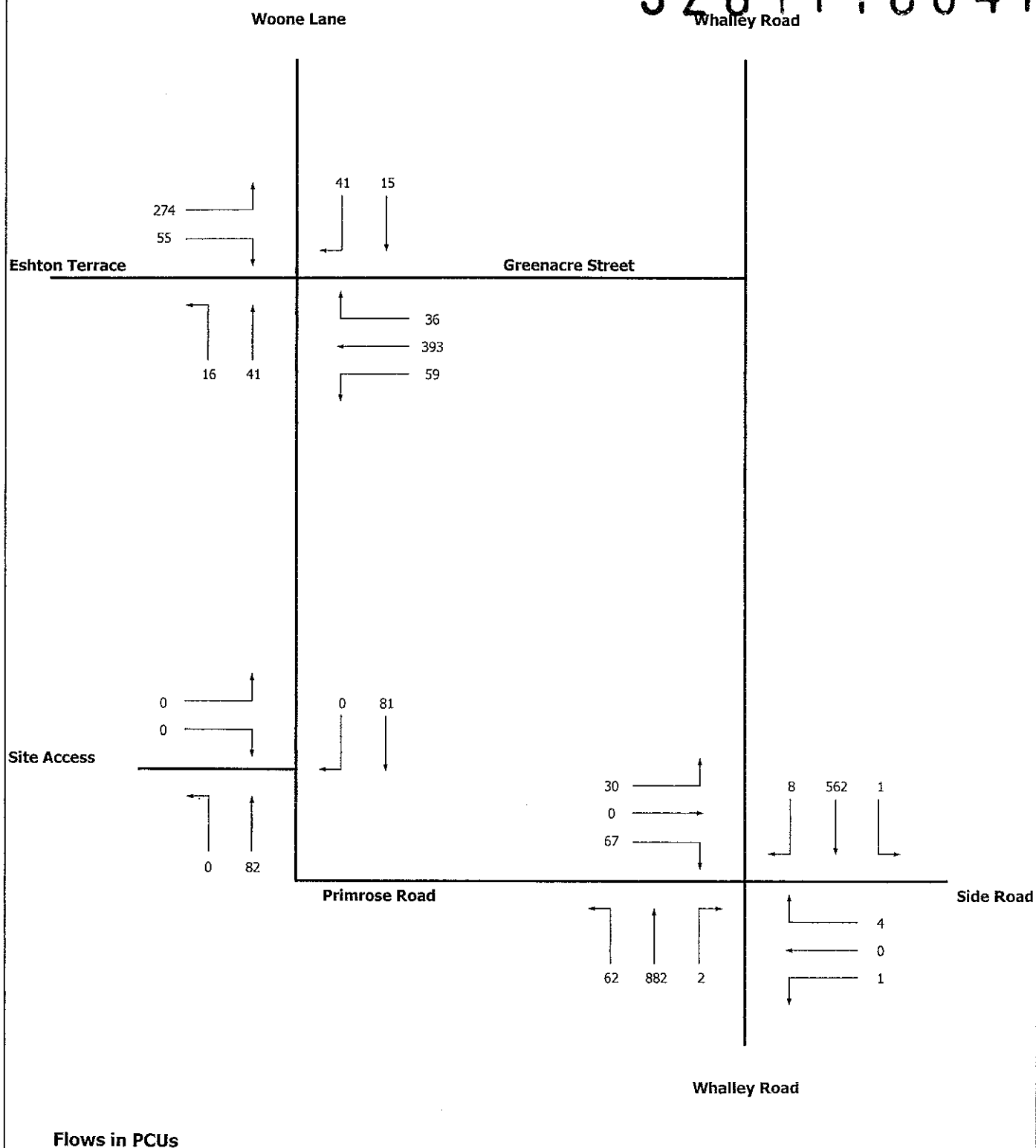


Figure 4 2008 Surveyed Flows - Weekday PM Peak



320111064P

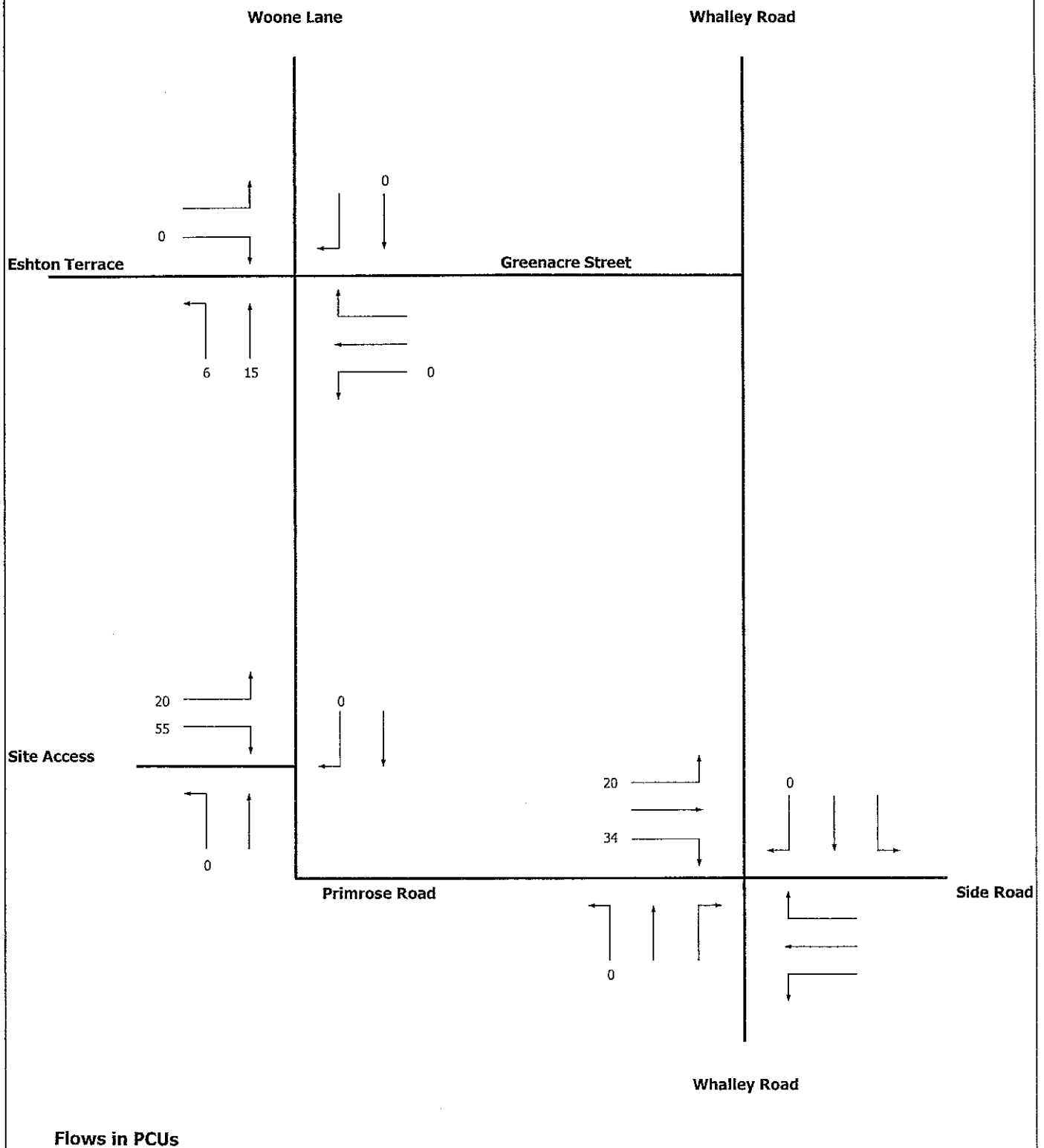


Figure 5 Committed Development Traffic - Weekday AM Peak



320111064P

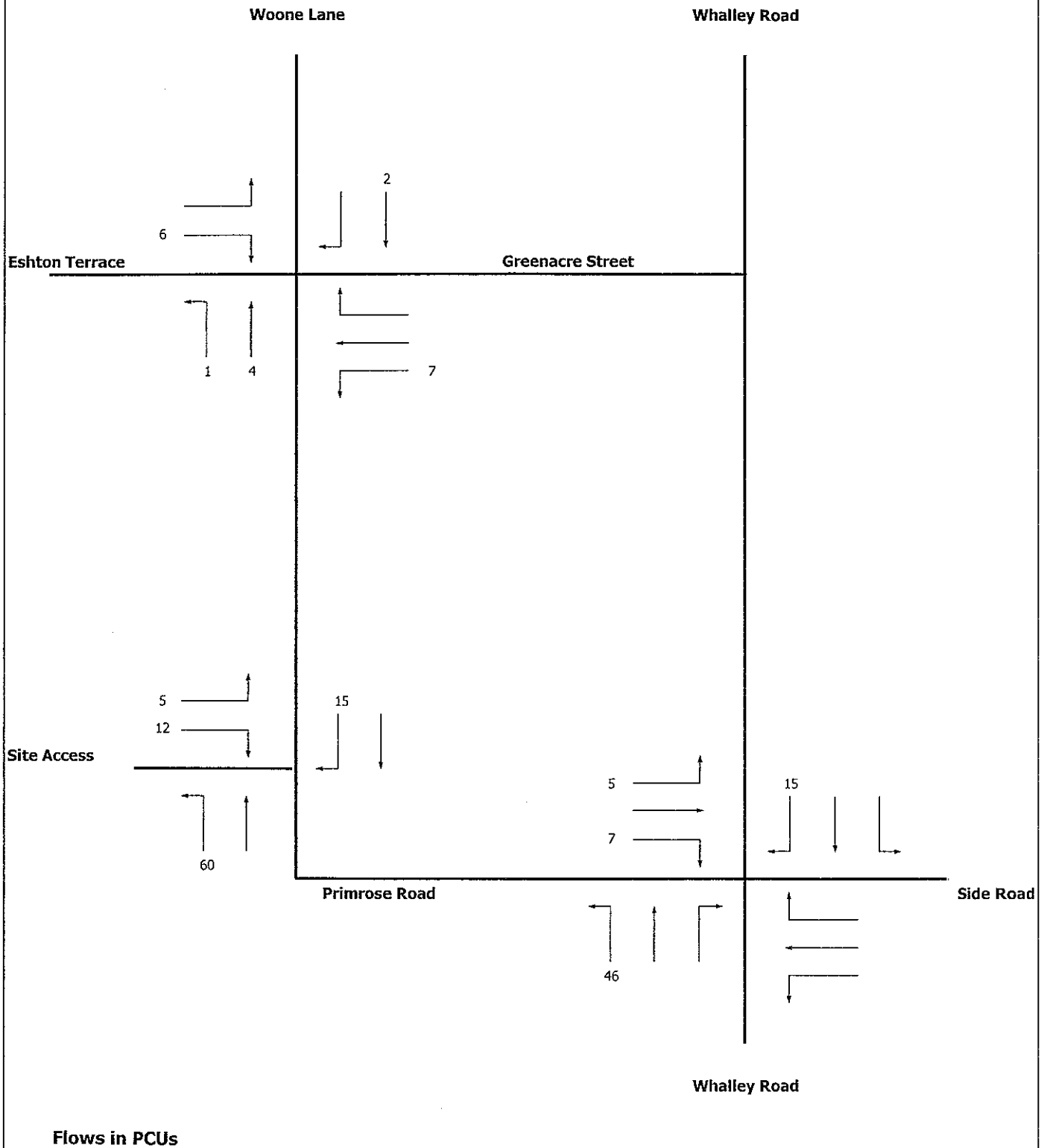


Figure 6 Committed Development Traffic - Weekday PM Peak



320111064P

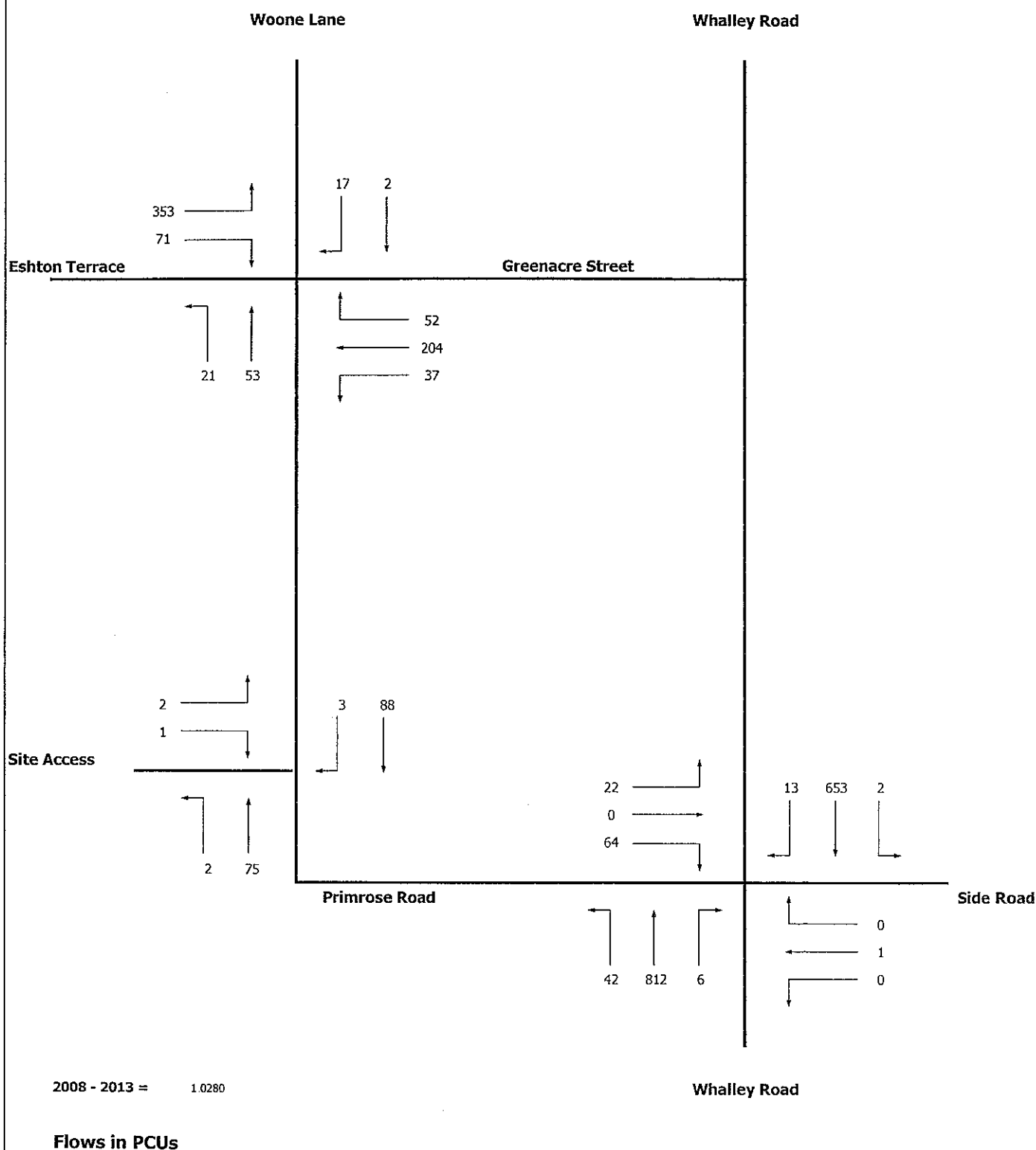


Figure 7 2013 Growthed Flows - Weekday AM Peak



320111064P

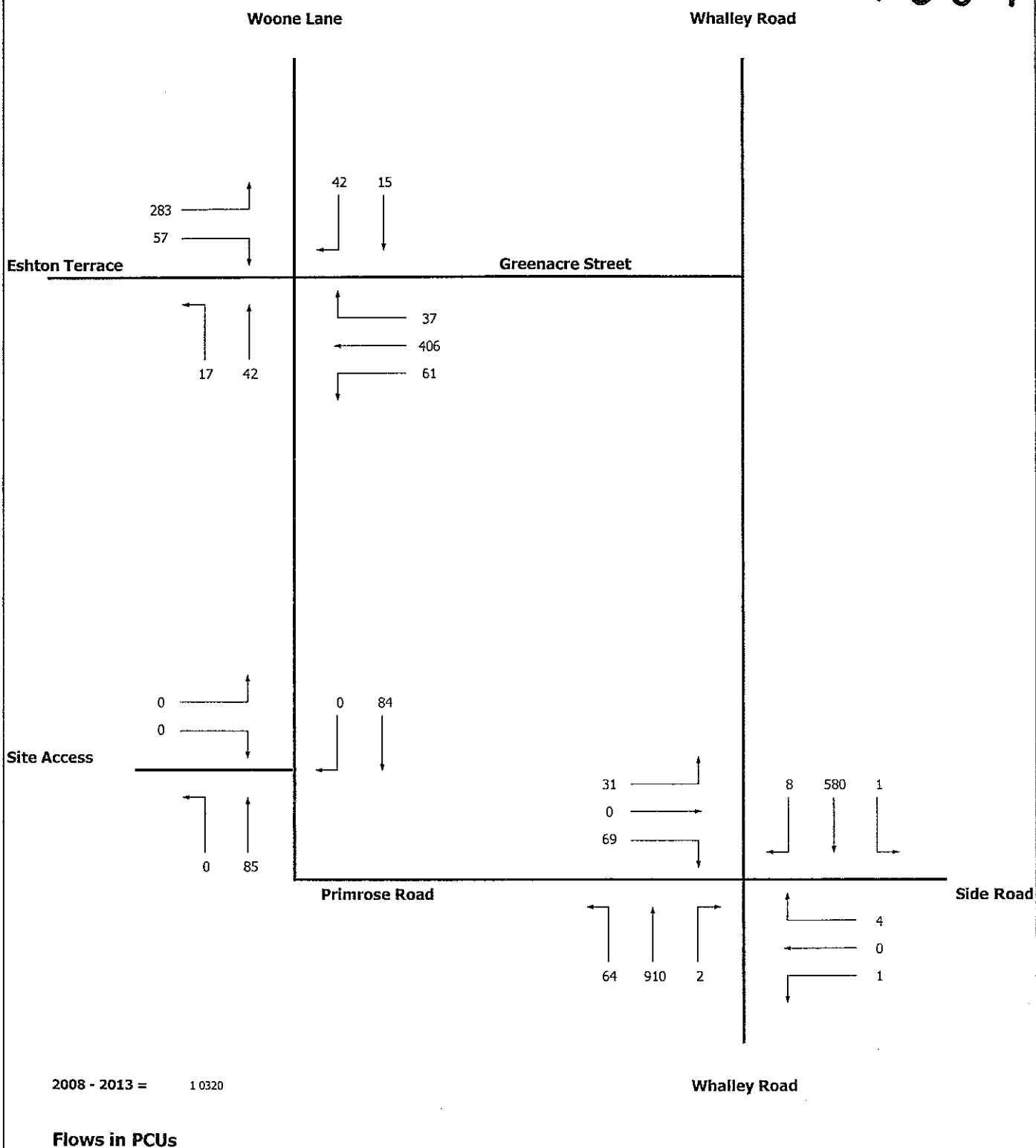


Figure 8 2013 Growthed Flows - Weekday PM Peak



320111064P

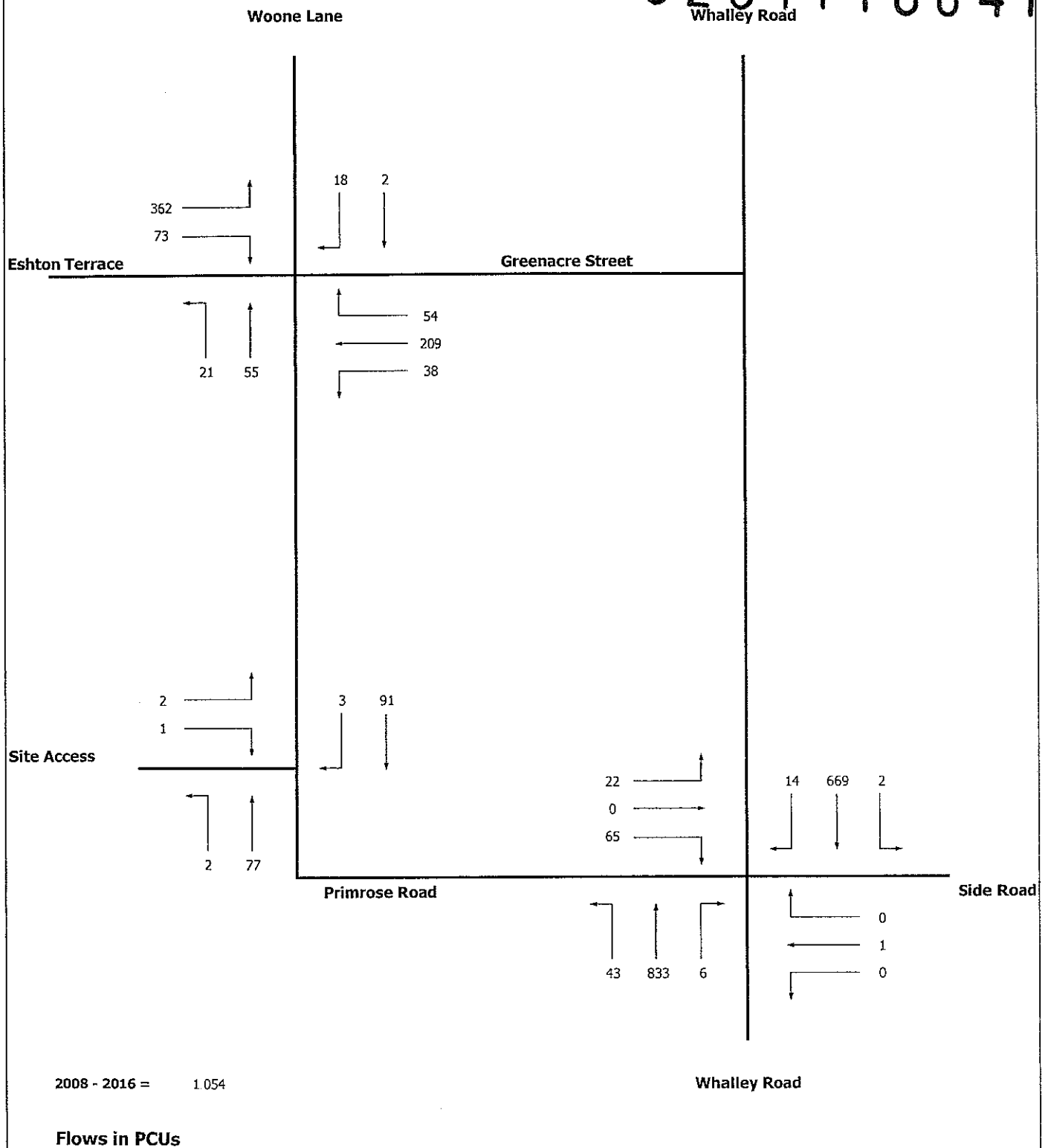


Figure 9 2016 Growthed Flows - Weekday AM Peak

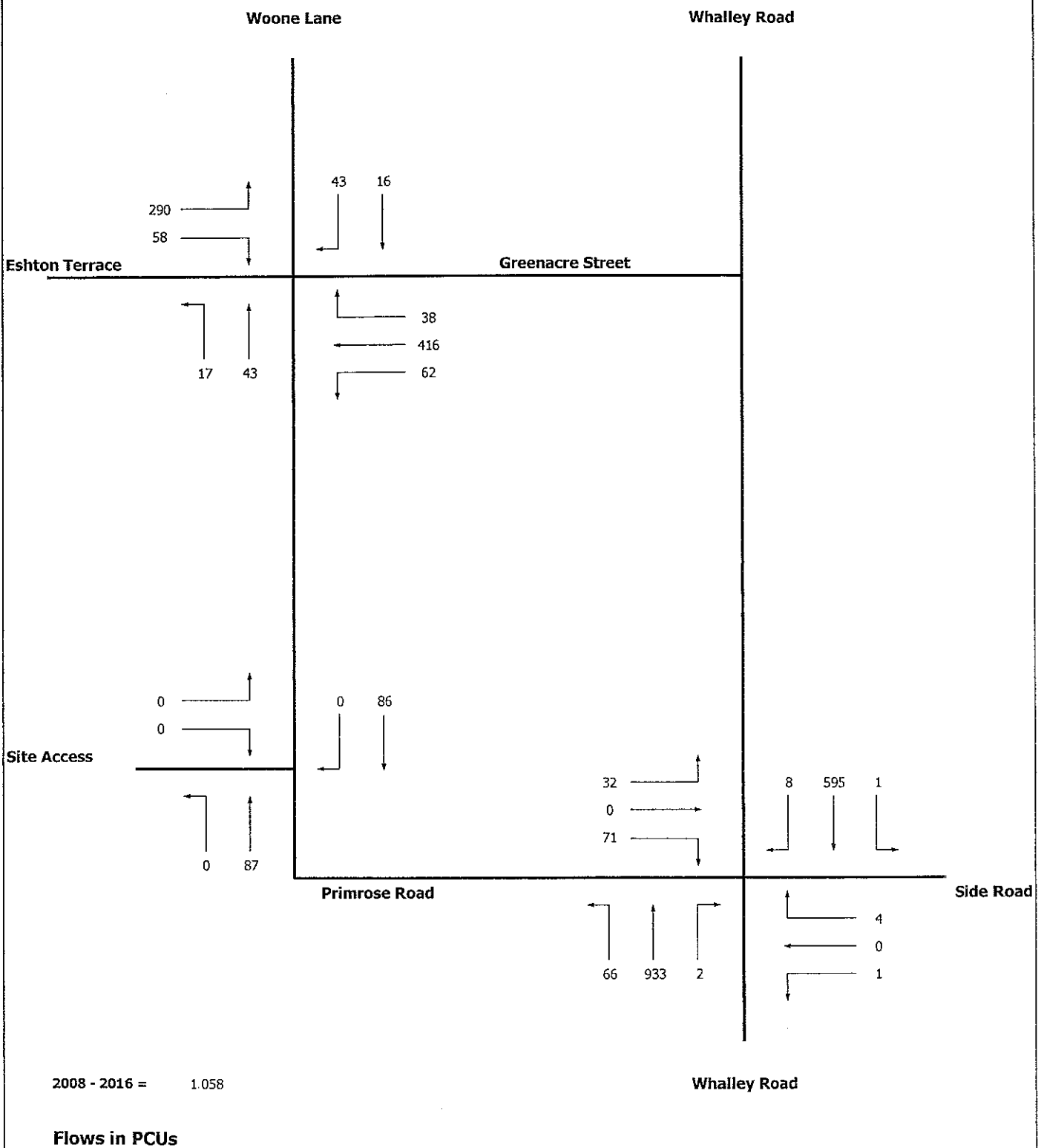


Figure 10 2016 Growthed Flows - Weekday PM Peak



320111064P

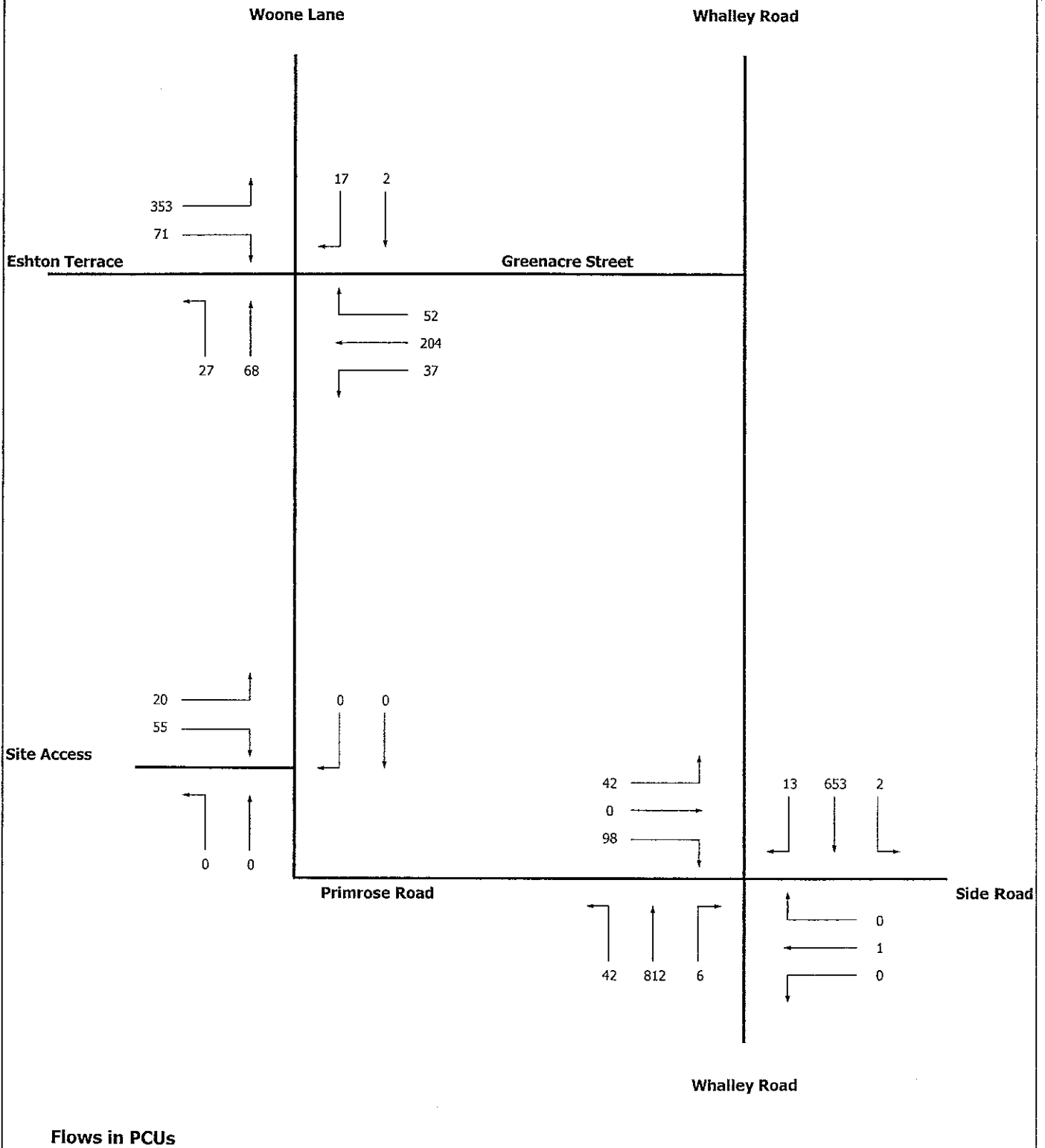


Figure 11 2013 Base Flows - Weekday AM Peak

