

**ERECTION OF 1NO B8 STORAGE AND DISTRIBUTION BUILDING AND  
ASSOCIATED ACCESS AND EXTERNAL WORKS AT LAND ADJACENT  
TO H-PACK, DAVY WAY, LLAY**

**TRANSPORT ASSESSMENT**

**PREPARED ON BEHALF OF:  
H-PACK PACKAGING UK LIMITED**



Lymedale Business Centre,  
Hooters Hall Road,  
Newcastle-under-Lyme,  
Staffordshire, ST5 9QF

## CONTENTS

1.0	INTRODUCTION .....	1
2.0	THE DEVELOPMENT SITE .....	7
3.0	THE PROPOSED DEVELOPMENT .....	16
4.0	BASELINE TRAFFIC CONDITIONS .....	20
5.0	DEVELOPMENT TRIP ATTRACTION, ASSIGNMENT AND DISTRIBUTION .....	26
6.0	IMPACT OF DEVELOPMENT PROPOSALS ON THE OPERATIONAL PERFORMANCE OF THE LOCAL HIGHWAY NETWORK .....	29
7.0	SUMMARY AND CONCLUSIONS .....	34

## FIGURES

2-1	SITE LOCATION (IN TEXT)
2-2	LOCAL HIGHWAY NETWORK (IN TEXT)
2-3	WALKING ISOCHRONE PLAN (IN TEXT)
2-4	CYCLING ISOCHRONE PLAN (IN TEXT)
4-1	2022 SURVEY TRAFFIC FLOWS
4-2	2027 BASE TRAFFIC FLOWS
4-3	COMMITTED DEVELOPMENT TRAFFIC FLOWS – PLANNING APPLICATION P/2014/0905
4-4	COMMITTED DEVELOPMENT TRAFFIC FLOWS – PLANNING APPLICATION P/2020/0623
4-5	2027 BASE PLUS COMMITTED PLUS DEVELOPMENT TRAFFIC FLOWS
4-6	PERSONAL INJURY COLLISION LOCATIONS (IN TEXT)
5-1	EXISTING DEVELOPMENT TRAFFIC (CARS) RE-ASSIGNED TO THE NEW ACCESS
5-2A	DEVELOPMENT DISTRIBUTION - CARS
5-2B	DEVELOPMENT DISTRIBUTION - HGVS
5-3A	DEVELOPMENT ASSIGNMENT - CARS
5-3B	DEVELOPMENT ASSIGNMENT - HGVS
5-3C	DEVELOPMENT ASSIGNMENT – TOTAL VEHICLES
5-4	2027 BASE PLUS COMMITTED PLUS DEVELOPMENT TRAFFIC FLOWS

## **TABLES**

<b>4-1</b>	<b>COMPARISON OF ATC DATA</b>
<b>4-2</b>	<b>GROWTH FACTORS (WREXHAM 020)</b>
<b>4-3</b>	<b>SUMMARY OF PERSONAL INJURY COLLISIONS</b>
<b>5-1</b>	<b>TRIP RATES PER 100 SQM GROSS EXTERNAL AREA</b>
<b>5-2</b>	<b>TRIP ATTRACTION OF DEVELOPMENT PROPOSAL</b>
<b>5-3</b>	<b>DEVELOPMENT DISTRIBUTION</b>
<b>6-1</b>	<b>IMPACT ON JUNCTION 7 OF THE A483</b>
<b>6-2</b>	<b>DAVY WAY/ SITE ACCESS – PICADY RESULTS</b>
<b>6-3</b>	<b>B5373 RACKERY LANE/ PROPOSED SITE ACCESS – PICADY RESULTS</b>
<b>6-4</b>	<b>B5373 RACKERY LANE/ DAVY WAY – PICADY RESULTS</b>
<b>6-5</b>	<b>CROWN CROSSROADS – LINSIG RESULTS</b>