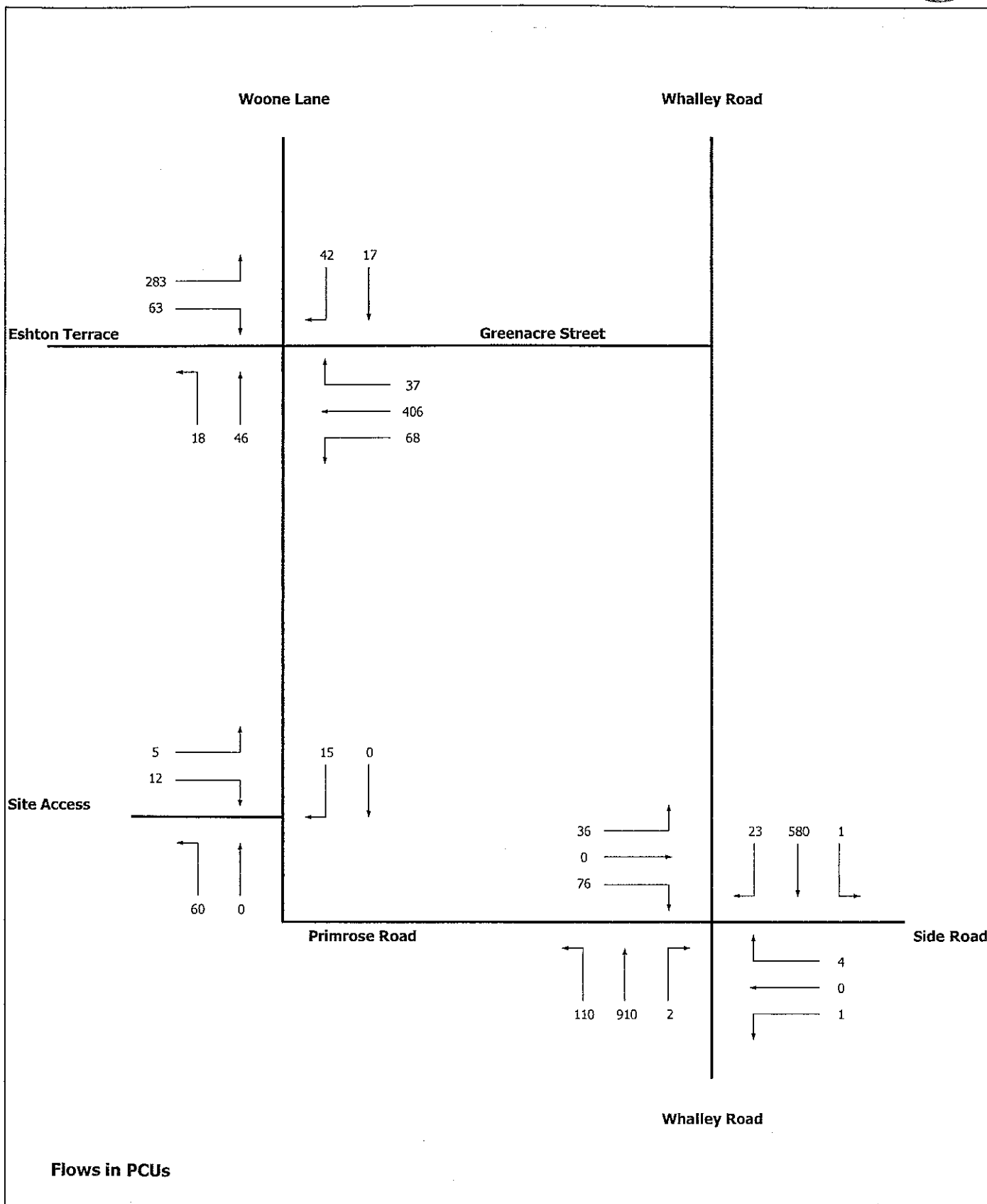


Figure 12 2013 Base Flows - Weekday PM Peak

320111064P

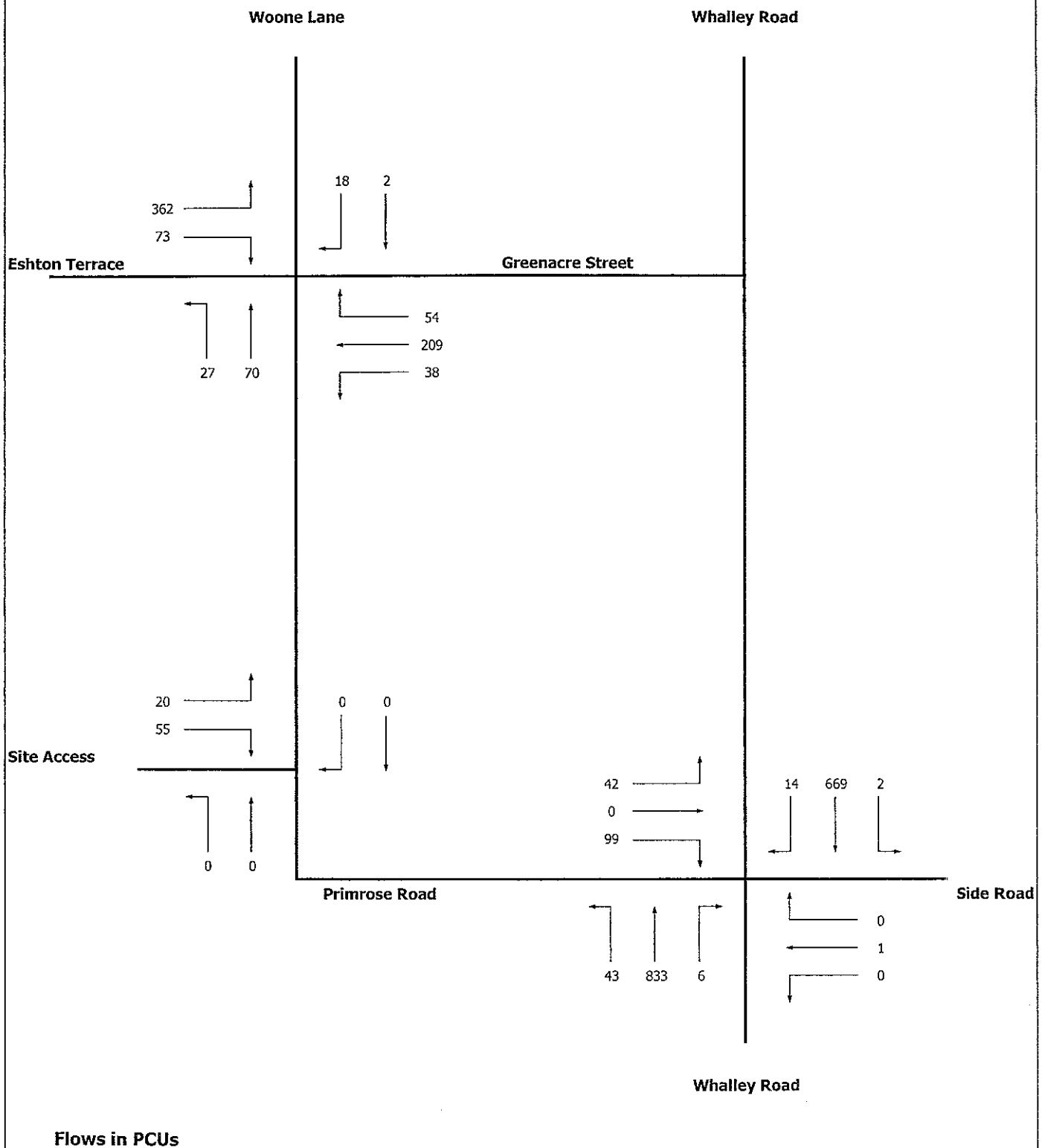


Figure 13 2016 Base Flows - Weekday AM Peak

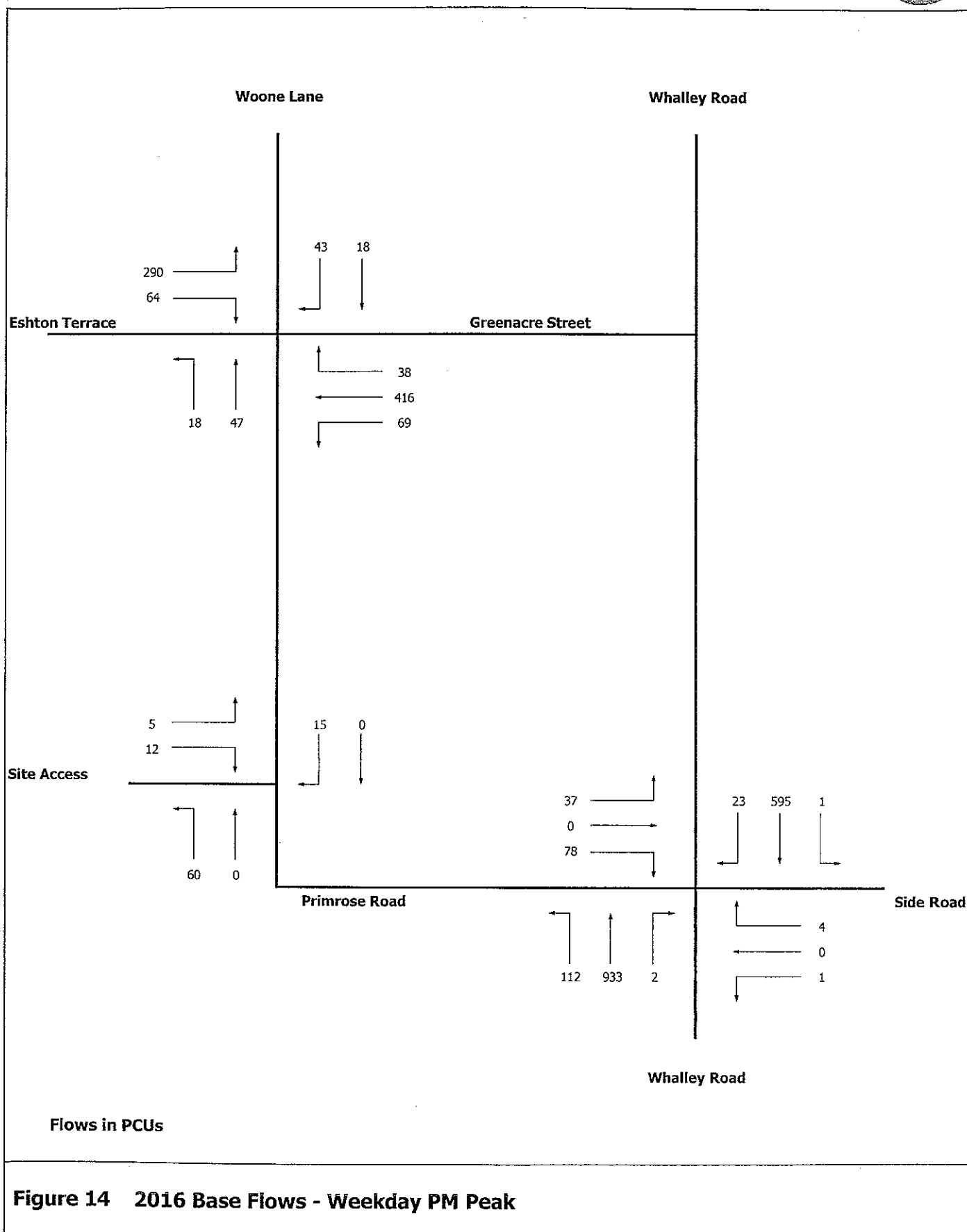


Figure 14 2016 Base Flows - Weekday PM Peak



320111064P

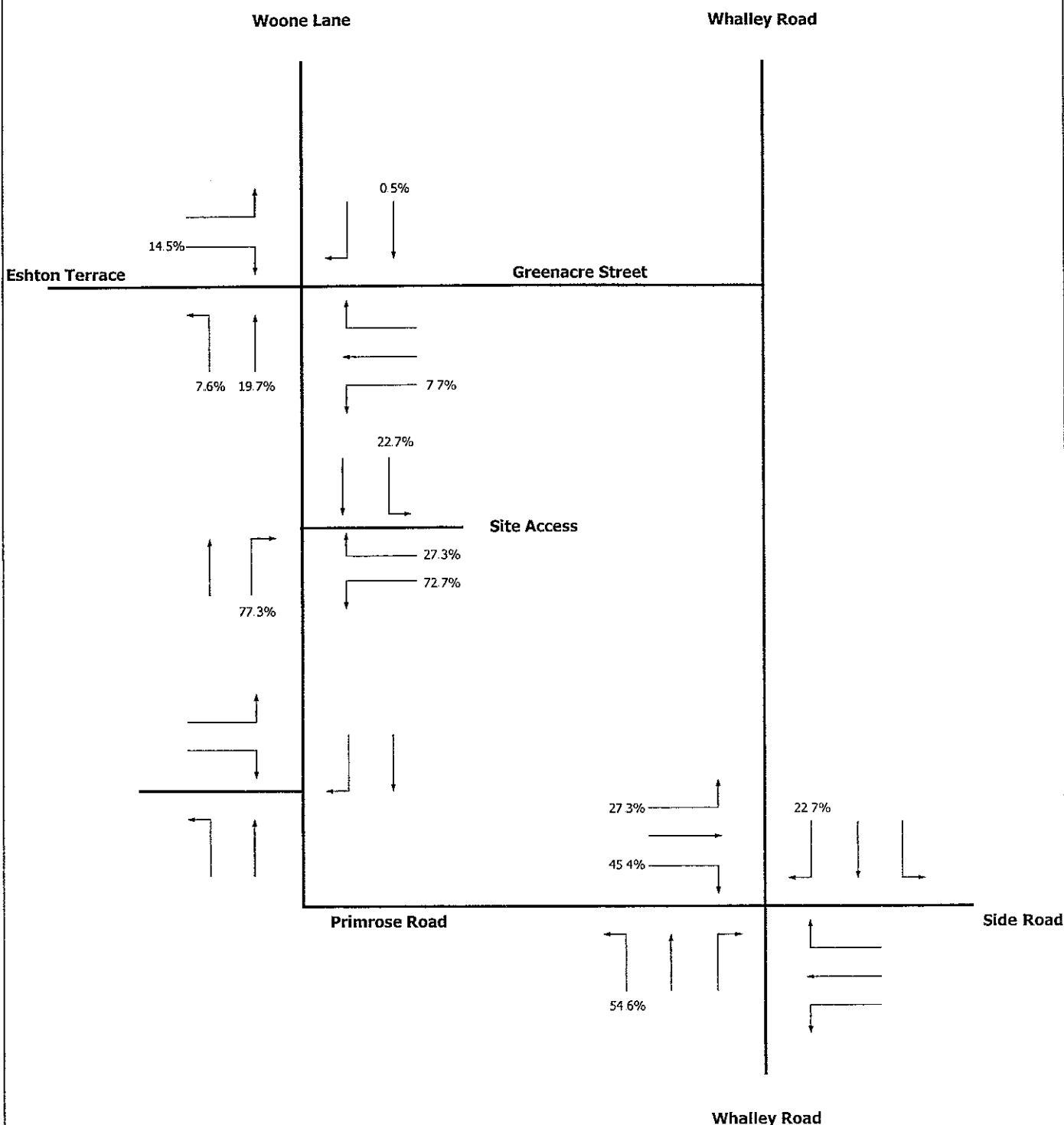


Figure 15 Proposed Trip Distribution Mearley Fold - Weekday AM Peak

320111064P

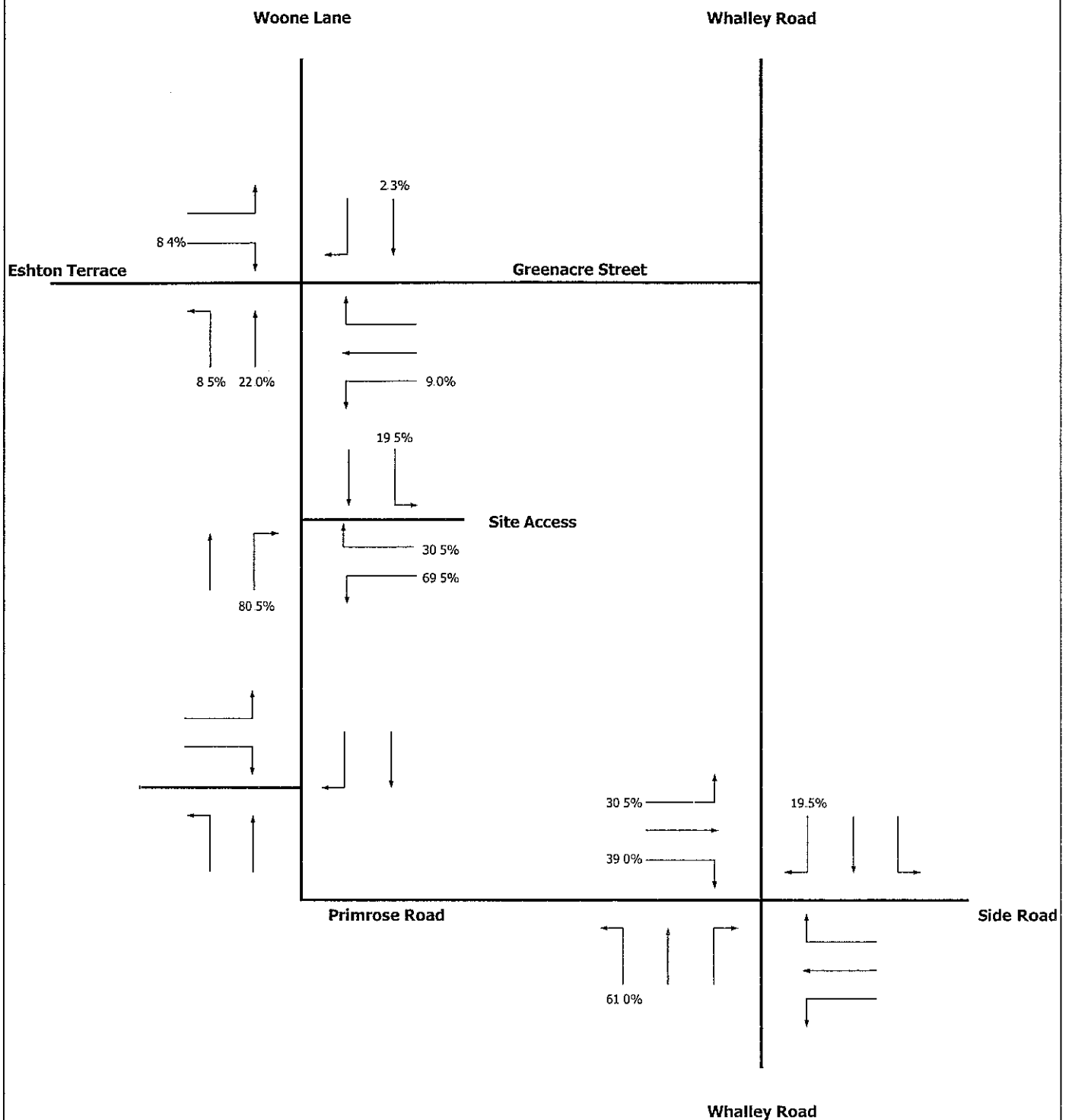


Figure 16 Proposed Trip Distribution Mearley Fold - Weekday PM Peak

320111064P

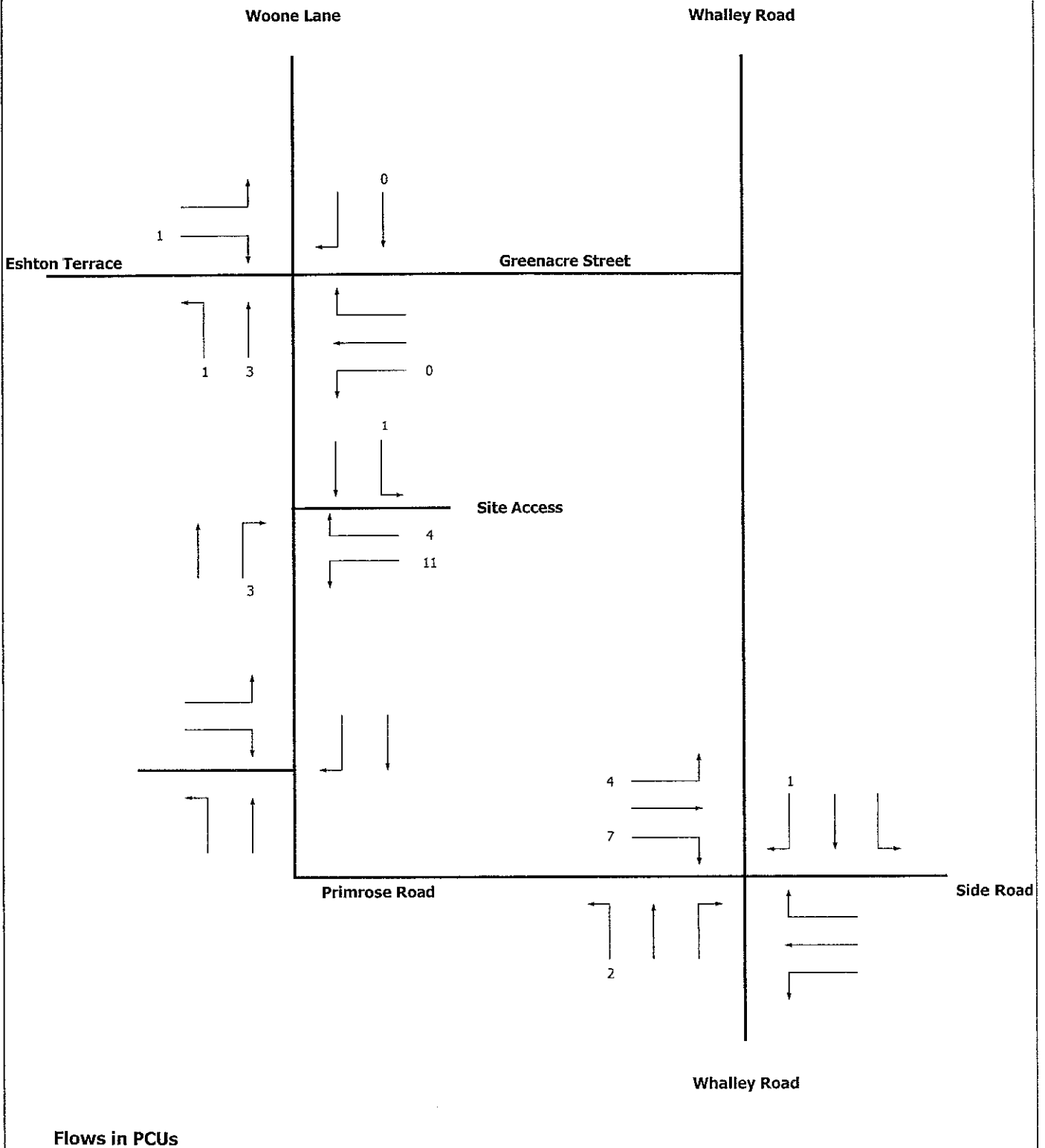


Figure 17 Proposed Development Traffic Mearley Fold - Weekday AM Peak

320111064P



Figure 18 Proposed Development Traffic Mearley Fold- Weekday PM Peak

320111064P

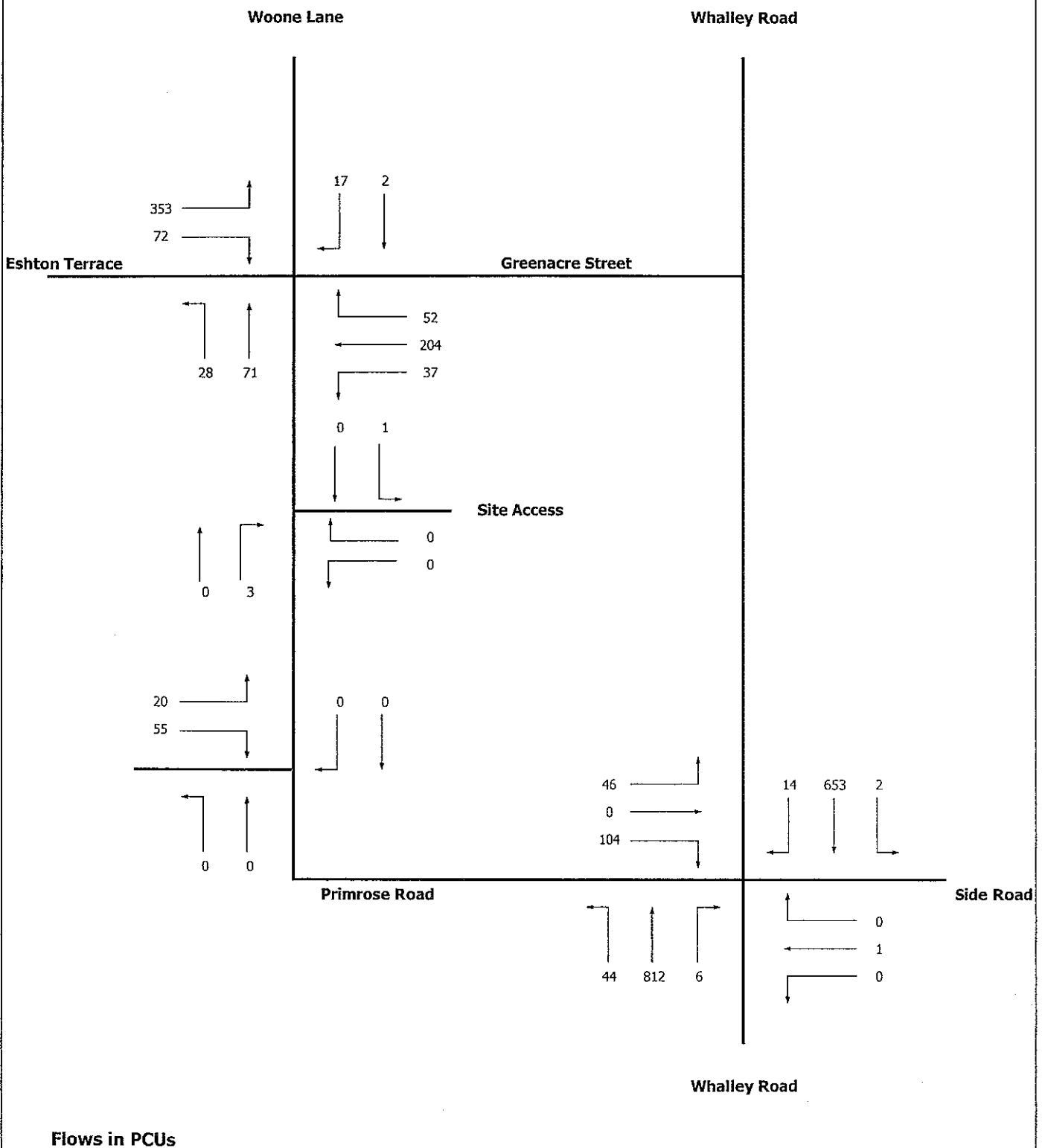


Figure 19 2013 'With Development' Flows Mearley Fold - Weekday AM Peak