## **APPENDICES**

<b>A</b>	<b>SITE LAYOUT</b>
<b>B</b>	<b>GENERAL ACCESS ARRANGEMENT AND AUTOTRACK ANALYSIS</b>
<b>C</b>	<b>FRAMEWORK TRAVEL PLAN</b>
<b>D</b>	<b>STAGE 1 ROAD SAFETY AUDIT AND DESIGNERS' RESPONSE</b>
<b>E</b>	<b>TRAFFIC COUNT SURVEY DATA</b>
<b>F</b>	<b>TRICS DATA</b>
<b>G</b>	<b>DEVELOPMENT DISTRIBUTION</b>
<b>H</b>	<b>DAVY WAY/ SITE ACCESS – MODEL OUTPUTS</b>
<b>I</b>	<b>B5373 RACKERY LANE/ PROPOSED SITE ACCESS – MODEL OUTPUTS</b>
<b>J</b>	<b>B5373 RACKERY LANE/ DAVY WAY – MODEL OUTPUTS</b>
<b>K</b>	<b>CROWN CROSSROADS – MODEL OUTPUTS</b>

## 1.0 INTRODUCTION

### 1.1 Background

- 1.1.1 This Transport Assessment has been prepared by Cameron Rose Associates on behalf of H-Pack Packaging UK Ltd, in order to examine the highway and transportation issues associated with the erection of 1no B8 Storage and Distribution building and associated access and external works at Land adjacent to H-Pack, Davy Way, Llay.
- 1.1.2 The project would see full planning application for the erection of a storage and distribution building (Class B8) with circa 14,865 sqm (160,000 sqft) footprint including ancillary (integral) offices over two floors, creation of a service yard and dedicated parking areas for cars, with associated access and servicing including new vehicle access points from Rackery Lane (for cars only) and modified vehicle access work to Davy Way (for HGVs only), new landscaping and other works.
- 1.1.3 The development site is located in Llay, approximately nine kilometres to the north of Wrexham. The site is a parcel of grassed and hard-standing land to the south-west of the existing H-Pack unit; to the south-west of the B5373 Rackery Lane and north of Davy Way.
- 1.1.4 H-Pack Packaging UK Ltd was established in 2016 as the UK & European arm of Hotpack Packaging Industries LLC Group (Dubai, United Arab Emirates). Incorporated in 1995, Hotpack UAE has, over the last 22 years, grown to become the largest manufacturer & distributor of food packaging materials and solutions in the Middle East.
- 1.1.5 This Transport Assessment has been prepared to support the planning application for the proposed expansion to the commercial property occupied by H-Pack Packaging UK Ltd off Davy Way. The report will include an analysis of the existing transport provision within the vicinity of the site, including sustainable transport facilities, traffic flows and the operation of the existing highway network. This assessment considers the adequacy of this existing provision to accommodate the future demands associated with the application proposals.

1.1.6 Details of the proposed pedestrian and vehicular access arrangements are set out in this report, together with a detailed assessment of the potential traffic impact of the development proposals on the surrounding local highway network.

1.1.7 This report concludes that the proposed development can be accommodated without detriment to the operational capacity or safety of the local highway network, with the mitigation measures proposed. The proposed residential development can also be accessed by sustainable modes of transport.

## **1.2 Policy Context**

1.2.1 The development proposals have been considered in the context of the following national policies and guidance:

Planning Policy Wales (PPW) Edition 11 2021

1.2.2 In relation to Transport PPW states in Paragraph 4.1.1 that:

*'The planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport':*

1.2.3 The delivery of this objective could be supported through a modal shift to walking, cycling and public transport. Paragraph 4.1.10 of the PPW states that sustainable transport can be supported by facilitating developments which:

- *'are sited in the right locations, where they can be easily accessed by sustainable modes of travel and without the need for a car;*
- *are designed in a way which integrates them with existing land uses and neighbourhoods; and*
- *make it possible for all short journeys within and beyond the development to be easily made by walking and cycling'.*

Planning Policy Wales, Technical Advice Note 18: Transport

1.2.4 Technical Advisory Note (TAN) 18 provides detailed guidance on implementing the transport objectives contained in PPW.