320111064P

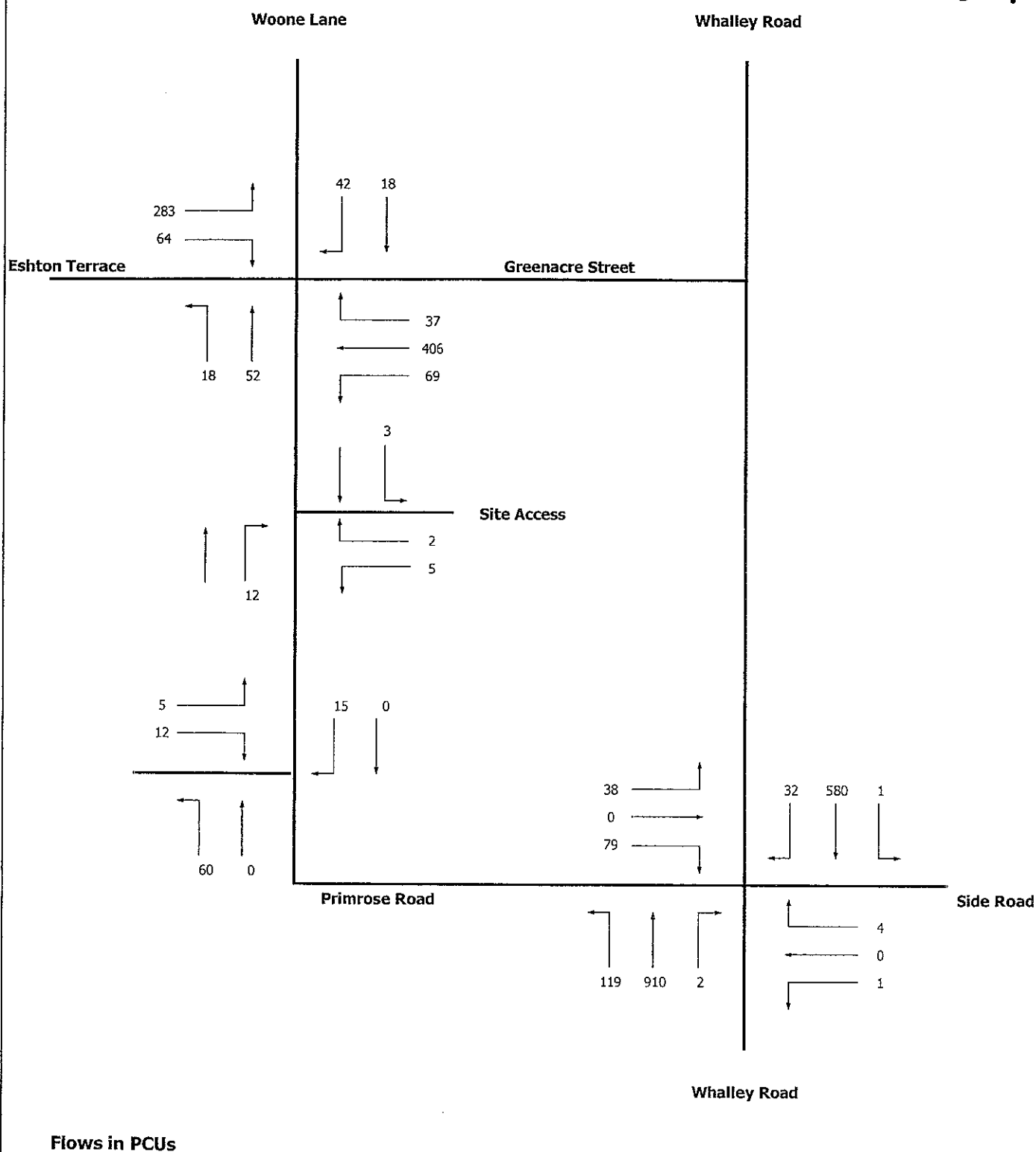


Figure 20 2013 'With Development' Flows Mearley Fold- Weekday PM Peak



320111064P

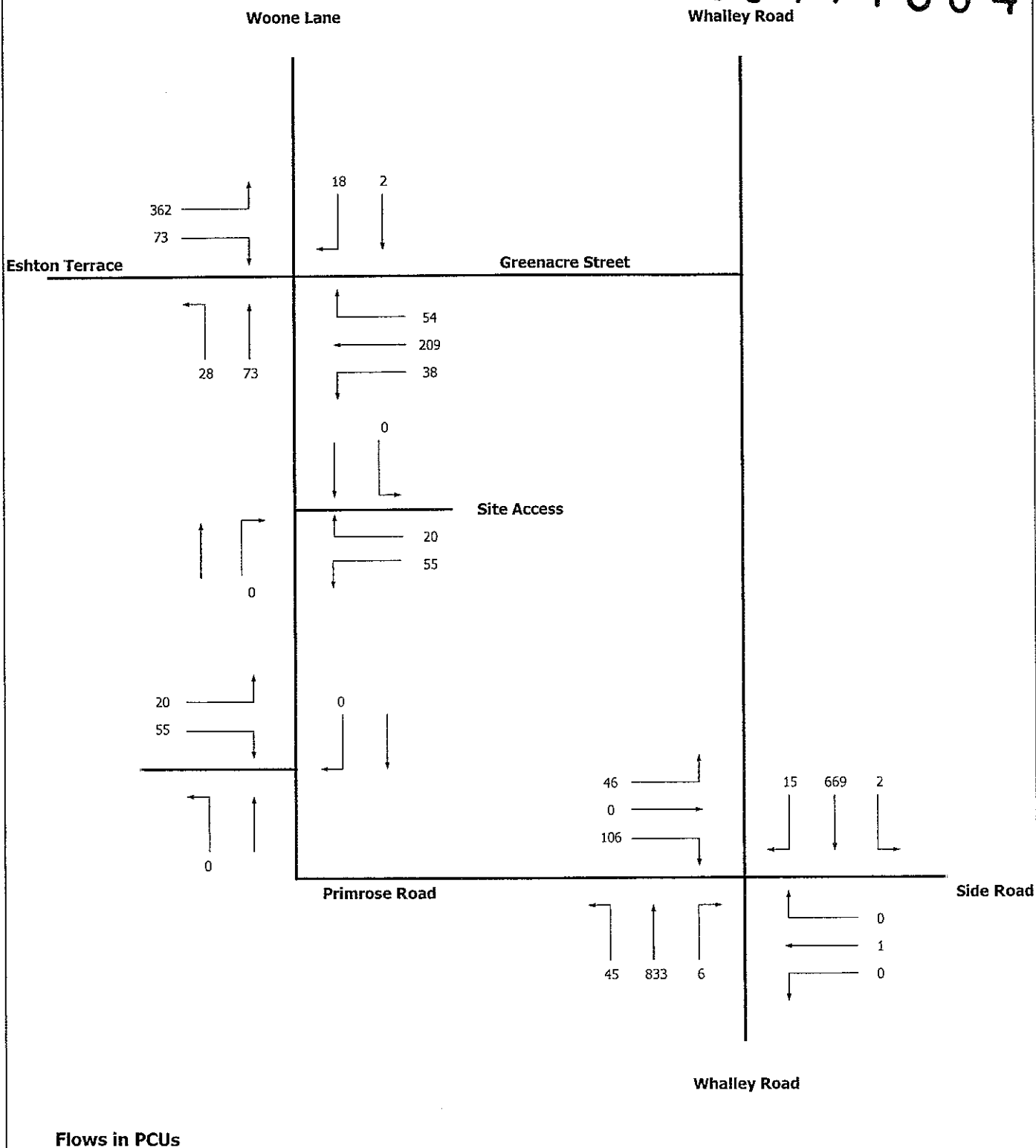


Figure 21 2016 'With Development' Flows Mearley Fold- Weekday AM Peak

320111064P

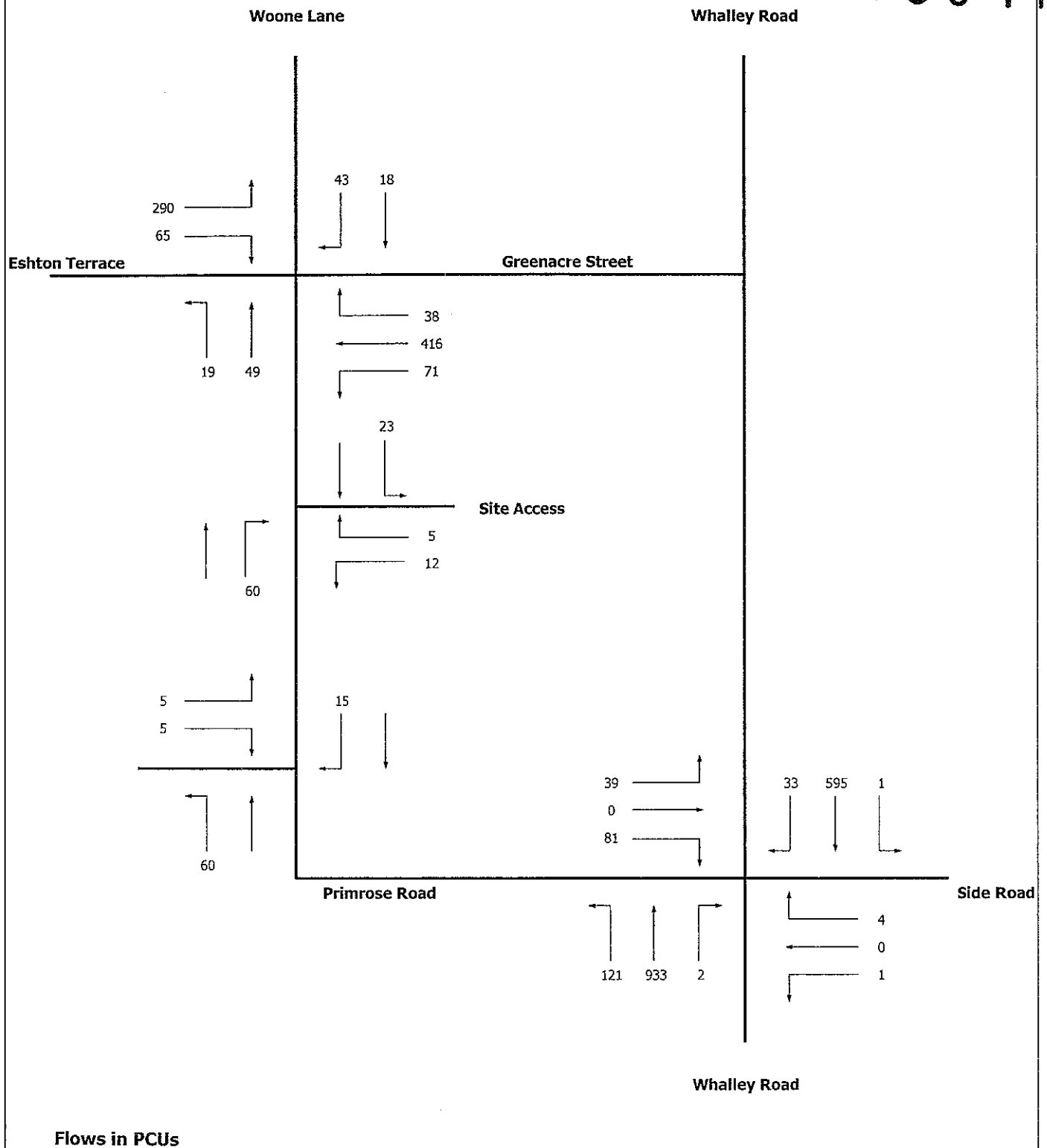


Figure 22 2016 'With Development' Flows Mearley Fold - Weekday PM Peak

320111064P



Transport Planning Specialists

320111064P

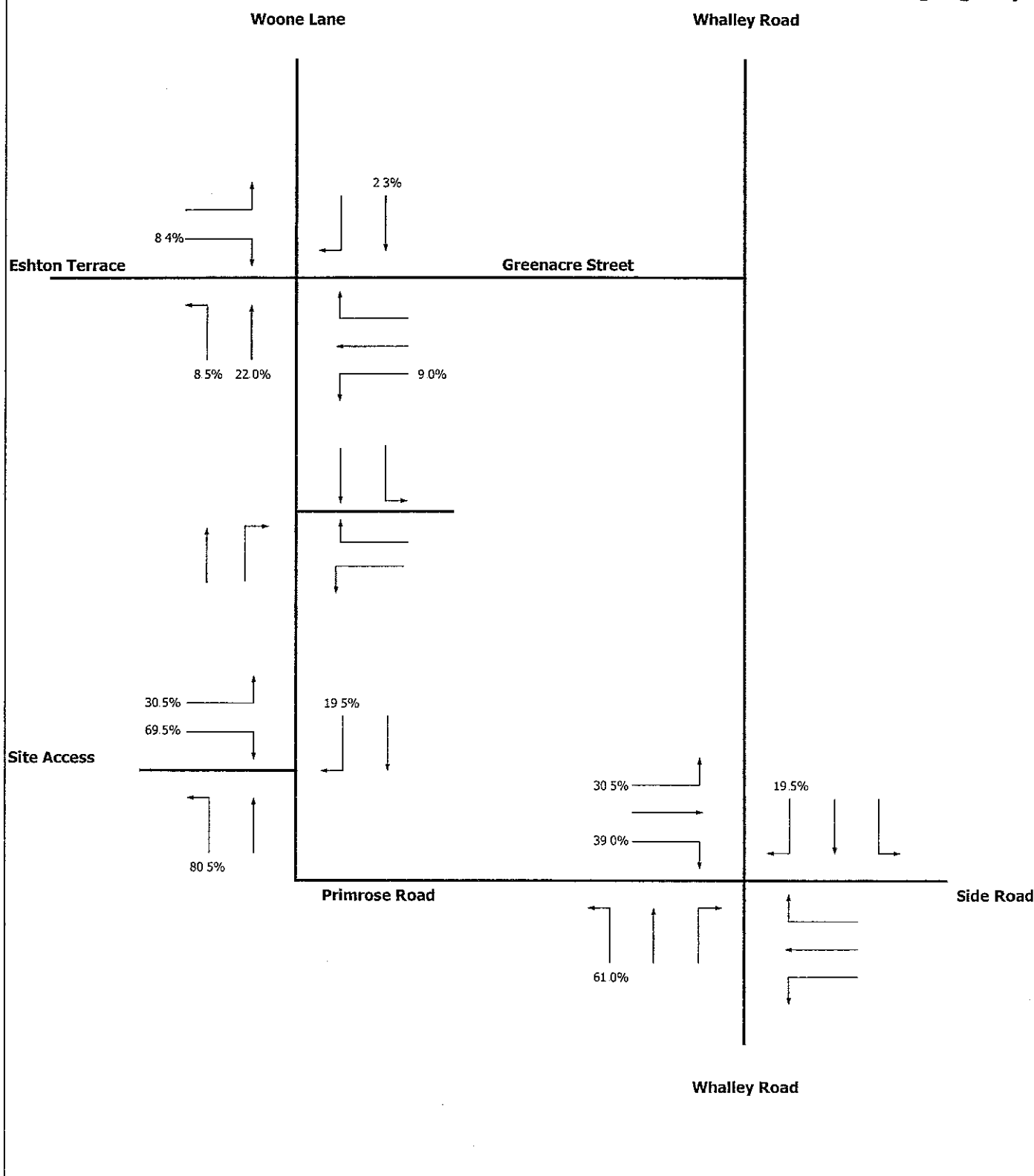


Figure 24 Proposed Trip Distribution Primrose Village Phase 2 - Weekday PM Peak

320111064P

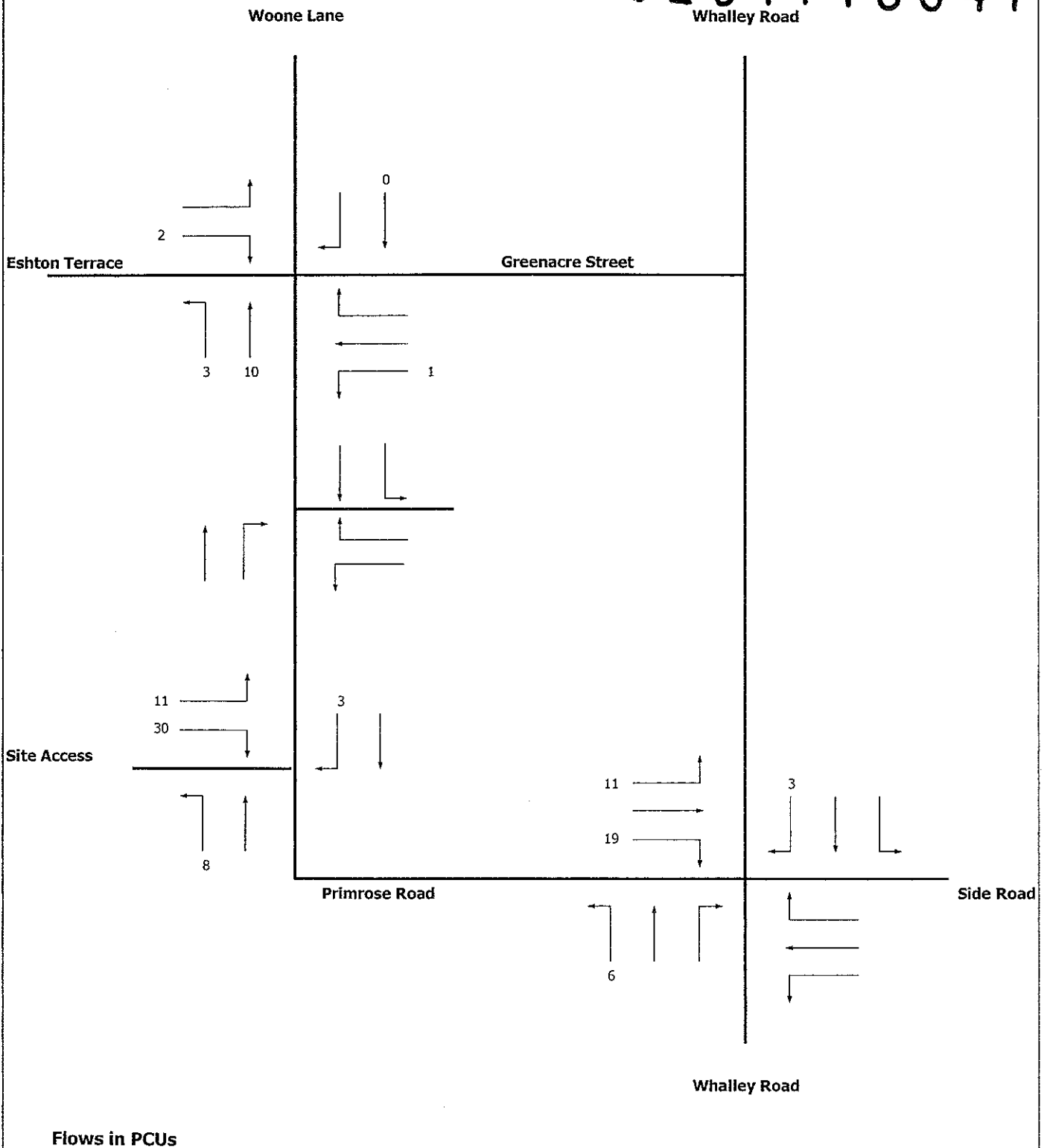


Figure 25 Proposed Development Traffic Primrose Village Phase 2 - Weekday AM Peak



320111064P

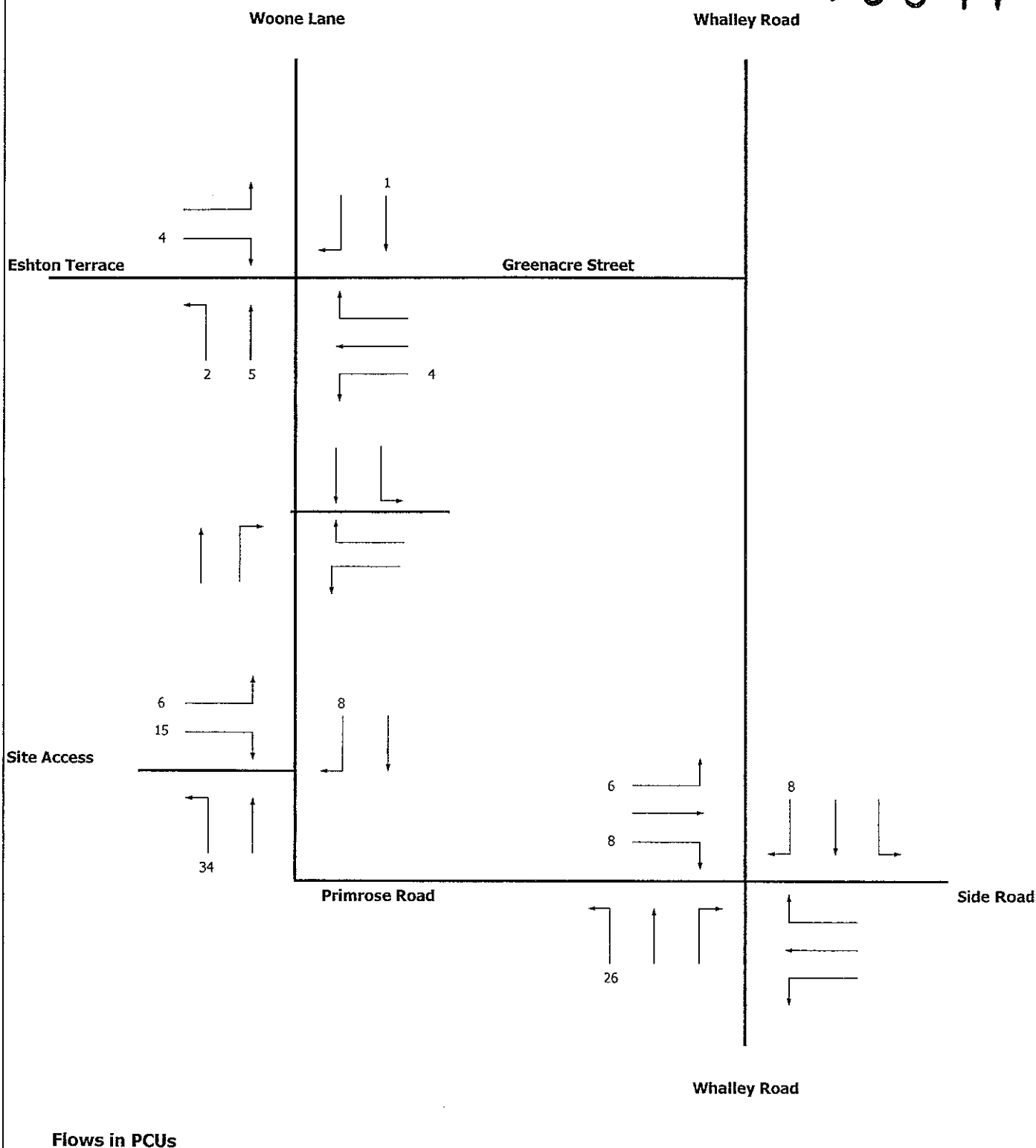


Figure 26 Proposed Development Traffic Primrose Village Phase 2 - Weekday PM Peak