1.2.5 Paragraph 2.3 of TAN 18 focuses on integrating land use planning and transport and suggests that integration can help in achieving wider sustainable objectives by:

- *'Promoting resource and travel efficient settlement patters;*
- *Ensuring new development is located where there is, or will be, good access by public transport, walking and cycling thereby minimising the need for travel and fostering social inclusion;*
- *Managing parking provision;*
- *Ensuring that new development and major alterations to existing developments include appropriate provision for pedestrians (including those with special access and mobility requirements), cycling, public transport, and traffic management and parking/ servicing;*
- *Encouraging the location of development near other related uses to encourage multi-purpose trips;*
- *Promoting cycling and walking;*
- *Supporting the provision of high quality, inclusive public transport;*
- *Supporting provision of a reliable and efficient freight network;*
- *Promoting the location of warehousing and manufacturing developments to facilitate the use of rail and sea transport for freight;*
- *Encouraging good quality design of streets that provide a safe public realm and a distinct sense of place; and*
- *Ensuring that transport infrastructure or service improvements necessary to serve new development allow existing transport networks to continue to perform their identified functions'.*

1.2.6 Chapter 9 and Annex D of TAN 18 refer to the preparation of Transport Assessments in relation to development and paragraph D.2 outlines the following aims of producing a Transport Assessment:

- *Understand the transport impacts of the development;*
- *Clearly communicate the impacts to assist the decision making process;*
- *Demonstrate the development is sited in a location that will produce a desired and predicted output (for example in terms of target modal split);*
- *Mitigate negative transport impacts through the design process and secure through planning conditions or obligations; and*
- *Maximise the accessibility of the development by non-car modes’.*

1.2.7 The remainder of this report will outline how the development proposals meet the objectives of TAN 18. A Framework Travel Plan is also included as an Appendix to this report, which outlines mitigation measures and initiatives to encourage sustainable travel.

#### Wrexham Unitary Development Plan

1.2.8 The Wrexham UDP 1996 – 2011 was adopted by Wrexham County Borough Council in February 2005. The two relevant transport policies contained in the UDP comprise Policy T8 and Policy T9.

1.2.9 UDP Policy T8 states:

*‘Development granted planning permission will be required to provide vehicle parking spaces either on site or nearby, in accordance with the Council’s current parking standards. Special regard will be paid to the following factors, as appropriate:*

- The availability of public transport nearby;
- Proximity to public car parking;

- Proximity to local services and facilities;
- Road safety hazards and amenity considerations arising from on-street parking in the vicinity of the site.

*Where implementation difficulties arise in making parking provision on-site or nearby, the Council will require a developer to make financial contributions for measures to assist public transport or walking and cycling as appropriate’.*

1.2.10 UDP Policy T9 states:

*‘Development proposals will be required to provide walking and cycling routes, where feasible and appropriate, that link with existing or proposed walking and cycling routes and integrate with the public transport system. Opportunities for horse riding along these routes will be secured where appropriate’.*

1.2.11 UDP Policy GDP1 also refers to traffic and transportation:

- *D) ensuring safe and convenient pedestrian and vehicular access to and from development sites, both on site and in the nearby locality.*
- *E) ensure that built development is located where it has convenient access to public transport facilities and is well related to pedestrian and cycle routes wherever possible.’*

#### Wrexham Local Development Plan 2013 - 2028

1.2.12 Wrexham are preparing the Local Development Plan (LDP) which will replace the current adopted Unitary Development Plan. The LDP will be a long-term land use and development strategy, focused on achieving sustainable development and will:

- guide development for housing, employment, retail and other uses;
- set out policies that will be used to decide planning applications; and
- safeguard areas of land requiring protection or enhancement.



### 1.3 Structure

1.3.1 The structure of the report herein is set out as follows:

- **Section 2.0** considers the location of the development site, the local highway network, and the existing infrastructure provision for sustainable modes of transport;
- **Section 3.0** sets out the details of the development proposals, site access and infrastructure proposals;
- **Section 4.0** presents the baseline conditions of the local highway network;
- **Section 5.0** deals with the future baseline conditions and also the potential trip generation of the proposed development and associated distribution methodology;
- **Section 6.0** considers the operational performance of the local highway network for a future assessment year, with the development in place;
- **Section 7.0** provides a summary and conclusion to the report derived from the analysis presented in the above chapters.