320111064P

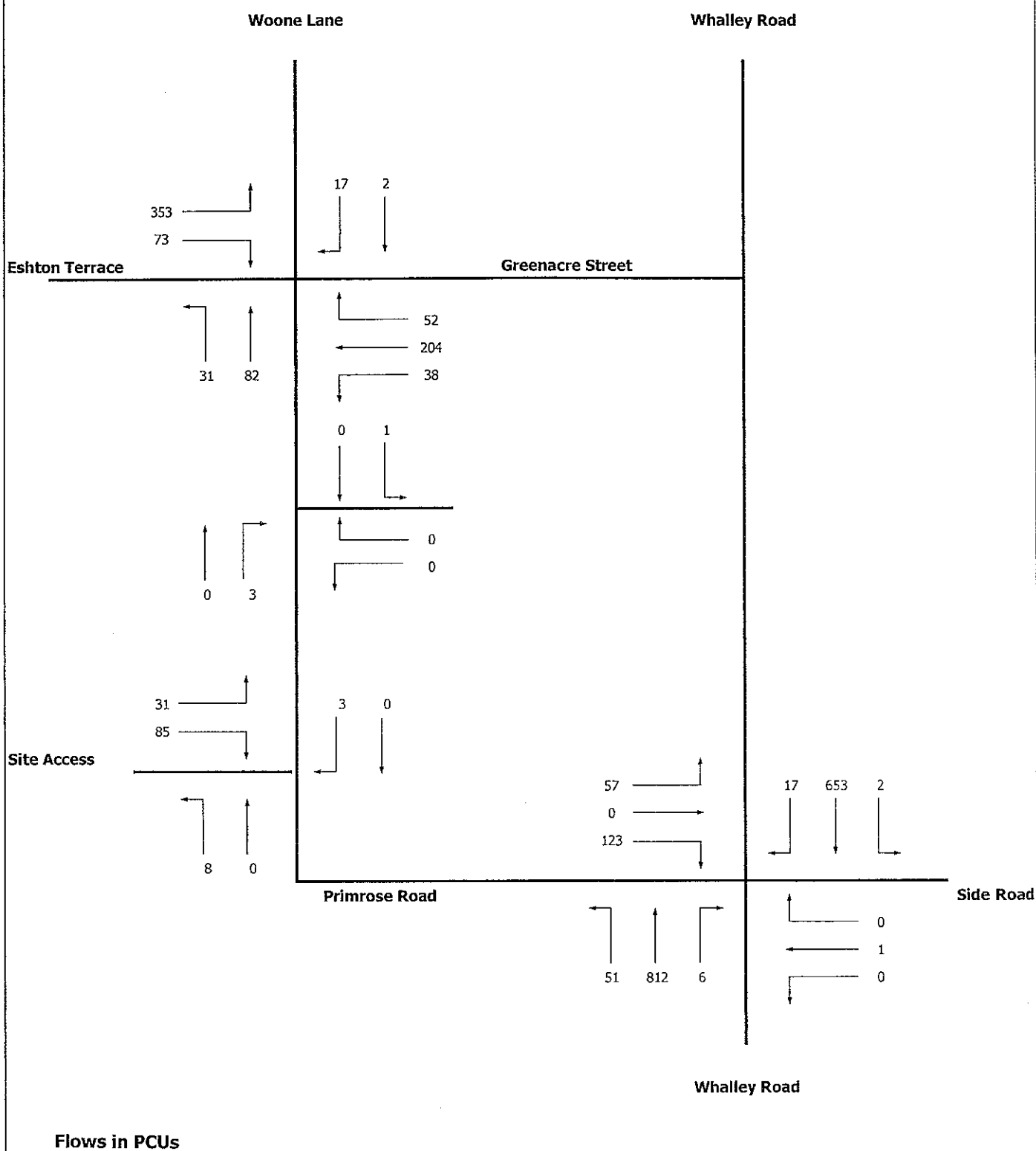


Figure 27 2013 'With Development' Flows - Weekday AM Peak



320111064P

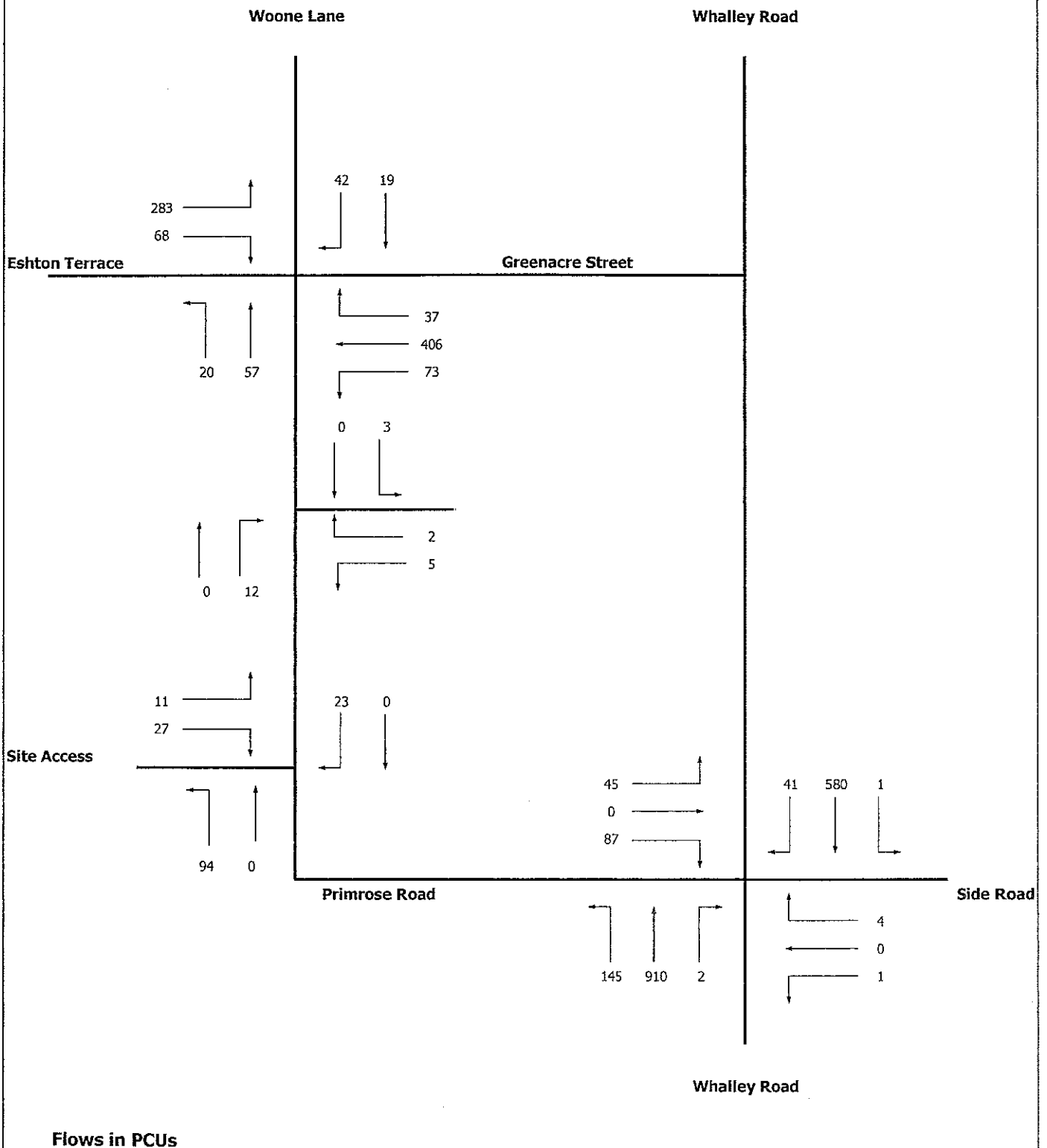


Figure 28 2013 'With Development' Flows - Weekday PM Peak



320111064P

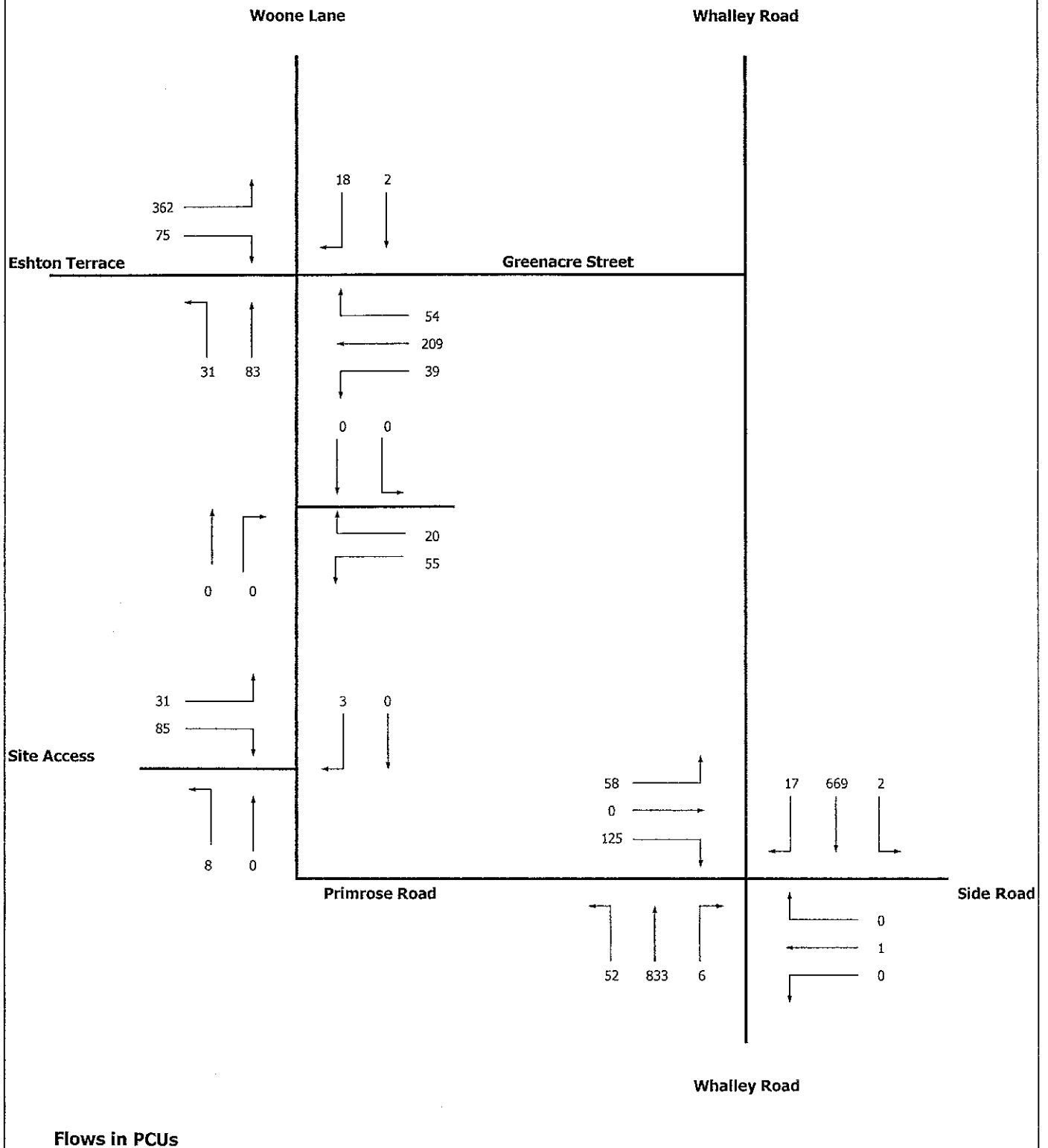


Figure 29 2016 'With Development' Flows - Weekday AM Peak

320111064P

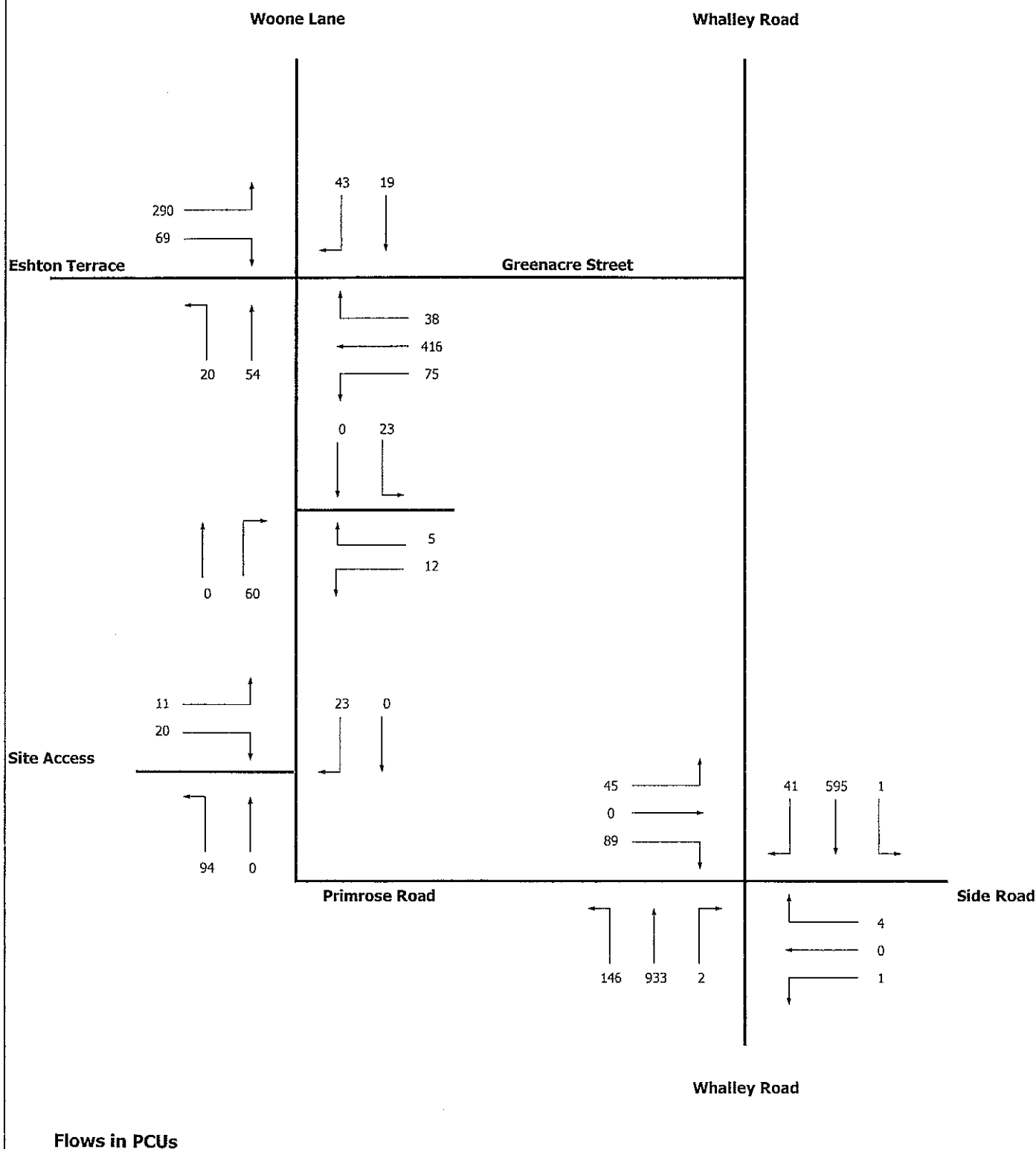
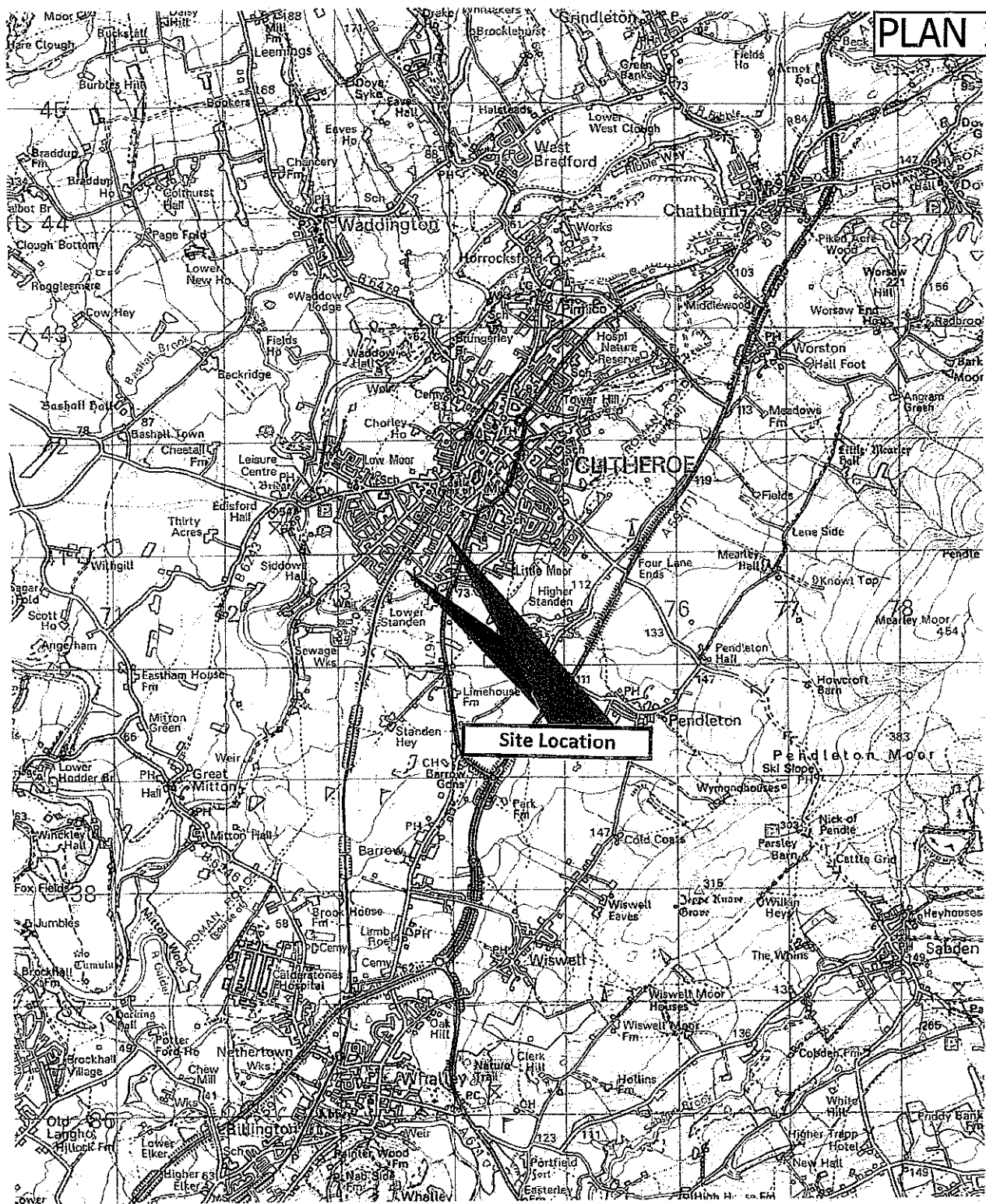


Figure 30 2016 'With Development' Flows - Weekday PM Peak

320111064P

PLANS



PLAN 1

Site Location

NOTE: THE PROPERTY OF THIS DRAWING AND DESIGN IS VESTED IN WYG ENVIRONMENT PLANNING TRANSPORT LTD. IT MUST NOT BE COPIED OR REPRODUCED IN ANY WAY WITHOUT THEIR PRIOR WRITTEN CONSENT.

320111064P

Clitheroe

Beck Development Ltd

Clitheroe
Site Location

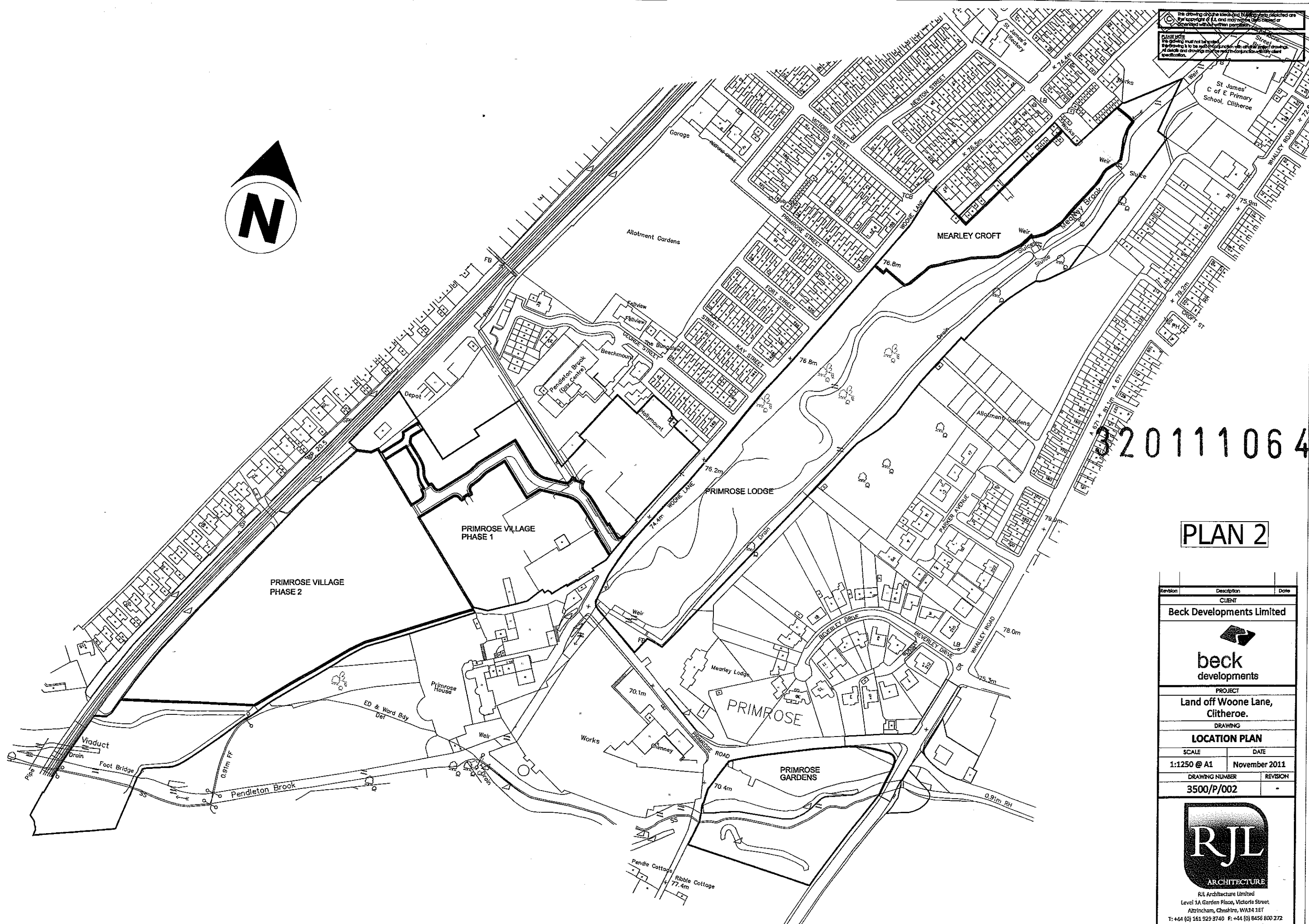
Savell Bird & Axon
part of the WYG group

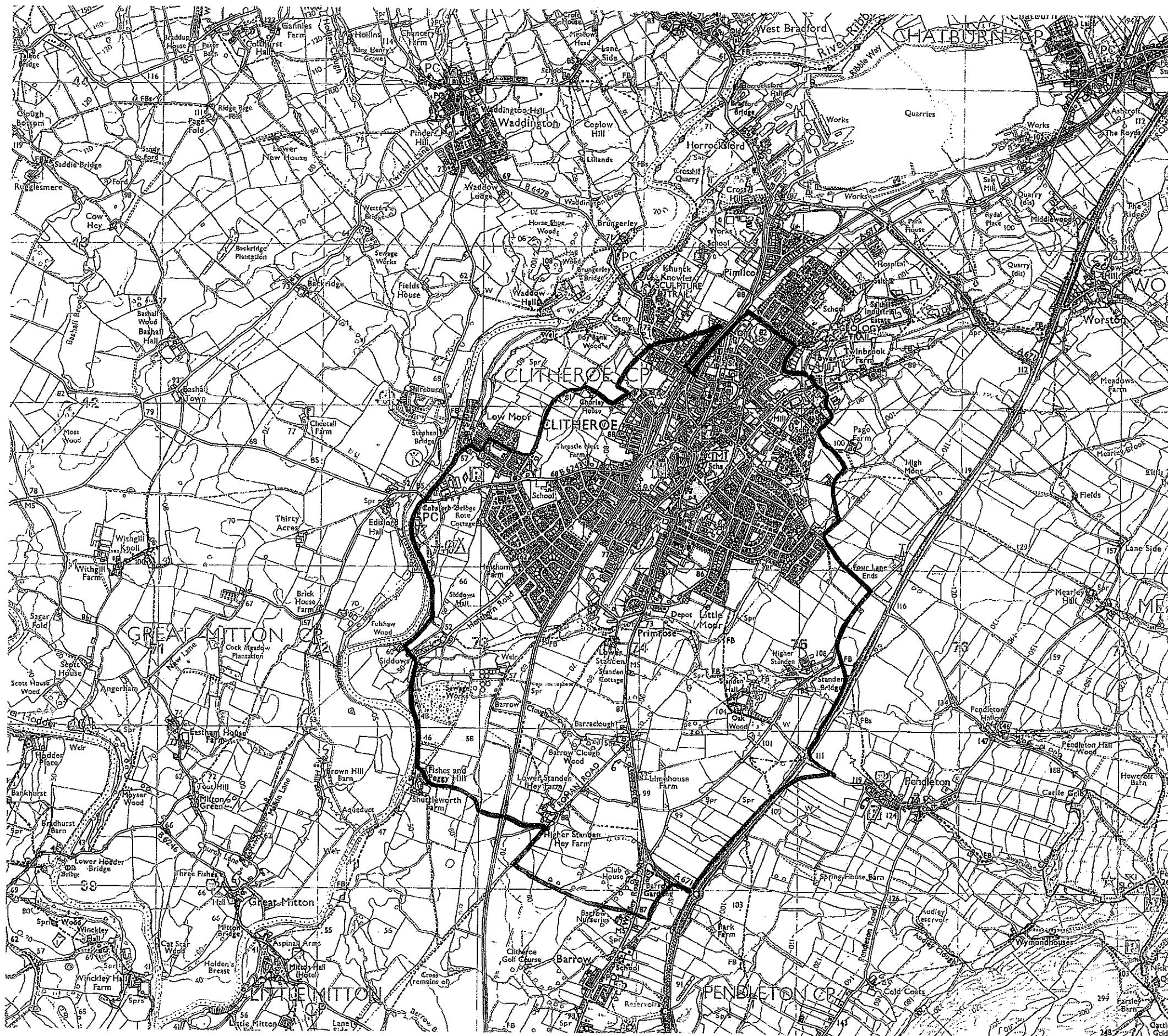


Croxley House 14 Lloyd Street Manchester M2 5ND
t: 0161 835 2400 f: 0161 835 3400 e: sba@sba.co.uk

DRAWN:	DATE:	CHECKED:	DATE:	SCALE:	DRAWING NUMBER:	REVISION:
HS	Nov 11	EH	Nov 11	1:50000	N01951/02	.

The drawing shows the proposed development and is not to be used for any other purpose without the written permission of the author.
 It is to be used in conjunction with the other drawings in the project.
 At all times the drawing must be read in conjunction with the project specification.





NOTE: THE PROPERTY OF THIS DRAWING AND DESIGN IS VESTED IN WYG ENVIRONMENT PLANNING TRANSPORT LTD.
IT MUST NOT BE COPIED OR REPRODUCED IN ANY WAY WITHOUT THEIR PRIOR WRITTEN CONSENT.

- Notes:
1. This is not a construction drawing and is intended for illustrative purposes only
 2. White lining is indicative only.

PLAN 3

320111064P

REV	DETAILS	DRAWN	CHECKED	DATE

CLIENT:
Beck Developments Ltd

PROJECT:
Clitheroe

DRAWING TITLE:
2km Pedestrian Catchment

SCALE:
1:25000

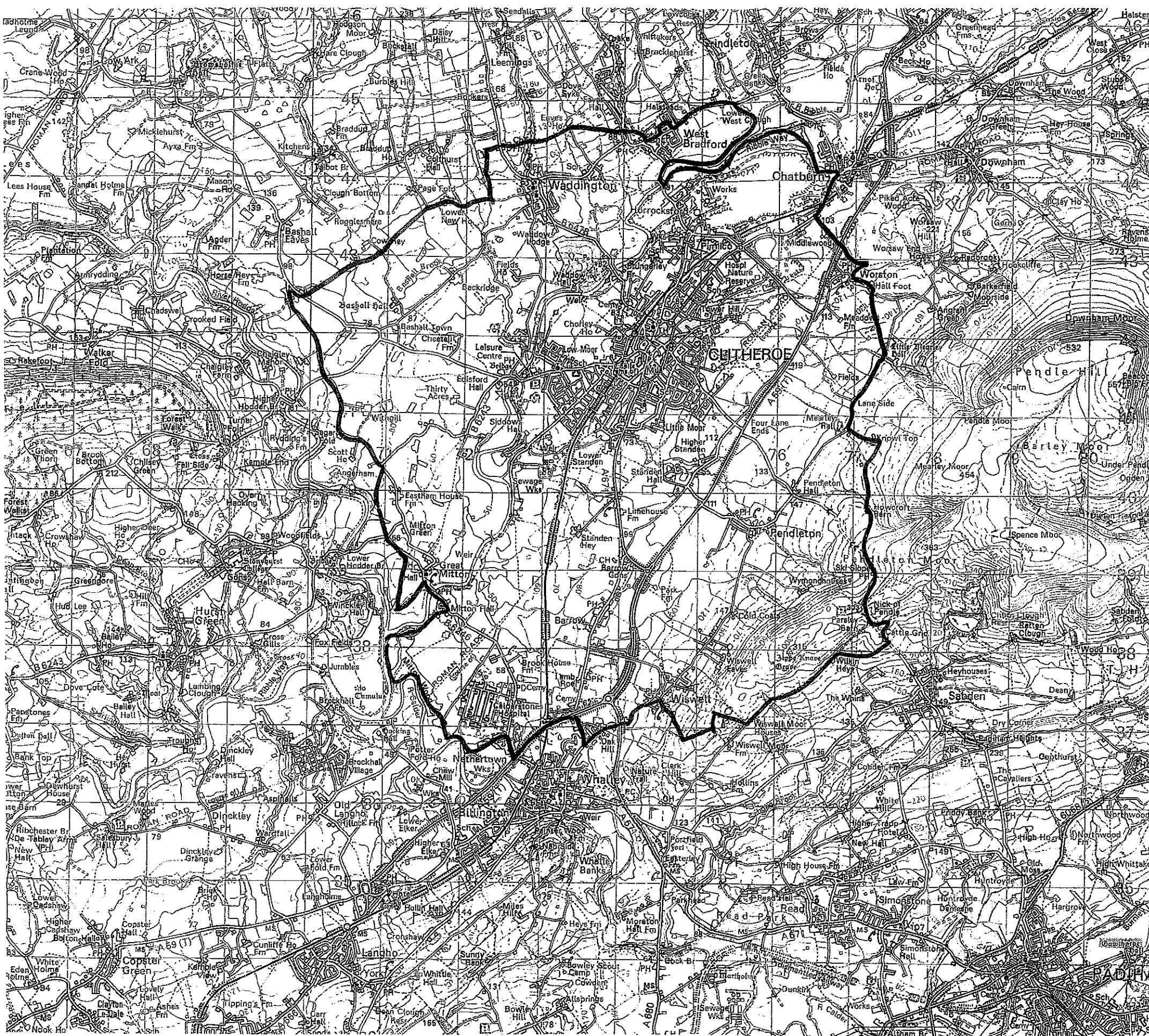
DRAWN: HS CHECKED: EH DATE: Nov 11

Savell Bird & Axon
part of the WYG group



Croxley House 14 Lloyd Street Manchester M2 5ND
t: 0161 835 2400 f: 0161 835 3400 e: sba@sba.co.uk