1.3.2 The report has been prepared solely in connection with the proposed development as stated above. As such, no responsibility is accepted to any third party for all or any part of this report, or in connection with any other development

## 2.0 THE DEVELOPMENT SITE

### 2.1 Site Location and Surrounding Area

2.1.1 The development site is located in Llay, approximately nine kilometres to the north of Wrexham. The site is a parcel of grassed and hard-standing land to the south-west of the existing H-Pack unit; to the south-west of the B5373 Rackery Lane and north of Davy Way.

2.1.2 The proposed development includes the construction of a warehouse, associated with the existing H-Pack Packaging UK Ltd unit off Davy Way, including access roads, parking areas and service provision. The development proposals are described in further detail in **Section 4.0**.

2.1.3 The location of the site in relation to the local highway network is illustrated in **Figure 2-1**.



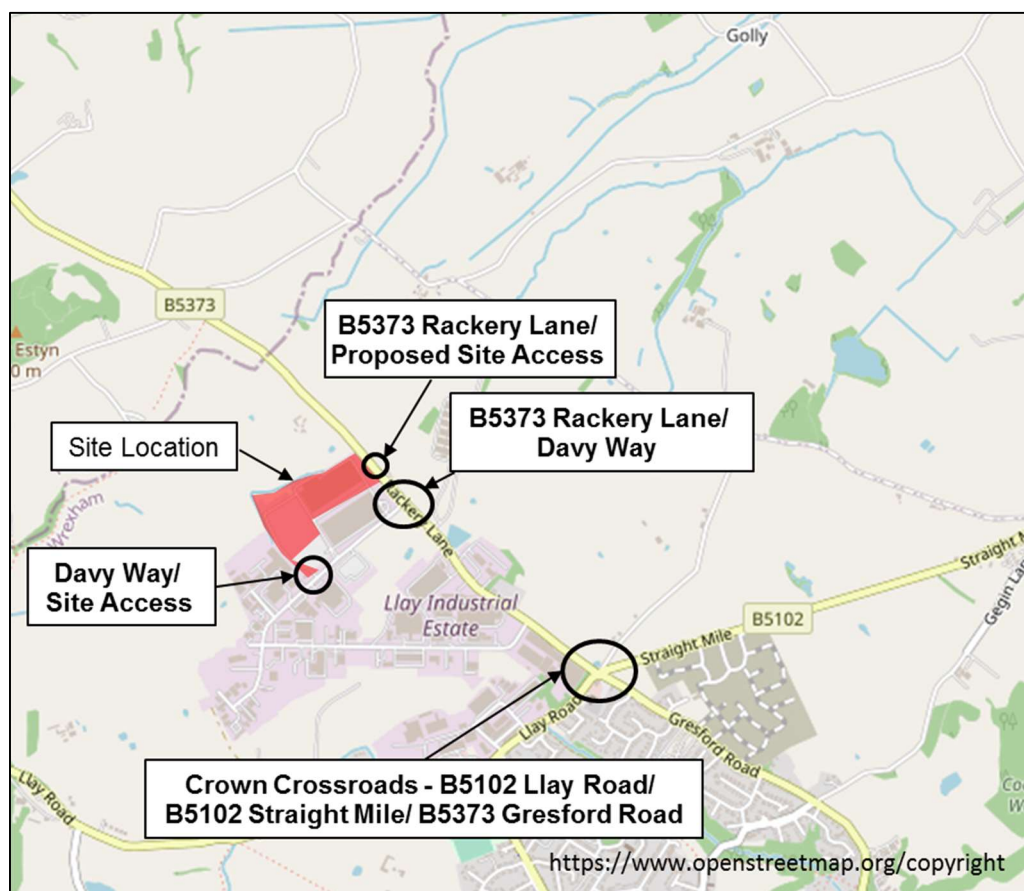
**Figure 2-1: Site Location**

## 2.2 Local Highway Network

2.2.1 In addition to the existing and proposed site accesses, the study area includes the following junctions surrounding the site:

- B5373 Rackery Lane/ Davy Way – priority controlled junction; and
- Crown Crossroads - B5102 Llay Road/ B5102 Straight Mile/ B5373 Gresford Road - signalised crossroads junction.