DRAWING NUMBER: **N01915/04** REVISION:



Notes:
1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.

PLAN 4

320111064P

REV	DETAILS	DRAWN	CHECKED	DATE
-----	---------	-------	---------	------

CLIENT:
Beck Developments Ltd

PROJECT:
Clitheroe

DRAWING TITLE:
5km Cycling Catchment

SCALE:
1:50000

DRAWN:	CHECKED:	DATE:
HS	EH	Nov 11

Savell Bird & Axon
part of the WYG group



Croxley House, 14 Lloyd Street, Manchester M2 5ND
t: 0161 835 2400 f: 0161 835 3400 e: sba@sba.co.uk

DRAWING NUMBER:
N01915/05

REVISION:

NOTE: THE PROPERTY OF THIS DRAWING AND DESIGN IS VESTED IN WYG ENVIRONMENT PLANNING TRANSPORT LTD.
IT MUST NOT BE COPIED OR REPRODUCED IN ANY WAY WITHOUT THEIR PRIOR WRITTEN CONSENT.

© This drawing and the ideas and building works depicted are the copyright of RJA and may not be used copied or amended without written permission.

PLEASE NOTE:
This drawing must not be scaled.
This drawing is to be read in conjunction with all other project drawings.
All details and drawings must be read in conjunction with any client specification.

PLAN 5



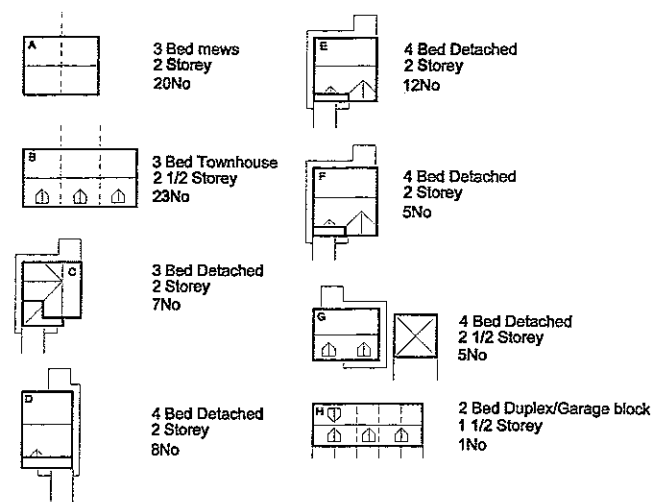
320111064P

Revision	Description	Date
CLIENT		
BECK DEVELOPMENTS LTD		
PROJECT		
Proposed Development at Land to the rear of No's 59-97 Woone Lane - Clitheroe		
DRAWING		
PLANNING LAYOUT		
SCALE		DATE
1:500 @ A3		November 2011
DRAWING NUMBER		REVISION
3501/P/001		-

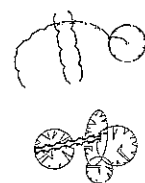


RJA Architecture Limited
Level 1A Garden Place
Victoria Street
Altrincham,
Cheshire, WA14 1ET
T: +44 (0) 161 929 3740
F: +44 (0) 8456 800 272
E: info@rjaarchitecture.co.uk

House accommodation mix



TOTAL 81

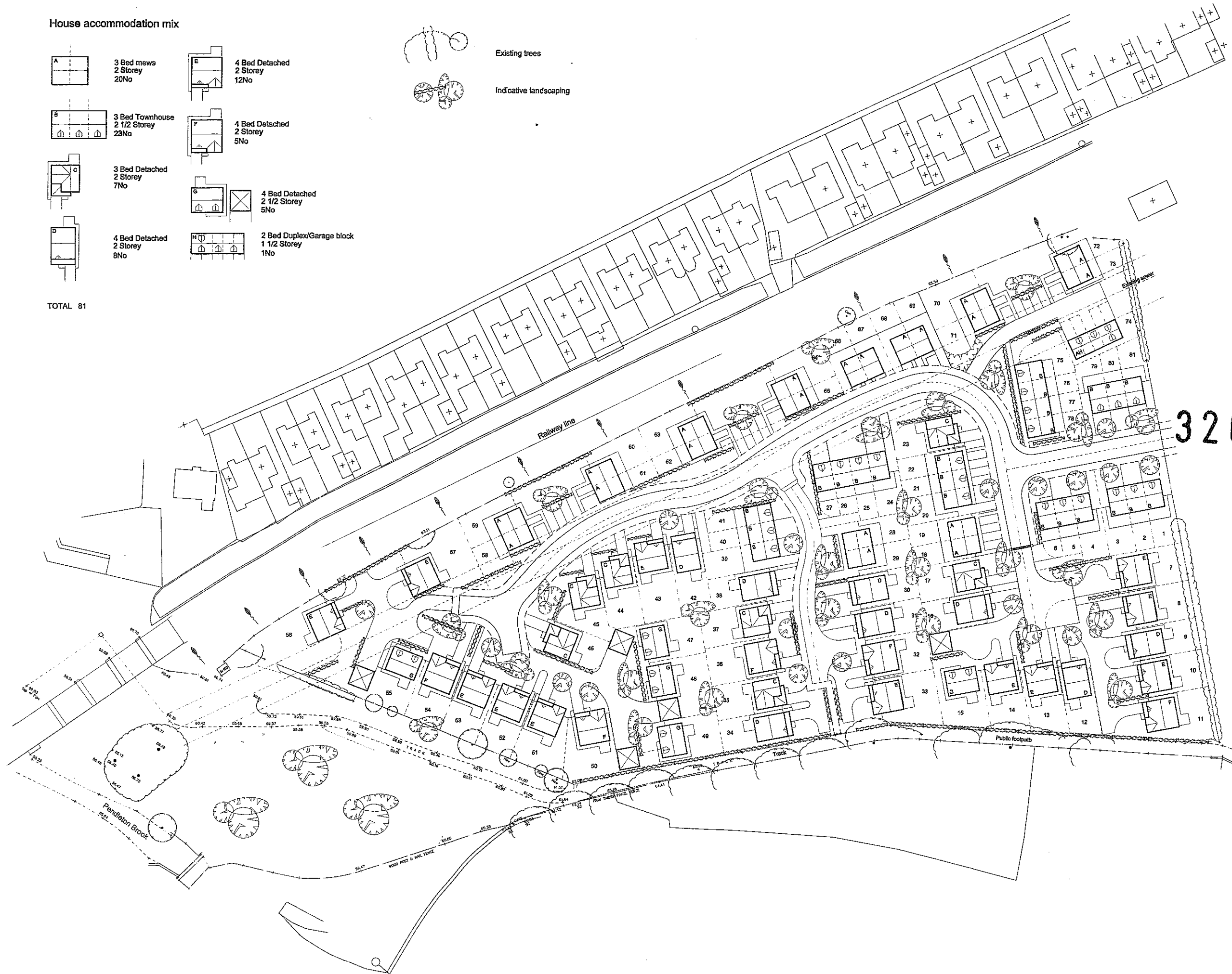
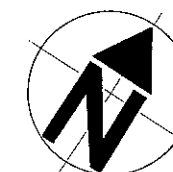


Existing trees

Indicative landscaping

This drawing and the ideas and building works depicted are the copyright of RJL and may not be used copied or amended without written permission.
 PLEASE NOTE
 This drawing must not be copied.
 This drawing is to be read in conjunction with all other project drawings.
 All details and drawings must be read in conjunction with any client specification.