2.2.2 The locations of these junctions are illustrated in **Figure 2-2**.



**Figure 2-2: Local Highway Network**

2.2.3 Davy Way is a single lane, two-way carriageway, subject to a 30 mph speed limit, which runs along the southern boundary of the site. Footways are provided to both side of the carriageway. Access to the site is taken off Davy Way, via a priority controlled T-junction, approximately 375 metres west of the B5373 Rackery Lane.

- 2.2.4 The B5373 Rackery Lane is a single lane, two-way carriageway, which runs along the eastern boundary of the site. Rackery Lane is subject to a 40 mph speed limit to the south of the proposed site access and a 50 mph speed limit to the north of the proposed access. There is a footway on the southern side of the carriageway and an intermittent footway on the northern side. The footway widths are between 1.5 metres and 2.0 metres. Street lighting is provided along its length.
- 2.2.5 Approximately 450 metres to the north-west of Davy Way, Rackery Lane becomes Gresford Road. To the south-east Rackery Lane meets Gresford Road and Straight Mile at a 5-arm signal controlled junction, known as the Crown Crossroads.
- 2.2.6 Chapel Lane runs northeast from Crown Crossroads for approximately 900 metres until a priority controlled junction with Dark Lane and Lon Uchaf. Chapel Lane forms a single lane, two-way carriageway, approximately 5.5 metres in width. There is no footway provision. Chapel Lane is subject to a 30 mph speed limit. Street lighting is provided intermittently along its length.
- 2.2.7 The B5102 Straight Mile runs eastwards from Crown Crossroads, for approximately 1.5 kilometres, until the carriageway continues as Croeshowell Hill. The B5102 Straight Mile forms a single lane, two-way carriageway approximately seven metres in width. There is a footway on the northern side of the road which is less than one metre wide. The carriageway has a speed limit of 50 mph/ 30 mph and there is no street lighting present.
- 2.2.8 The B5373 Gresford Road runs southwards from Crown Crossroads, for approximately 2.5 kilometres, until it forms a priority controlled junction with the B5445 Chester Road. Gresford Road forms a single lane, two-way carriageway, with an approximate width of six metres. The footway on the southern side of the carriageway is approximately two metres in width. Gresford Road has a speed limit of 30 mph and street lighting is provided along its length.

- 2.2.9 Llay Road runs southwest from Crown Crossroads, for approximately 2.5 kilometres, until it forms a priority controlled junction with the A541 Wrexham Road at Cefn-y-bedd. The B5102 Llay Road forms a single lane, two-way carriageway approximately seven metres in width. Footways are present on both sides of the carriageway, with an approximate width of between 1.5 metres and 2.0 metres. The carriageway has a speed limit of 40 mph within Llay, although increases to 60 mph west of the Llay New Road/ First Avenue roundabout junction. Street lighting is present along the section of the carriageway subject to a 40 mph speed limit.
- 2.2.10 Planning application P/2017/1054 and P/2020/0623 have resulted in improvements works being implemented at the Crown Crossroads. At the time of writing these measures are being implemented on site. These works include the installation of Microprocessor Optimised Vehicle Actuation (MOVA) technology at the junction, widening on Straight Mile to create an additional waiting lane, rationalisation of the existing road markings and extending Llay Road arm splitter island. The widening scheme will create an additional lane of Straight Mile. These proposals include marking the nearside lane for ahead and left turning movements with the offside lane exclusively for right turning vehicles. Other works completed in association with the above applications include; speed amendments to the B5102 Straight Mile; traffic calming measures along the B5102 Straight Mile and the B5373 Gresford Road and pedestrian crossing points along the B5373 Gresford Road.
- 2.2.11 In order to assess the operational performance of the local highway network, traffic counts, have been obtained from an independent traffic count undertaken on Wednesday 29th June 2022, at the B5373 Rackery Lane/ Davy Way and Davy Way/ Site Access junctions. Due to road works being undertaken at the Cross Crossroads in June 2022, surveys were undertaken at this junction on Tuesday 19<sup>th</sup> July 2022. ATCs were undertaken on the B5373 Rackery Lane during both survey periods to determine whether a seasonality factor needs to be applied to the Crown Crossroads junction. This is detailed further in **Section 4.0**.