PLAN 6



320111064 P

Revision	Description	Date
CLIENT		
Beck Developments Limited		
		
beck developments		
PROJECT		
Land off Woone Lane, Clitheroe.		
DRAWING		
PLANNING LAYOUT		
SCALE	DATE	
1:500 @ A1	November 2011	
DRAWING NUMBER	REVISION	
3500/P/001	-	
		
RJL Architecture Limited Level 1A Garden Place, Victoria Street Altrincham, Cheshire, WA14 1ET T: +44 (0) 161 929 3740 F: +44 (0) 8456 800 272 E-mail: info@rjlarchitecture.co.uk		



Notes:

1
2

PLAN 7

320111064 P

REV	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

Beck Developments

PROJECT:

Clitheroe

DRAWING TITLE:

Proposed Improvements to
Whalley Road / Primrose
Road Junction

SCALES:

1:500 at A3

DRAWN:

DB

CHECKED:

DATE:

Nov 2011

Savell Bird & Axon

part of the WYG group



Croxley House 14 Lloyd Street Manchester M2 5ND
t: 0161 835 2400 f: 0161 835 3400 e: sba@sba.co.uk

DRAWING NUMBER:

N01951/06

REVISION:

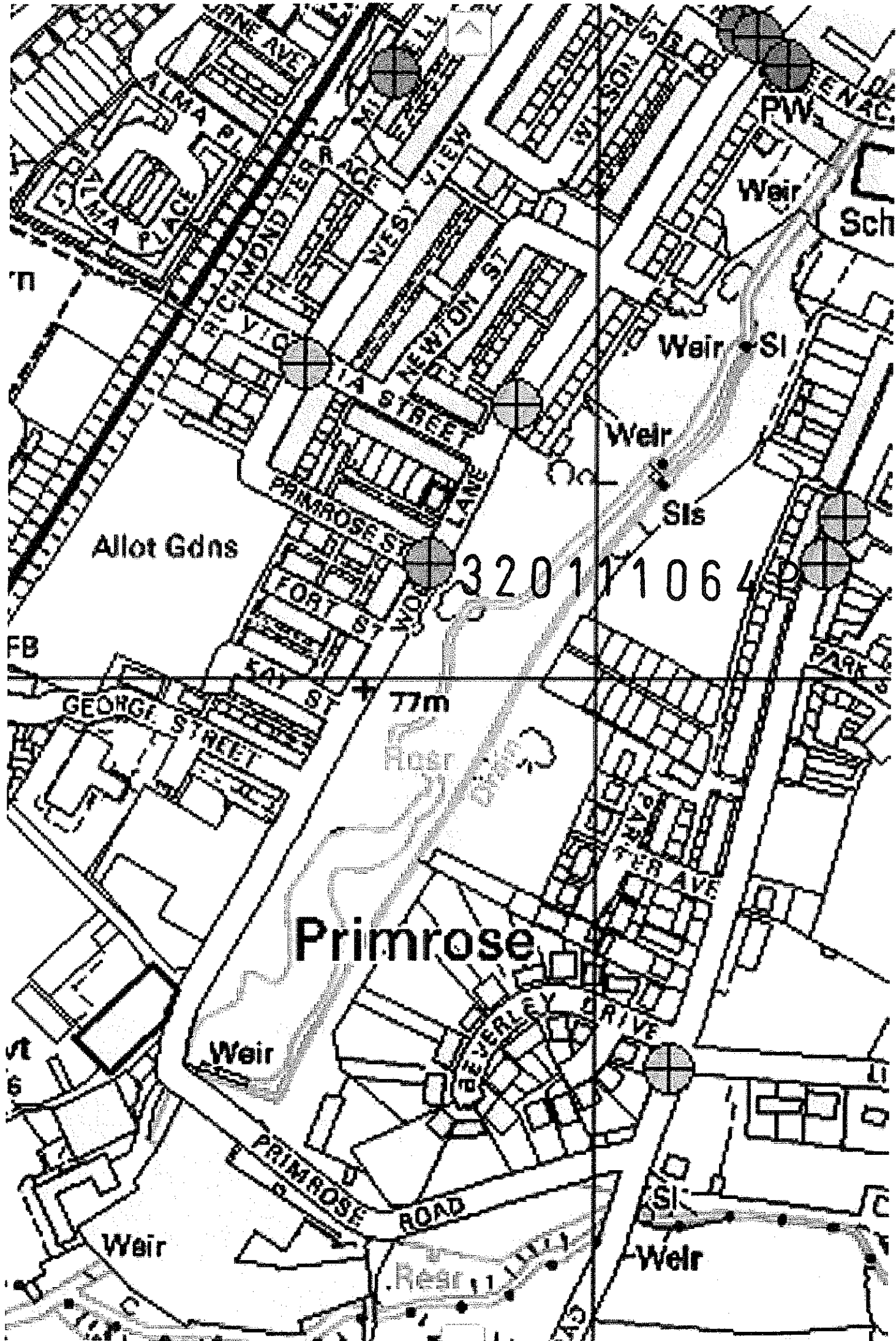
APPENDICES

320111064P

320111064P

APPENDIX 1

Accident Data



Allot Gdns

320111064

77m

Primrose

Weir

PRIMROSE ROAD

Weir

Weir

PW

Weir

Weir

Weir

Sl

Sls

GEORGE STREET

Foot

Foot

Sch

PARK

Sl

C

32011064P

GREEN

El
Sub Sta

PW

73.8m

24
26

15

WOOLFE

ON TERRACE

12

6

4

2

3

1

1

320111064P

APPENDIX 2

TEMPRO Output

320111064P

Dataset Version: 61
 Result Type: Trip ends by time period
 Base Year: 2008
 Future Year: 2013
 Trip Purpose Group: All purposes
 Time Period: AM Peak
 Trip End Type: Origin/Destination
 Alternative Assumptions applied: No

Growth Factor

Area Description		All purposes
Level	Name	Origin Destination
District	Clitheroe	1.0171 1.048

Base Year - Future Year

Area Description		All purposes
Level	Name	Origin Destination
District	Clitheroe	79 226

Base Year

Area Description		All purposes
Level	Name	Origin Destination
District	Clitheroe	4580 4709

Future Year 2013

Area Description		All purposes
Level	Name	Origin Destination
District	Clitheroe	4659 4935

Level	Area	Local Growth Figure
District	Clitheroe	1.0283 NTM AF09 Dataset

320111064P

Dataset Version: 61
 Result Type: Trip ends by time period
 Base Year: 2008
 Future Year: 2013
 Trip Purpose Group: All purposes
 Time Period: PM Peak
 Trip End Type: Origin/Destination
 Alternative Assumptions applied: No

Growth Factor

Area Description		All purposes
Level	Name	Origin Destination
District	Clitheroe	1.0462 1 0261

Base Year - Future Year

Area Description		All purposes
Level	Name	Origin Destination
District	Clitheroe	254 140

Base Year

Area Description		All purposes
Level	Name	Origin Destination
District	Clitheroe	5481 5350

Future Year 2013

Area Description		All purposes
Level	Name	Origin Destination
District	Clitheroe	5735 5490

Level	Area	Local Growth Figure
District	Clitheroe	1.0319 NTM AF09 Dataset

Dataset Version:

Result Type:

Base Year:

Future Year:

Trip Purpose Group:

Time Period:

Trip End Type:

Alternative Assumptions applied:

Trip ends by time period

61

2008

2018

All purposes

AM Peak

Origin/Destination

No

320111064P

Growth Factor

Area Description

Level

District

Name

Clitheroe

All purposes

Origin Destination

1.0376 1.0873

Base Year - Future Year

Area Description

Level

District

Name

Clitheroe

All purposes

Origin Destination

172 411

Base Year

Area Description

Level

District

Name

Clitheroe

All purposes

Origin Destination

4580 4709

Future Year 2016

Area Description

Level

District

Name

Clitheroe

All purposes

Origin Destination

4753 5120

Level

District

Area

Clitheroe

Local Growth Figure

1.0536 NTM AF09 Dataset

Dataset Version:

Result Type:

Base Year:

Future Year:

Trip Purpose Group:

Time Period:

Trip End Type:

Alternative Assumptions applied:

61
Trip ends by time period
2008
2018

All purposes
PM Peak
Origin/Destination
No

320111064P

Growth Factor

Area Description

Level

District

Name

Clitheroe

All purposes

Origin

Destination

1.0833

1.051

Base Year - Future Year

Area Description

Level

District

Name

Clitheroe

All purposes

Origin

Destination

457

273

Base Year

Area Description

Level

District

Name

Clitheroe

All purposes

Origin

Destination

5481

5350

Future Year 2016

Area Description

Level

District

Name

Clitheroe

All purposes

Origin

Destination

5938

5624

Level

District

Area

Clitheroe

Local Growth Figure

1.0583 NTM AF09 Dataset

320111064P

APPENDIX 3

Multi-Modal TRICS Output

320111064P

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED

MULTI-MODAL CYCLISTSSelected regions and areas:

03 SOUTH WEST	
WL WILTSHIRE	1 days
04 EAST ANGLIA	
SF SUFFOLK	1 days
06 WEST MIDLANDS	
SH SHROPSHIRE	1 days
WM WEST MIDLANDS	1 days
WO WORCESTERSHIRE	1 days
08 NORTH WEST	
CH CHESHIRE	1 days
LC LANCASHIRE	1 days
09 NORTH	
CB CUMBRIA	3 days
10 WALES	
WR WREXHAM	1 days
11 SCOTLAND	
HI HIGHLAND	2 days

Filtering Stage 2 selection:

Parameter: Number of dwellings
 Range: 9 to 101 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/03 to 13/05/11

Selected survey days:

Monday	6 days
Tuesday	3 days
Thursday	2 days
Friday	2 days

Selected survey types:

Manual count	13 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	13
--------------	----

Selected Location Sub Categories:

Residential Zone	8
Out of Town	1
No Sub Category	4

320111064P

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL CYCLISTS

Calculation factor: **1 DWELLS**

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	13	61	0.005	13	61	0.013	13	61	0.018
08:00 - 09:00	13	61	0.011	13	61	0.021	13	61	0.032
09:00 - 10:00	13	61	0.005	13	61	0.005	13	61	0.010
10:00 - 11:00	13	61	0.004	13	61	0.006	13	61	0.010
11:00 - 12:00	13	61	0.006	13	61	0.001	13	61	0.007
12:00 - 13:00	13	61	0.004	13	61	0.003	13	61	0.007
13:00 - 14:00	13	61	0.004	13	61	0.004	13	61	0.008
14:00 - 15:00	13	61	0.003	13	61	0.005	13	61	0.008
15:00 - 16:00	13	61	0.013	13	61	0.000	13	61	0.013
16:00 - 17:00	13	61	0.016	13	61	0.010	13	61	0.026
17:00 - 18:00	13	61	0.005	13	61	0.010	13	61	0.015
18:00 - 19:00	13	61	0.008	13	61	0.008	13	61	0.016
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.084				0.086	0.170	

Parameter summary

Trip rate parameter range selected: 9 - 101 (units:)
 Survey date range: 01/01/03 - 13/05/11
 Number of weekdays (Monday-Friday): 13
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 3

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED

MULTI-MODAL PEDESTRIANSSelected regions and areas:

03 SOUTH WEST	
WL WILTSHIRE	1 days
04 EAST ANGLIA	
SF SUFFOLK	1 days
06 WEST MIDLANDS	
SH SHROPSHIRE	1 days
WM WEST MIDLANDS	1 days
WO WORCESTERSHIRE	1 days
08 NORTH WEST	
CH CHESHIRE	1 days
LC LANCASHIRE	1 days
09 NORTH	
CB CUMBRIA	3 days
10 WALES	
WR WREXHAM	1 days
11 SCOTLAND	
HI HIGHLAND	2 days

Filtering Stage 2 selection:

Parameter: Number of dwellings
 Range: 9 to 101 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/03 to 13/05/11

Selected survey days:

Monday	6 days
Tuesday	3 days
Thursday	2 days
Friday	2 days

Selected survey types:

Manual count	13 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	13
--------------	----

Selected Location Sub Categories:

Residential Zone	8
Out of Town	1
No Sub Category	4

320111064P

TRICS 2011(b)v6.8.2 101011 B15.01 (C) 2011 JMP Consultants Ltd on behalf of the TRICS Consortium

Friday 11/11/11

Clitheroe, Pedestrians

Page 2

Savell Bird and Axon Lloyd Street Manchester

Licence No: 705118

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	13	61	0.020	13	61	0.047	13	61	0.067
08:00 - 09:00	13	61	0.055	13	61	0.239	13	61	0.294
09:00 - 10:00	13	61	0.055	13	61	0.045	13	61	0.100
10:00 - 11:00	13	61	0.031	13	61	0.045	13	61	0.076
11:00 - 12:00	13	61	0.049	13	61	0.067	13	61	0.116
12:00 - 13:00	13	61	0.039	13	61	0.042	13	61	0.081
13:00 - 14:00	13	61	0.049	13	61	0.040	13	61	0.089
14:00 - 15:00	13	61	0.055	13	61	0.072	13	61	0.127
15:00 - 16:00	13	61	0.166	13	61	0.082	13	61	0.248
16:00 - 17:00	13	61	0.083	13	61	0.048	13	61	0.131
17:00 - 18:00	13	61	0.079	13	61	0.062	13	61	0.141
18:00 - 19:00	13	61	0.075	13	61	0.073	13	61	0.148
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.756				0.862	1.618	

Parameter summary

Trip rate parameter range selected: 9 - 101 (units:)
 Survey date range: 01/01/03 - 13/05/11
 Number of weekdays (Monday-Friday): 13
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 3

320111064P

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL

Category : A - HOUSES PRIVATELY OWNED

VEHICLESSelected regions and areas:

02	SOUTH EAST	
	BD BEDFORDSHIRE	2 days
03	SOUTH WEST	
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	SF SUFFOLK	2 days
05	EAST MIDLANDS	
	LN LINCOLNSHIRE	1 days
	NT NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	WM WEST MIDLANDS	2 days
	WO WORCESTERSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
	LC LANCASHIRE	1 days
09	NORTH	
	CB CUMBRIA	1 days
	TW TYNE & WEAR	1 days
10	WALES	
	WR WREXHAM	1 days
11	SCOTLAND	
	FI FIFE	1 days
	HI HIGHLAND	1 days
	SR STIRLING	1 days

320111064P

Filtering Stage 2 selection:

Parameter: Number of dwellings
Range: 77 to 174 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 11/06/09

Selected survey days:

Monday	7 days
Tuesday	5 days
Wednesday	3 days
Thursday	2 days
Friday	3 days

Selected survey types:

Manual count	20 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	8
Edge of Town	12

Selected Location Sub Categories:

Residential Zone	15
Out of Town	1
No Sub Category	4

320111064P

TRICS 2011(a)v6.7.1 221210 B14.45 (C) 2011 JMP Consultants Ltd on behalf of the TRICS Consortium

Tuesday 01/03/11

N01951 - Proposed Resi Dev - weekday

Page 3

Savell Bird and Axon Lloyd Street Manchester

Licence No: 705118

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

VEHICLES**Calculation factor: 1 DWELLS****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	20	111	0.069	20	111	0.301	20	111	0.370
08:00 - 09:00	20	111	0.167	20	111	0.432	20	111	0.599
09:00 - 10:00	20	111	0.182	20	111	0.236	20	111	0.418
10:00 - 11:00	20	111	0.167	20	111	0.197	20	111	0.364
11:00 - 12:00	20	111	0.196	20	111	0.188	20	111	0.384
12:00 - 13:00	20	111	0.214	20	111	0.197	20	111	0.411
13:00 - 14:00	20	111	0.204	20	111	0.197	20	111	0.401
14:00 - 15:00	20	111	0.200	20	111	0.206	20	111	0.406
15:00 - 16:00	20	111	0.302	20	111	0.227	20	111	0.529
16:00 - 17:00	20	111	0.345	20	111	0.198	20	111	0.543
17:00 - 18:00	20	111	0.387	20	111	0.230	20	111	0.617
18:00 - 19:00	20	111	0.289	20	111	0.232	20	111	0.521
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			2.722			2.841			5.563

Parameter summary

Trip rate parameter range selected:	77 - 174 (units:)
Survey date range:	01/01/02 - 11/06/09
Number of weekdays (Monday-Friday):	20
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL

Category : A - HOUSES PRIVATELY OWNED

MULTI-MODAL PUBLIC TRANSPORT USERSSelected regions and areas:

03	SOUTH WEST	
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	SF SUFFOLK	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	WM WEST MIDLANDS	1 days
	WO WORCESTERSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days
	LC LANCASHIRE	1 days
09	NORTH	
	CB CUMBRIA	3 days
10	WALES	
	WR WREXHAM	1 days
11	SCOTLAND	
	HI HIGHLAND	2 days

Filtering Stage 2 selection:

Parameter: Number of dwellings

Range: 9 to 101 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/03 to 13/05/11

Selected survey days:

Monday	6 days
Tuesday	3 days
Thursday	2 days
Friday	2 days

Selected survey types:

Manual count	13 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	13
--------------	----

Selected Location Sub Categories:

Residential Zone	8
Out of Town	1
No Sub Category	4

3201110640

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: **1 DWELLS**

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	13	61	0.001	13	61	0.011	13	61	0.012
08:00 - 09:00	13	61	0.010	13	61	0.013	13	61	0.023
09:00 - 10:00	13	61	0.005	13	61	0.003	13	61	0.008
10:00 - 11:00	13	61	0.003	13	61	0.001	13	61	0.004
11:00 - 12:00	13	61	0.008	13	61	0.004	13	61	0.012
12:00 - 13:00	13	61	0.000	13	61	0.004	13	61	0.004
13:00 - 14:00	13	61	0.005	13	61	0.011	13	61	0.016
14:00 - 15:00	13	61	0.010	13	61	0.006	13	61	0.016
15:00 - 16:00	13	61	0.008	13	61	0.004	13	61	0.012
16:00 - 17:00	13	61	0.008	13	61	0.006	13	61	0.014
17:00 - 18:00	13	61	0.018	13	61	0.001	13	61	0.019
18:00 - 19:00	13	61	0.009	13	61	0.005	13	61	0.014
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.085				0.069	0.154	

Parameter summary

Trip rate parameter range selected: 9 - 101 (units:)
 Survey date range: 01/01/03 - 13/05/11
 Number of weekdays (Monday-Friday): 13
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 3

320111064P

APPENDIX 4

PICADY Output

320111064P

IRI LIMITED

(C) COPYRIGHT 2006

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4 0 (SEPT 2008)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
BY PERMISSION OF THE CONTROLLER OF HMSO

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
IRI SOFTWARE BUREAU
TEL: CROWHORNE (01344) 770758, FAX: 770356
EMAIL: Software@trl.co.uk

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

"J:\2010\N01951 Clitheroe\Picady\Primrose Rd_Whalley Rd - AM PK vpi"
(drive-on-the-left) at 11:58:28 on Monday, 14 November 2011

RUN INFORMATION

RUN FILE : Primrose Road_Whalley Road
LOCATION : Clitheroe
DATE : 28/02/11
CLIENT :
ENUMERATOR : steven.ho [27-WRK-SBA-021]
JOB NUMBER : N01951
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I
I
I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Whalley Road North
ARM B IS Side Road
ARM C IS Whalley Road South
ARM D IS Primrose Road

STREAM LABELLING CONVENTION

320111064P

SIREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
 SIREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
 EIC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 7.75 M.	I	(W) 7.75 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.20 M.	I	(WA-D) 2.20 M.	I
I	- VISIBILITY	I	(VC-B) 90.00 M.	I	(VA-D) 90.00 M.	I
I	- BLOCKS TRAFFIC	I	YES	I	YES	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 19.0 M.	I	(VD-A) 50.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 17.0 M.	I	(VD-C) 16.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) 3.60 M.	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) 0.00 M.	I
I	WIDTH AT 0 M FROM JUNCTION	I	8.00 M.	I	-	I
I	WIDTH AT 5 M FROM JUNCTION	I	4.80 M.	I	-	I
I	WIDTH AT 10 M FROM JUNCTION	I	3.20 M.	I	-	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.00 M.	I	-	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.30 M.	I	-	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	-	I

SLOPES AND INTERCEPT

(NB: Streams may be combined, in which case capacity will be adjusted)

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D	STREAM D-B	I
I	0.00	0.00	0.00		I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	672.09	0.24	0.24	0.10	0.10	I

320111064P

D-BC Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-BC	STREAM C-A	STREAM B-A	STREAM C-D	STREAM B-D	I
I	531.70	0.23	0.23	0.09	0.09	I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM A-C	STREAM A-B	STREAM A-D	STREAM A-D	I
I	0.14	0.14	0.32		I

C-B Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-B	STREAM A-C	STREAM A-B	STREAM D-C	STREAM D-B	I
I	626.08	0.22	0.22	0.22	0.22	I

A-D Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM A-D	STREAM C-A	STREAM C-D	STREAM B-A	STREAM B-D	I
I	626.08	0.22	0.22	0.22	0.22	I

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I
I	D	I	100	I

Demand set: AM 2016 With Dev

TIME PERIOD BEGINS 08.15 AND ENDS 09.45

LENGTH OF TIME PERIOD - 90 MIN

LENGTH OF TIME SEGMENT - 15 MIN

DEMAND FLOW PROFILES ARE SYNTHESIZED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN	I	RALE OF FLOW (VEH/MIN)	I
I	ARM	I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER	I	I PEAK I OF PEAK I PEAK	I
I	I	I TO RISE I IS REACHED I FALLING	I	I I I	I
I	ARM A	I 15.00 I 45.00 I 75.00	I	8.57 I 12.86 I 8.57	I
I	ARM B	I 15.00 I 45.00 I 75.00	I	0.01 I 0.02 I 0.01	I
I	ARM C	I 15.00 I 45.00 I 75.00	I	11.05 I 16.58 I 11.05	I
I	ARM D	I 15.00 I 45.00 I 75.00	I	1.90 I 2.85 I 1.90	I

Demand set: AM 2016 With Dev

I	I	TURNING PROPORTIONS	I
---	---	---------------------	---

320111064P

TIME	TURNING COUNTS (PERCENTAGE OF H.V.S)							
	FROM/TO	ARM A	ARM B	ARM C	ARM D			
08.15 - 08.30	ARM A	0.000	0.003	0.975	0.022			
		0.0	2.0	669.0	15.0			
		(0.0)	(10.0)	(10.0)	(10.0)			
	ARM B	0.000	0.000	0.000	1.000			
		0.0	0.0	0.0	0.0			
		(10.0)	(0.0)	(10.0)	(10.0)			
	ARM C	0.942	0.007	0.000	0.051			
		833.0	6.0	0.0	45.0			
		(10.0)	(10.0)	(0.0)	(10.0)			
	ARM D	0.303	0.000	0.697	0.000			
		46.0	0.0	106.0	0.0			
		(10.0)	(10.0)	(10.0)	(0.0)			

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
 DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SEIS
 AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESIRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMEIRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	0.00	6.29	0.000		0.00	0.00	0.0		0.00
B-AD	0.01	4.34	0.003		0.00	0.00	0.0		0.23
A-BCD	0.19	7.01	0.027		0.00	0.03	0.4		0.15
D-ABC	1.91	5.03	0.379		0.00	0.59	8.1		0.31
C-ABD	0.08	7.30	0.010		0.00	0.01	0.2		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESIRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMEIRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	0.00	5.92	0.000		0.00	0.00	0.0		0.00
B-AD	0.01	3.58	0.004		0.00	0.00	0.1		0.28
A-BCD	0.22	6.53	0.034		0.03	0.04	0.6		0.16
D-ABC	2.28	4.30	0.530		0.59	1.06	14.5		0.48
C-ABD	0.09	6.87	0.013		0.01	0.01	0.2		0.15

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESIRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMEIRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	0.00	5.40	0.000		0.00	0.00	0.0		0.00
B-AD	0.02	2.54	0.007		0.00	0.01	0.1		0.40
A-BCD	0.28	5.87	0.047		0.04	0.05	0.8		0.18
D-ABC	2.79	3.26	0.857		1.06	3.67	42.1		1.31
C-ABD	0.11	6.28	0.018		0.01	0.02	0.3		0.16

TIME	DEMAND	CAPACITY	DEMAND/	PEDESIRIAN	SIARI	END	DELAY	GEOMEIRIC DELAY	AVERAGE DELAY
------	--------	----------	---------	------------	-------	-----	-------	-----------------	---------------

320111064P

	(VEH/MIN)	(VEH/MIN)	CAPACIITY (RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)	
I										I
I										I
I	09.00-09.15									I
I	B-C	0.00	5.38	0.000	0.00	0.00	0.0		0.00	I
I	B-AD	0.02	2.52	0.007	0.01	0.01	0.1		0.40	I
I	A-BCD	0.28	5.87	0.047	0.05	0.05	0.8		0.18	I
I	D-ABC	2.79	3.26	0.857	3.67	4.36	60.9		1.71	I
I	C-ABD	0.11	6.25	0.018	0.02	0.02	0.3		0.16	I
I										I

	TIME	DEMAND (VEH/MIN)	CAPACIITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESIRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMEIRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	
I											I
I											I
I	09.15-09.30										I
I	B-C	0.00	5.88	0.000		0.00	0.00	0.0		0.00	I
I	B-AD	0.01	3.54	0.004		0.01	0.00	0.1		0.28	I
I	A-BCD	0.22	6.53	0.034		0.05	0.04	0.6		0.16	I
I	D-ABC	2.28	4.30	0.530		4.36	1.21	23.5		0.60	I
I	C-ABD	0.09	6.83	0.013		0.02	0.01	0.2		0.15	I
I											I

	TIME	DEMAND (VEH/MIN)	CAPACIITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESIRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMEIRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	
I											I
I											I
I	09.30-09.45										I
I	B-C	0.00	6.28	0.000		0.00	0.00	0.0		0.00	I
I	B-AD	0.01	4.33	0.003		0.00	0.00	0.0		0.23	I
I	A-BCD	0.19	7.01	0.027		0.04	0.03	0.4		0.15	I
I	D-ABC	1.91	5.03	0.379		1.21	0.63	10.2		0.33	I
I	C-ABD	0.08	7.29	0.010		0.01	0.01	0.2		0.14	I
I											I

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUE FOR STREAM A-BCD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.1
09.15	0.1

320111064P

09.30 0.0
09.45 0.0

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.6	*
08.45	1.1	*
09.00	3.7	****
09.15	4.4	****
09.30	1.2	*
09.45	0.6	*

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)
I	B-C	I	0.0	I	0.0	I	0.00	I	0.00
I	B-AD	I	1.4	I	0.9	I	0.31	I	0.31
I	A-BCD	I	20.6	I	13.8	I	0.17	I	0.17
I	D-ABC	I	209.2	I	139.5	I	0.76	I	0.76
I	C-ABD	I	8.3	I	5.5	I	0.15	I	0.15
I	ALL	I	2371.6	I	1581.1	I	0.07	I	0.07

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD

*****END OF RUN*****

===== end of file =====

320111064P

TRL LIMITED

(C) COPYRIGHT 2006

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4.0 (SEPT 2008)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
BY PERMISSION OF THE CONTROLLER OF HMSO

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: Software@trl.co.uk

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"J:\2010\N01951 Clitheroe\Picady\Primrose Rd_Whalley Rd - PM PK.vpi"
(drive-on-the-left) at 12:11:14 on Monday, 14 November 2011

RUN INFORMATION

RUN FILE : Primrose Road_Whalley Road
LOCATION : Clitheroe
DATE : 28/02/11
CLIENT :
ENUMERATOR : steven.ho [27-WRK-SBA-021]
JOB NUMBER : N01951
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I
I
I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Whalley Road North
ARM B IS Side Road
ARM C IS Whalley Road South
ARM D IS Primrose Road

STREAM LABELLING CONVENTION

320111064P

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
 STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
 ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B	MINOR ROAD D
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 7.75 M.	(W) 7.75 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.	(WA-D) 2.20 M.
- VISIBILITY	(VC-B) 90.00 M.	(VA-D) 90.00 M.
- BLOCKS TRAFFIC	YES	YES
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 19.0 M.	(VD-A) 50.0 M.
- VISIBILITY TO RIGHT	(VB-A) 17.0 M.	(VD-C) 16.0 M.
- LANE 1 WIDTH	(WB-C) -	(WD-A) 3.60 M.
- LANE 2 WIDTH	(WB-A) -	(WD-C) 0.00 M.
WIDTH AT 0 M FROM JUNCTION	8.00 M.	-
WIDTH AT 5 M FROM JUNCTION	4.80 M.	-
WIDTH AT 10 M FROM JUNCTION	3.20 M.	-
WIDTH AT 15 M FROM JUNCTION	3.00 M.	-
WIDTH AT 20 M FROM JUNCTION	3.30 M.	-
- LENGTH OF FLARED SECTION	DERIVED: 1 PCU	-

SLOPES AND INTERCEPT

(NB: Streams may be combined, in which case capacity will be adjusted)

B-C Stream

Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

B-AD Stream

Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
STREAM C-A	STREAM C-B	STREAM C-D	STREAM D-B
0.00	0.00	0.00	

* Due to the presence of a flare, data is not available

D-A Stream

Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B
672.09	0.24	0.24	0.10	0.10

320111064P

D-BC Stream

I Intercept For I STREAM D-BC	Slope For Opposing STREAM C-A	Slope For Opposing STREAM B-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-D	I
I 531.70	0.23	0.23	0.09	0.09	I

I	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM A-D	Slope For Opposing STREAM B-D	I
I	0.14	0.14	0.32		I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 626.08	0.22	0.22	0.22	0.22	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 626.08	0.22	0.22	0.22	0.22	I

TRAFFIC DEMAND DATA

I ARM	I FLOW SCALE (%)	I
I A	I 100	I
I B	I 100	I
I C	I 100	I
I D	I 100	I

Demand set: PM 2016 With Dev

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)			I						
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I
I		I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I		I		I		I		I		I		I		I
I	ARM A	I	15.00	I	45.00	I	75.00	I	7.86	I	11.79	I	7.86	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	0.06	I	0.09	I	0.06	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	13.20	I	19.80	I	13.20	I
I	ARM D	I	15.00	I	45.00	I	75.00	I	1.50	I	2.25	I	1.50	I

Demand set: PM 2016 With Dev

I	I	TURNING PROPORTIONS	I
---	---	---------------------	---

320111064P

TIME	TURNING COUNIS (PERCENTAGE OF H.V.S)							
	FROM/IO	ARM A	ARM B	ARM C	ARM D			
16.45 - 17.00								
ARM A	0.000	0.002	0.946	0.052				
	0.0	1.0	595.0	33.0				
	(0.0)	(0.0)	(0.0)	(0.0)				
ARM B	0.800	0.000	0.200	0.000				
	4.0	0.0	1.0	0.0				
	(0.0)	(0.0)	(0.0)	(0.0)				
ARM C	0.884	0.002	0.000	0.115				
	933.0	2.0	0.0	121.0				
	(0.0)	(0.0)	(0.0)	(0.0)				
ARM D	0.325	0.000	0.675	0.000				
	39.0	0.0	81.0	0.0				
	(0.0)	(0.0)	(0.0)	(0.0)				

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNIS DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SEI PM 2016 With Dev
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	0.01	7.75	0.002		0.00	0.00	0.0		0.13
B-AD	0.05	5.03	0.010		0.00	0.01	0.1		0.20
A-BCD	0.41	7.46	0.056		0.00	0.06	0.9		0.14
D-ABC	1.51	5.61	0.268		0.00	0.36	5.0		0.24
C-ABD	0.03	8.53	0.003		0.00	0.00	0.0		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	0.01	7.40	0.002		0.00	0.00	0.0		0.14
B-AD	0.06	4.29	0.014		0.01	0.01	0.2		0.24
A-BCD	0.49	6.88	0.072		0.06	0.08	1.3		0.16
D-ABC	1.80	4.82	0.373		0.36	0.58	8.1		0.33
C-ABD	0.03	8.16	0.004		0.00	0.00	0.1		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	0.02	6.92	0.003		0.00	0.00	0.0		0.14
B-AD	0.07	3.27	0.022		0.01	0.02	0.3		0.31
A-BCD	0.61	6.08	0.100		0.08	0.13	1.9		0.18
D-ABC	2.20	3.69	0.596		0.58	1.34	17.8		0.63
C-ABD	0.04	7.64	0.005		0.00	0.00	0.1		0.13

TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	SIARI	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
------	--------	----------	---------	------------	-------	-----	-------	-----------------	---------------

320111064P

I	(VEH/MIN)	(VEH/MIN)	CAPACITTY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	17.30-17.45									I
I	B-C	0.02	6.91	0.003	0.00	0.00	0.0		0.15	I
I	B-AD	0.07	3.26	0.022	0.02	0.02	0.3		0.31	I
I	A-BCD	0.61	6.08	0.100	0.13	0.13	2.0		0.18	I
I	D-ABC	2.20	3.69	0.597	1.34	1.40	20.7		0.67	I
I	C-ABD	0.04	7.64	0.005	0.00	0.00	0.1		0.13	I
I										I

I	TIME	DEMAND	CAPACITTY	DEMAND/	PEDESIRIAN	SIARI	END	DELAY	GEOMEIRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-C	0.01	7.39	0.002		0.00	0.00	0.0		0.14	I
I	B-AD	0.06	4.28	0.014		0.02	0.01	0.2		0.24	I
I	A-BCD	0.49	6.88	0.072		0.13	0.09	1.3		0.16	I
I	D-ABC	1.80	4.82	0.373		1.40	0.62	10.1		0.34	I
I	C-ABD	0.03	8.15	0.004		0.00	0.00	0.1		0.12	I
I											I

I	TIME	DEMAND	CAPACITTY	DEMAND/	PEDESIRIAN	SIARI	END	DELAY	GEOMEIRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	18.00-18.15										I
I	B-C	0.01	7.74	0.002		0.00	0.00	0.0		0.13	I
I	B-AD	0.05	5.03	0.010		0.01	0.01	0.2		0.20	I
I	A-BCD	0.41	7.46	0.056		0.09	0.06	0.9		0.14	I
I	D-ABC	1.51	5.61	0.268		0.62	0.37	5.9		0.25	I
I	C-ABD	0.03	8.52	0.003		0.00	0.00	0.0		0.12	I
I											I

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-C

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
17.00	0 0
17.15	0 0
17.30	0 0
17.45	0 0
18.00	0 0
18.15	0 0

QUEUE FOR STREAM B-AD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
17.00	0 0
17.15	0 0
17.30	0 0
17.45	0 0
18.00	0 0
18.15	0 0

QUEUE FOR STREAM A-BCD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
17.00	0 1
17.15	0 1
17.30	0 1
17.45	0 1

320111064P

18.00 0.1
18.15 0.1

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	1.3	*
17.45	1.4	*
18.00	0.6	*
18.15	0.4	

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOIAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
I	B-C	I	1.4	I	0.9	I	0.2	I	0.14
I	B-AD	I	5.5	I	3.7	I	1.4	I	0.25
I	A-BCD	I	45.4	I	30.3	I	8.3	I	0.18
I	D-ABC	I	165.2	I	110.1	I	67.6	I	0.41
I	C-ABD	I	2.8	I	1.8	I	0.3	I	0.13
I	ALL	I	2491.3	I	1660.9	I	77.8	I	0.03

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

===== end of file =====

320111064P

IRL LIMITED

(C) COPYRIGHT 2006

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4.0 (SEPT 2008)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
BY PERMISSION OF THE CONTROLLER OF HMSO

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
IRL SOFTWARE BUREAU
TEL: CROWHORNE (01344) 770758, FAX: 770356
EMAIL: Software@trl.co.uk

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

"J:\2010\N01951 Clitheroe\Picady\Primrose and Mearley\Primrose Rd_Whalley Rd - AM PK.vpi"
(drive-on-the-left) at 14:07:04 on Monday, 14 November 2011

RUN INFORMATION

RUN FILE : Primrose Road_Whalley Road
LOCATION : Clitheroe
DATE : 28/02/11
CLIENT :
ENUMERATOR : steven.ho [27-WRK-SBA-021]
JOB NUMBER : N01951
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)

I
I
I
I
I
I
I

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS Whalley Road North
ARM B IS Side Road
ARM C IS Whalley Road South
ARM D IS Primrose Road

STREAM LABELLING CONVENTION

320111064P

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
 STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
 ETC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 7.75 M.	I	(W) 7.75 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.20 M.	I	(WA-D) 2.20 M.	I
I	- VISIBILITY	I	(VC-B) 90.00 M.	I	(VA-D) 90.00 M.	I
I	- BLOCKS TRAFFIC	I	YES	I	YES	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 19.0 M.	I	(VD-A) 50.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 17.0 M.	I	(VD-C) 16.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) 3.60 M.	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) 0.00 M.	I
I	WIDTH AT 0 M FROM JUNCTION	I	8.00 M.	I	-	I
I	WIDTH AT 5 M FROM JUNCTION	I	4.80 M.	I	-	I
I	WIDTH AT 10 M FROM JUNCTION	I	3.20 M.	I	-	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.00 M.	I	-	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.30 M.	I	-	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	-	I

SLOPES AND INTERCEPT

(NB: Streams may be combined, in which case capacity will be adjusted)

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D		I
I	0.00	0.00	0.00		I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	672.09	0.24	0.24	0.10	0.10	I

320111064P

D-BC Stream

I Intercept For I STREAM D-BC	Slope For Opposing STREAM C-A	Slope For Opposing STREAM B-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-D	I
I 531.70	0.23	0.23	0.09	0.09	I

I	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM A-D	Slope For Opposing STREAM B-D	I
I	0.14	0.14	0.32		I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 626.08	0.22	0.22	0.22	0.22	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 626.08	0.22	0.22	0.22	0.22	I

TRAFFIC DEMAND DATA

I ARM	I FLOW SCALE(%)	I
I A	I 100	I
I B	I 100	I
I C	I 100	I
I D	I 100	I

Demand set: AM 2016 With Dev

TIME PERIOD BEGINS 08.15 AND ENDS 09.45

LENGTH OF TIME PERIOD - 90 MIN.
 LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNCIL DATA

I	I	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)			I							
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I	
I	I	I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I	
I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
I	ARM	A	I	15.00	I	45.00	I	75.00	I	8.60	I	12.90	I	8.60	I
I	ARM	B	I	15.00	I	45.00	I	75.00	I	0.01	I	0.02	I	0.01	I
I	ARM	C	I	15.00	I	45.00	I	75.00	I	11.14	I	16.71	I	11.14	I
I	ARM	D	I	15.00	I	45.00	I	75.00	I	2.29	I	3.43	I	2.29	I

Demand set: AM 2016 With Dev

I	I	TURNING PROPORTIONS	I
---	---	---------------------	---

TIME	TURNING COUNTS (PERCENTAGE OF H.V.S)							
	FROM/TO	ARM A	ARM B	ARM C	ARM D			
08.15 - 08.30	ARM A	0.000	0.003	0.972	0.025			
		0.0	2.0	669.0	17.0			
		(0.0)	(10.0)	(10.0)	(10.0)			
	ARM B	0.000	0.000	0.000	1.000			
		0.0	0.0	0.0	0.0			
		(10.0)	(0.0)	(10.0)	(10.0)			
	ARM C	0.935	0.007	0.000	0.058			
		833.0	6.0	0.0	52.0			
		(10.0)	(10.0)	(0.0)	(10.0)			
	ARM D	0.317	0.000	0.683	0.000			
		58.0	0.0	125.0	0.0			
		(10.0)	(10.0)	(10.0)	(0.0)			

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SEIS
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	0.00	6.24	0.000		0.00	0.00	0.0		0.00
B-AD	0.01	4.27	0.003		0.00	0.00	0.0		0.23
A-BCD	0.21	6.99	0.030		0.00	0.03	0.5		0.15
D-ABC	2.30	5.05	0.455		0.00	0.80	10.9		0.35
C-ABD	0.08	7.25	0.010		0.00	0.01	0.2		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	0.00	5.86	0.000		0.00	0.00	0.0		0.00
B-AD	0.01	3.50	0.004		0.00	0.00	0.1		0.29
A-BCD	0.25	6.51	0.039		0.03	0.04	0.6		0.16
D-ABC	2.74	4.31	0.636		0.80	1.58	21.1		0.60
C-ABD	0.09	6.81	0.013		0.01	0.01	0.2		0.15

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	0.00	5.33	0.000		0.00	0.00	0.0		0.00
B-AD	0.02	2.44	0.008		0.00	0.01	0.1		0.41
A-BCD	0.31	5.84	0.053		0.04	0.06	0.9		0.18
D-ABC	3.36	3.26	1.029		1.58	7.63	76.6		2.10
C-ABD	0.11	6.20	0.018		0.01	0.02	0.3		0.16

TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	SIARI	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
------	--------	----------	---------	------------	-------	-----	-------	-----------------	---------------

320111064P

320111064P

	(VEH/MIN)	(VEH/MIN)	CAPACITTY (RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ IIME SEGMENT)	(VEH.MIN/ IIME SEGMENT)	PER ARRIVING VEHICLE (MIN)	I
I 09.00-09.15										I
I B-C	0.00	5.28	0.000		0.00	0.00	0.0		0.00	I
I B-AD	0.02	2.38	0.008		0.01	0.01	0.1		0.42	I
I A-BCD	0.31	5.84	0.053		0.06	0.06	0.9		0.18	I
I D-ABC	3.36	3.26	1.029		7.63	11.24	142.6		3.40	I
I C-ABD	0.11	6.13	0.018		0.02	0.02	0.3		0.17	I
I										I

I IIME	DEMAND (VEH/MIN)	CAPACITTY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESIRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ IIME SEGMENT)	GEOMEIRIC DELAY (VEH.MIN/ IIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I 09.15-09.30										I
I B-C	0.00	5.77	0.000		0.00	0.00	0.0		0.00	I
I B-AD	0.01	3.39	0.004		0.01	0.00	0.1		0.30	I
I A-BCD	0.25	6.51	0.039		0.06	0.04	0.7		0.16	I
I D-ABC	2.74	4.31	0.636		11.24	2.01	66.6		1.38	I
I C-ABD	0.09	6.70	0.013		0.02	0.01	0.2		0.15	I
I										I

I IIME	DEMAND (VEH/MIN)	CAPACITTY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESIRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ IIME SEGMENT)	GEOMEIRIC DELAY (VEH.MIN/ IIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I 09.30-09.45										I
I B-C	0.00	6.22	0.000		0.00	0.00	0.0		0.00	I
I B-AD	0.01	4.25	0.003		0.00	0.00	0.0		0.24	I
I A-BCD	0.21	6.99	0.030		0.04	0.03	0.5		0.15	I
I D-ABC	2.30	5.05	0.455		2.01	0.87	14.5		0.38	I
I C-ABD	0.08	7.23	0.010		0.01	0.01	0.2		0.14	I
I										I

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-C

IIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUE FOR STREAM B-AD

IIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUE FOR STREAM A-BCD

IIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.1
09.15	0.1

320111064P

09.30 0.0
09.45 0.0

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.8	*
08.45	1.6	**
09.00	7.6	*****
09.15	11.2	*****
09.30	2.0	**
09.45	0.9	*

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	IOIAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)
I	B-C	I	0.0	I	0.0	I	0.00	I	0.00
I	B-AD	I	1.4	I	0.9	I	0.32	I	0.32
I	A-BCD	I	23.4	I	15.6	I	4.1	I	0.18
I	D-ABC	I	251.9	I	167.9	I	332.2	I	1.32
I	C-ABD	I	8.3	I	5.5	I	1.3	I	0.16
I	ALL	I	2426.6	I	1617.8	I	338.1	I	0.14

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

===== end of file =====

320111064P

IRL LIMITED

(C) COPYRIGHT 2006

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4.0 (SEPT 2008)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
BY PERMISSION OF THE CONTROLLER OF HMSO

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
IRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: Software@trl.co.uk

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"J:\2010\N01951 Clitheroe\Picady\Primrose and Mearley\Primrose Rd_Whalley Rd - PM PK.vpi"
(drive-on-the-left) at 14:15:06 on Monday, 14 November 2011

RUN INFORMATION

RUN TITLE : Primrose Road_Whalley Road
LOCATION : Clitheroe
DATE : 28/02/11
CLIENT :
ENUMERATOR : steven ho [27-WRK-SBA-021]
JOB NUMBER : N01951
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I
I
I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Whalley Road North
ARM B IS Side Road
ARM C IS Whalley Road South
ARM D IS Primrose Road

STREAM LABELLING CONVENTION

320111064P

SIREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
 SIREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
 ETC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 7.75 M.	I	(W) 7.75 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.20 M.	I	(WA-D) 2.20 M.	I
I	- VISIBILITY	I	(VC-B) 90.00 M.	I	(VA-D) 90.00 M.	I
I	- BLOCKS TRAFFIC	I	YES	I	YES	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 19.0 M.	I	(VD-A) 50.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 17.0 M.	I	(VD-C) 16.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) 3.60 M.	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) 0.00 M.	I
I	WIDTH AT 0 M FROM JUNCTION	I	8.00 M	I	-	I
I	WIDTH AT 5 M FROM JUNCTION	I	4.80 M.	I	-	I
I	WIDTH AT 10 M FROM JUNCTION	I	3.20 M.	I	-	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.00 M.	I	-	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.30 M.	I	-	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	-	I

SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D		I
I	0.00	0.00	0.00		I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	672.09	0.24	0.24	0.10	0.10	I

320111064P

D-BC Stream

I Intercept For I STREAM D-BC	Slope For Opposing STREAM C-A	Slope For Opposing STREAM B-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-D	I
I 531.70	0.23	0.23	0.09	0.09	I
I	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM A-D	Slope For Opposing STREAM B-D	I
I	0.14	0.14	0.32		I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 626.08	0.22	0.22	0.22	0.22	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 626.08	0.22	0.22	0.22	0.22	I

TRAFFIC DEMAND DATA

I ARM	I FLOW SCALE(%)	I
I A	I 100	I
I B	I 100	I
I C	I 100	I
I D	I 100	I

Demand set: PM 2016 With Dev

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS	I TOP OF PEAK I IS REACHED	I FLOW STOPS I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00	I 45.00	I 75.00	I 7.86 I 11.79 I 7.86	I
I ARM B	I 15.00	I 45.00	I 75.00	I 0.06 I 0.09 I 0.06	I
I ARM C	I 15.00	I 45.00	I 75.00	I 13.20 I 19.80 I 13.20	I
I ARM D	I 15.00	I 45.00	I 75.00	I 1.50 I 2.25 I 1.50	I

Demand set: PM 2016 With Dev

I	I TURNING PROPORTIONS	I
---	-----------------------	---

320111064P

TIME	TURNING COUNTS (PERCENTAGE OF H.V.S.)							
	FROM/TO	ARM A	ARM B	ARM C	ARM D			
16.45 - 17.00	ARM A	0.000	0.002	0.946	0.052			
		0.0	1.0	595.0	33.0			
		(0.0)	(0.0)	(0.0)	(0.0)			
	ARM B	0.800	0.000	0.200	0.000			
		4.0	0.0	1.0	0.0			
		(0.0)	(0.0)	(0.0)	(0.0)			
	ARM C	0.884	0.002	0.000	0.115			
		933.0	2.0	0.0	121.0			
		(0.0)	(0.0)	(0.0)	(0.0)			
	ARM D	0.325	0.000	0.675	0.000			
		39.0	0.0	81.0	0.0			
		(0.0)	(0.0)	(0.0)	(0.0)			

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2016 With Dev
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	STARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	0.01	7.75	0.002		0.00	0.00	0.0		0.13
B-AD	0.05	5.03	0.010		0.00	0.01	0.1		0.20
A-BCD	0.41	7.46	0.056		0.00	0.06	0.9		0.14
D-ABC	1.51	5.61	0.268		0.00	0.36	5.0		0.24
C-ABD	0.03	8.53	0.003		0.00	0.00	0.0		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	STARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	0.01	7.40	0.002		0.00	0.00	0.0		0.14
B-AD	0.06	4.29	0.014		0.01	0.01	0.2		0.24
A-BCD	0.49	6.88	0.072		0.06	0.08	1.3		0.16
D-ABC	1.80	4.82	0.373		0.36	0.58	8.1		0.33
C-ABD	0.03	8.16	0.004		0.00	0.00	0.1		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	STARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	0.02	6.92	0.003		0.00	0.00	0.0		0.14
B-AD	0.07	3.27	0.022		0.01	0.02	0.3		0.31
A-BCD	0.61	6.08	0.100		0.08	0.13	1.9		0.18
D-ABC	2.20	3.69	0.596		0.58	1.34	17.8		0.63
C-ABD	0.04	7.64	0.005		0.00	0.00	0.1		0.13

TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	STARI	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
------	--------	----------	---------	------------	-------	-----	-------	-----------------	---------------

320111064P

	(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)	
I 17.30-17.45										I
I B-C	0.02	6.91	0.003		0.00	0.00	0.0		0.15	I
I B-AD	0.07	3.26	0.022		0.02	0.02	0.3		0.31	I
I A-BCD	0.61	6.08	0.100		0.13	0.13	2.0		0.18	I
I D-ABC	2.20	3.69	0.597		1.34	1.40	20.7		0.67	I
I C-ABD	0.04	7.64	0.005		0.00	0.00	0.1		0.13	I

	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESIRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMEIRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	
I 17.45-18.00											I
I B-C	0.01	7.39	0.002			0.00	0.00	0.0		0.14	I
I B-AD	0.06	4.28	0.014			0.02	0.01	0.2		0.24	I
I A-BCD	0.49	6.88	0.072			0.13	0.09	1.3		0.16	I
I D-ABC	1.80	4.82	0.373			1.40	0.62	10.1		0.34	I
I C-ABD	0.03	8.15	0.004			0.00	0.00	0.1		0.12	I

	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESIRIAN FLOW (PEDS/MIN)	SIARI QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMEIRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	
I 18.00-18.15											I
I B-C	0.01	7.74	0.002			0.00	0.00	0.0		0.13	I
I B-AD	0.05	5.03	0.010			0.01	0.01	0.2		0.20	I
I A-BCD	0.41	7.46	0.056			0.09	0.06	0.9		0.14	I
I D-ABC	1.51	5.61	0.268			0.62	0.37	5.9		0.25	I
I C-ABD	0.03	8.52	0.003			0.00	0.00	0.0		0.12	I

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUE FOR STREAM A-BCD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

320111064P

18.00 0.1
18.15 0.1

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.4
17.15	0.6 *
17.30	1.3 *
17.45	1.4 *
18.00	0.6 *
18.15	0.4

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	IOIAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I		
I	I	I	I	I	* DELAY *	I	* DELAY *	I		
I	I	I	I	I	I	I	I	I		
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	1.4	I	0.9	I	0.2	I	0.14	I
I	B-AD	I	5.5	I	3.7	I	1.4	I	0.25	I
I	A-BCD	I	45.4	I	30.3	I	8.3	I	0.18	I
I	D-ABC	I	165.2	I	110.1	I	67.6	I	0.41	I
I	C-ABD	I	2.8	I	1.8	I	0.3	I	0.13	I
I	ALL	I	2491.3	I	1660.9	I	77.8	I	0.03	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

===== end of file =====

IRI LIMITED

(C) COPYRIGHT 2006

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
BY PERMISSION OF THE CONTROLLER OF HMSO

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
IRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

320111064P

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF HIS RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
J:\2010\N01951 Clitheroe\Picady\Primrose Rd_Whalley Rd (30-11-2011 drawing Plan 06) - AM PK.vpi"
(drive-on-the-left) at 14:28:19 on Monday, 12 December 2011

RUN INFORMATION

RUN TITLE: Primrose Road_Whalley Road
LOCATION: Clitheroe
DATE: 28/02/11
CLIENT:
ENUMERATOR: steven ho [27-WRK-SBA-021]
JOB NUMBER: N01951
STATUS:
DESCRIPTION:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

```

                                MINOR ROAD (ARM D)
                                I
                                I
                                I
                                I
                                I
                                I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
                                I
                                I
                                I
                                I
                                I
                                I
                                MINOR ROAD (ARM B)

```

ARM A IS Whalley Road North
ARM B IS Side Road
ARM C IS Whalley Road South
ARM D IS Primrose Road

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC..

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I (W)	6.50 M	I (W)	6.50 M	I
	CENTRAL RESERVE WIDTH	I (WCR)	0.00 M	I (WCR)	0.00 M	I
		I		I		I
	MAJOR ROAD RIGHT TURN - WIDTH	I (WC-B)	2.20 M	I (WA-D)	2.20 M	I
	- VISIBILITY	I (VC-B)	60.0 M	I (VA-D)	60.0 M	I
	- BLOCKS TRAFFIC	I	YES	I	YES	I
		I		I		I
	MINOR ROAD - VISIBILITY TO LEFT	I (VB-C)	30.0 M	I (VD-A)	33.0 M	I
	- VISIBILITY TO RIGHT	I (VB-A)	18.0 M	I (VD-C)	25.0 M	I
	- LANE 1 WIDTH	I (WB-C)	5.00 M	I (WD-A)	-	I
	- LANE 2 WIDTH	I (WB-A)	0.00 M	I (WD-C)	-	I
	- WIDTH AT 0 M FROM JUNC.	I	-	I	10.00 M	I
	- WIDTH AT 5 M FROM JUNC.	I	-	I	7.20 M	I
	- WIDTH AT 10 M FROM JUNC.	I	-	I	5.80 M	I
	- WIDTH AT 15 M FROM JUNC.	I	-	I	4.80 M	I
	- WIDTH AT 20 M FROM JUNC.	I	-	I	4.00 M	I
	- LENGTH OF FIARED SECTION	I		I	DERIVED: 3 PCU	I

320111064P

SLOPES AND INTERCEPT

NB: Streams may be combined in which case capacity will be adjusted)

B-C Stream

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	762.47	0.29	0.11	I

D-A Stream

I	Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	I
I	588.44	0.22	0.09	I

B-A Stream

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-D	Slope For Opposing Stream D-A	Slope For Opposing Stream D-B	I
I	595.50	0.27	0.27	0.27	0.27	I

I	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	Slope For Opposing Stream D-C	I
I	0.11	0.17	0.38	0.13	I

D-C Stream

I	Intercept For Stream D-C	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	Slope For Opposing Stream B-C	Slope For Opposing Stream B-D	I
I	460.47	0.21	0.21	0.21	0.21	I

I	Slope For Opposing Stream C-D	Slope For Opposing Stream A-C	Slope For Opposing Stream A-D	Slope For Opposing Stream B-A	I
I	0.08	0.13	0.30	0.10	I

C-B Stream

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-D	I
I	608.71	0.23	0.33	I

A-D Stream

I	Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	608.71	0.23	0.33	I

B-D Stream From Left Hand Lane

Intercept For Stream B-D	Slope For Opposing Stream A-C	Slope For Opposing Stream A-D	Slope For Opposing Stream A-B	Slope For Opposing Stream C-B	I
595.50	0.27	0.27	0.11	0.38	I
Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream A-B	Slope For Opposing Stream C-B	I	I
0.17	0.17				I

D Stream From Right Hand Lane

Intercept For Stream B-D	Slope For Opposing Stream A-C	Slope For Opposing Stream A-D	Slope For Opposing Stream A-B	Slope For Opposing Stream C-B	I
595.50	0.27	0.27	0.11	0.38	I
Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream A-B	Slope For Opposing Stream C-B	I	I
0.17	0.17				I

D-B Stream From Left Hand Lane

Intercept For Stream D-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	Slope For Opposing Stream D-C	Slope For Opposing Stream A-D	I
460.47	0.21	0.21	0.08	0.30	I
Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-B	Slope For Opposing Stream A-D	I	I
0.13	0.13				I

D-B Stream From Right Hand Lane

Intercept For Stream D-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	Slope For Opposing Stream C-D	Slope For Opposing Stream A-D	I
460.47	0.21	0.21	0.08	0.30	I
Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-B	Slope For Opposing Stream A-D	I	I
0.13	0.13				I

TRAFFIC DEMAND DATA

ARM I FLOW SCALE(%) I

ARM A	I	100	I
ARM B	I	100	I
ARM C	I	100	I
ARM D	I	100	I

Demand set: AM 2016 With Dev

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	8.60	12.90	8.60
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	11.14	16.71	11.14
ARM D	15.00	45.00	75.00	2.29	3.43	2.29

320111064P

320111064P

TIME	FROM/TO	TURNING PROPORTIONS TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S)			
		ARM A	ARM B	ARM C	ARM D
07.45 - 09.15	ARM A	0.000	0.003	0.972	0.025
		0.0	2.0	669.0	17.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.935	0.007	0.000	0.058
		833.0	6.0	0.0	52.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.317	0.000	0.683	0.000
		58.0	0.0	125.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SEI AM 2016 With Dev
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
B-ACD	0.01	5.71	0.002		0.00	0.00	0.0		0.18
A-BCD	0.21	7.56	0.028		0.00	0.03	0.4		0.14
D-AB	0.73	7.20	0.101		0.00	0.11	1.6		0.15
D-BC	1.57	5.25	0.299		0.00	0.42	5.8		0.27
C-ABD	0.08	8.13	0.009		0.00	0.01	0.1		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-ACD	0.01	4.89	0.003		0.00	0.00	0.0		0.21
A-BCD	0.25	7.06	0.036		0.03	0.04	0.6		0.15
D-AB	0.87	6.46	0.135		0.11	0.15	2.2		0.18
D-BC	1.87	4.44	0.422		0.42	0.70	9.8		0.38
C-ABD	0.09	7.74	0.012		0.01	0.01	0.2		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-ACD	0.02	3.76	0.005		0.00	0.00	0.1		0.27
A-BCD	0.31	6.36	0.049		0.04	0.05	0.8		0.17
D-AB	1.06	4.76	0.224		0.15	0.28	4.0		0.27
D-BC	2.29	3.32	0.691		0.70	1.90	24.0		0.85
C-ABD	0.11	7.20	0.015		0.01	0.02	0.2		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-ACD	0.02	3.76	0.005		0.00	0.00	0.1		0.27
A-BCD	0.31	6.36	0.049		0.05	0.05	0.8		0.17
D-AB	1.06	4.59	0.232		0.28	0.30	4.4		0.28
D-BC	2.29	3.32	0.692		1.90	2.04	29.8		0.95
C-ABD	0.11	7.20	0.015		0.02	0.02	0.2		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
08.45-09.00										I
I B-ACD	0.01	4.89	0.003		0.00	0.00	0.0		0.21	I
I A-BCD	0.25	7.06	0.036		0.05	0.04	0.6		0.15	I
I D-AB	0.87	6.39	0.136		0.30	0.16	2.5		0.18	I
I D-BC	1.87	4.44	0.422		2.04	0.76	12.9		0.42	I
I C-ABD	0.09	7.74	0.012		0.02	0.01	0.2		0.13	I

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
09.00-09.15										I
I B-ACD	0.01	5.71	0.002		0.00	0.00	0.0		0.18	I
I A-BCD	0.21	7.56	0.028		0.04	0.03	0.4		0.14	I
I D-AB	0.73	7.18	0.101		0.16	0.11	1.8		0.16	I
I D-BC	1.57	5.25	0.299		0.76	0.44	6.9		0.27	I
I C-ABD	0.08	8.13	0.009		0.01	0.01	0.1		0.12	I

QUEUE FOR SIREAM B-ACD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUE FOR SIREAM A-BCD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.1
08.45	0.1
09.00	0.0
09.15	0.0

QUEUE FOR SIREAM D-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.1
08.15	0.2
08.30	0.3
08.45	0.3
09.00	0.2
09.15	0.1

QUEUE FOR SIREAM D-BC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.4
08.15	0.7 *
08.30	1.9 **
08.45	2.0 **
09.00	0.8 *
09.15	0.4

QUEUE FOR SIREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

320111064P

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING *	* INCLUSIVE QUEUEING *
		* DELAY *	* DELAY *
(VEH)	(VEH/H)	(MIN)	(MIN/VEH)
B-ACD	1.4	0.9	0.3
A-BCD	23.4	15.6	3.5
D-AB	79.8	53.2	16.5
D-BC	172.1	114.7	89.3
C-ABD	8.3	5.5	1.1
ALL	2426.6	1617.8	110.7

320111064P

DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD

END OF JOB

===== end of file =====

[Printed at 14:28:31 on 12/12/2011]

IRI LIMITED

(C) COPYRIGHT 2006

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
BY PERMISSION OF THE CONTROLLER OF HMSO

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
IRI SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

320111064P

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF HIS RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
G:\2010\N01951 Clitheroe\Picady\Primrose Rd_Whalley Rd (30-11-2011 drawing Plan 06) - PM PK.vpi'
(drive-on-the-left) at 14:30:07 on Monday, 12 December 2011

RUN INFORMATION

RUN TITLE: Primrose Road_Whalley Road
LOCATION: Clitheroe
DATE: 28/02/11
CLIENT:
ENUMERATOR: steven.ho [27-WRK-SBA-021]
JOB NUMBER: N01951
STATUS:
DESCRIPTION:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

```

                                MINOR ROAD (ARM D)
                                I
                                I
                                I
                                I
                                I
                                I
                                I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
                                I
                                I
                                I
                                I
                                I
                                I
                                MINOR ROAD (ARM B)

```

ARM A IS Whalley Road North
ARM B IS Side Road
ARM C IS Whalley Road South
ARM D IS Primrose Road

SIGNAL LABELLING CONVENTION

SIGNAL A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
SIGNAL B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I (W)	6.50 M.	I (W)	6.50 M.	I
	CENTRAL RESERVE WIDTH	I (WCR)	0.00 M.	I (WCR)	0.00 M.	I
	MAJOR ROAD RIGHT TURN - WIDTH	I (WC-B)	2.20 M.	I (WA-D)	2.20 M.	I
	- VISIBILITY	I (VC-B)	60.0 M.	I (VA-D)	60.0 M.	I
	- BLOCKS TRAFFIC	I	YES	I	YES	I
	MINOR ROAD - VISIBILITY TO LEFT	I (VB-C)	30.0 M.	I (VD-A)	33.0 M.	I
	- VISIBILITY TO RIGHT	I (VB-A)	18.0 M.	I (VD-C)	25.0 M.	I
	- LANE 1 WIDTH	I (WB-C)	5.00 M.	I (WD-A)	-	I
	- LANE 2 WIDTH	I (WB-A)	0.00 M.	I (WD-C)	-	I
	- WIDTH AT 0 M FROM JUNC.	I	-	I	10.00 M.	I
	- WIDTH AT 5 M FROM JUNC.	I	-	I	7.20 M.	I
	- WIDTH AT 10 M FROM JUNC.	I	-	I	5.80 M.	I
	- WIDTH AT 15 M FROM JUNC.	I	-	I	4.80 M.	I
	- WIDTH AT 20 M FROM JUNC.	I	-	I	4.00 M.	I
	- LENGTH OF FLARED SECTION	I	-	I DERIVED:	3 PCU	I

320111064P

SLOPES AND INTERCEPT

(NB: Streams may be combined, in which case capacity will be adjusted)

B-C Stream

I	Intercept For Stream B-C	I	Slope For Opposing Stream A-C	I	Slope For Opposing Stream A-B	I
I	762.47	I	0.29	I	0.11	I

D-A Stream

I	Intercept For Stream D-A	I	Slope For Opposing Stream C-A	I	Slope For Opposing Stream C-D	I
I	588.44	I	0.22	I	0.09	I

D-A Stream

I	Intercept For Stream B-A	I	Slope For Opposing Stream A-C	I	Slope For Opposing Stream A-D	I	Slope For Opposing Stream D-A	I	Slope For Opposing Stream D-B	I
I	595.50	I	0.27	I	0.27	I	0.27	I	0.27	I

I	Slope For Opposing Stream A-B	I	Slope For Opposing Stream C-A	I	Slope For Opposing Stream C-B	I	Slope For Opposing Stream D-C	I
I	0.11	I	0.17	I	0.38	I	0.13	I

D-C Stream

I	Intercept For Stream D-C	I	Slope For Opposing Stream C-A	I	Slope For Opposing Stream C-B	I	Slope For Opposing Stream B-C	I	Slope For Opposing Stream B-D	I
I	460.47	I	0.21	I	0.21	I	0.21	I	0.21	I

I	Slope For Opposing Stream C-D	I	Slope For Opposing Stream A-C	I	Slope For Opposing Stream A-D	I	Slope For Opposing Stream B-A	I
I	0.08	I	0.13	I	0.30	I	0.10	I

C-B Stream

I	Intercept For Stream C-B	I	Slope For Opposing Stream A-C	I	Slope For Opposing Stream A-D	I
I	608.71	I	0.23	I	0.33	I

A-D Stream

I	Intercept For Stream A-D	I	Slope For Opposing Stream C-A	I	Slope For Opposing Stream C-B	I
I	608.71	I	0.23	I	0.33	I

B-D Stream From left hand lane

I Intercept For Stream B-D	Slope For Opposing Stream A-C	Slope For Opposing Stream A-D	Slope For Opposing Stream A-B	Slope For Opposing Stream C-B	I
595.50	0.27	0.27	0.11	0.38	I

I	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing	Slope For Opposing	I
	0.17	0.17			I

D Stream From Right Hand Lane

I Intercept For Stream B-D	Slope For Opposing Stream A-C	Slope For Opposing Stream A-D	Slope For Opposing Stream A-B	Slope For Opposing Stream C-B	I
595.50	0.27	0.27	0.11	0.38	I

I	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing	Slope For Opposing	I
	0.17	0.17			I

D-B Stream From Left Hand Lane

I Intercept For Stream D-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	Slope For Opposing Stream D-C	Slope For Opposing Stream A-D	I
460.47	0.21	0.21	0.08	0.30	I

I	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing	Slope For Opposing	I
	0.13	0.13			I

D-B Stream From Right Hand Lane

I Intercept For Stream D-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	Slope For Opposing Stream C-D	Slope For Opposing Stream A-D	I
460.47	0.21	0.21	0.08	0.30	I

I	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing	Slope For Opposing	I
	0.13	0.13			I

TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I

I A	I	100	I
I B	I	100	I
I C	I	100	I
I D	I	100	I

Demand set: PM 2016 With Dev

TIME PERIOD BEGINS 16 45 AND ENDS 18 15

LENGTH OF TIME PERIOD - 90 MINUTES

LENGTH OF TIME SEGMENT - 15 MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNCIL DATA

I ARM	NUMBER OF MINUTES FROM START WHEN				RATE OF FLOW (VEH/MIN)		
	I FLOW STARTS	I TOP OF PEAK	I FLOW STOPS	I BEFORE	I AT TOP	I AFTER	
	I TO RISE	I IS REACHED	I FALLING	I PEAK	I OF PEAK	I PEAK	
I ARM A	15.00	45.00	75.00	7.96	11.94	7.96	
I ARM B	15.00	45.00	75.00	0.06	0.09	0.06	
I ARM C	15.00	45.00	75.00	13.51	20.27	13.51	
I ARM D	15.00	45.00	75.00	1.67	2.51	1.67	

320111064P

320111064P

TIME	TURNING PROPORTIONS TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S)				
	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15	ARM A	0.000	0.002	0.934	0.064
		0.0	1.0	595.0	41.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.800	0.000	0.200	0.000
		4.0	0.0	1.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.863	0.002	0.000	0.135
		933.0	2.0	0.0	146.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.336	0.000	0.664	0.000
		45.0	0.0	89.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2016 With Dev
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-ACD	0.06	6.08	0.010		0.00	0.01	0.1		0.17
A-BCD	0.51	7.01	0.073		0.00	0.08	1.2		0.15
D-AB	0.56	7.02	0.080		0.00	0.09	1.2		0.15
D-BC	1.12	4.82	0.232		0.00	0.29	4.1		0.27
C-ABD	0.03	8.25	0.003		0.00	0.00	0.0		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-ACD	0.07	5.20	0.014		0.01	0.01	0.2		0.20
A-BCD	0.61	6.41	0.096		0.08	0.11	1.6		0.17
D-AB	0.67	6.27	0.108		0.09	0.12	1.7		0.18
D-BC	1.33	3.94	0.338		0.29	0.49	6.9		0.38
C-ABD	0.03	7.88	0.004		0.00	0.00	0.1		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-ACD	0.09	3.95	0.023		0.01	0.02	0.3		0.26
A-BCD	0.75	5.56	0.135		0.11	0.16	2.4		0.21
D-AB	0.83	4.83	0.171		0.12	0.20	2.9		0.25
D-BC	1.63	2.72	0.600		0.49	1.32	17.0		0.84
C-ABD	0.04	7.37	0.005		0.00	0.00	0.1		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-ACD	0.09	3.94	0.023		0.02	0.02	0.4		0.26
A-BCD	0.75	5.56	0.135		0.16	0.16	2.4		0.21
D-AB	0.83	4.74	0.174		0.20	0.21	3.1		0.26
D-BC	1.63	2.72	0.600		1.32	1.40	20.5		0.90
C-ABD	0.04	7.37	0.005		0.00	0.00	0.1		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-ACD	0.07	5.18	0.014		0.02	0.01	0.2		0.20
A-BCD	0.61	6.41	0.096		0.16	0.11	1.6		0.17
D-AB	0.67	6.23	0.108		0.21	0.12	1.9		0.18
D-BC	1.33	3.94	0.339		1.40	0.53	8.9		0.40
C-ABD	0.03	7.88	0.004		0.00	0.00	0.1		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-ACD	0.06	6.07	0.010		0.01	0.01	0.2		0.17
A-BCD	0.51	7.01	0.073		0.11	0.08	1.2		0.15
D-AB	0.56	7.00	0.081		0.12	0.09	1.4		0.16
D-BC	1.12	4.82	0.232		0.53	0.31	4.9		0.27
C-ABD	0.03	8.25	0.003		0.00	0.00	0.0		0.12

QUEUE FOR STREAM B-ACD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUE FOR STREAM A-BCD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.1
17.30	0.2
17.45	0.2
18.00	0.1
18.15	0.1

QUEUE FOR STREAM D-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.1
17.30	0.2
17.45	0.2
18.00	0.1
18.15	0.1

QUEUE FOR STREAM D-BC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.3
17.15	0.5
17.30	1.3
17.45	1.4
18.00	0.5
18.15	0.3

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

320111064P

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING *	* INCLUSIVE QUEUEING *
(VEH)	(VEH/H)	(MIN)	(MIN/VEH)
B-ACD	6.9	4.6	1.4
A-BCD	56.4	37.6	10.4
D-AB	61.9	41.3	12.3
D-BC	122.5	81.7	62.4
C-ABD	2.8	1.8	0.4
ALL	2556.0	1704.0	86.8

320111064P

DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD .

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD .

END OF JOB

end of file

Printed at 14:30:16 on 12/12/2011