## 2.3 Active Travel

2.3.1 The proposal site is accessible by a number of non-car modes, providing real potential to reduce private car use. This section provides an appraisal of the existing sustainable transport network surrounding the development site, with due regard to the following:

- walking and cycling network; and
- public transport network.

### Walking and Cycling

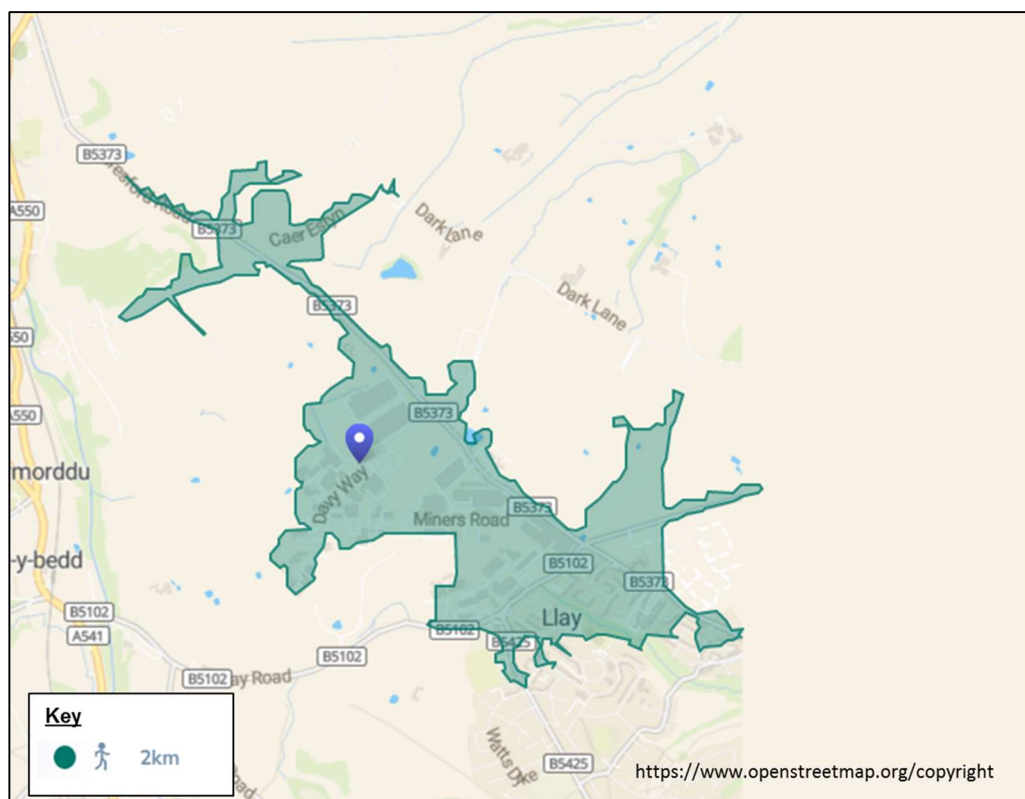
2.3.2 The Institution of Highway and Transportation (IHT) document entitled 'Guidance for Journeys of Foot' (2000) suggests 'acceptable' walking distances for different journey purposes. They suggest that walking distances for pedestrians without mobility impairment, for commuting and education, are up to 500 metres as a desirable distance, up to 1,000 metres as an acceptable distance and 2,000 metres as the preferred maximum. The document recognises that:

*'... that it is not always possible to achieve ideal results in all situations due to site constraints, costs or other practicalities and that compromises must sometimes, rightly, be made'* (Para 1.10).

2.3.3 The document goes on to advise that some 80% of walking journeys in urban areas are less than 1.0 mile long and that the average length is 1.0 kilometres (0.6 miles) and that this differs little by age or sex. (Source: IHT document, Providing for Journeys on Foot, Para. 3.30).

2.3.4 The local area benefits from good provisions of footways, which support pedestrian movements around the village. Key highway routes in the area such as Rackery Lane, Gresford Road and Llay Road, benefit from a high-quality provision of footways along at least one side of the carriageway. All residential roads within the immediate vicinity around the development site have footways on both sides of the carriageway providing a high standard of pedestrian safety and an overall well-connected network to encourage active travel to the employment site.

- 2.3.5 Pedestrian refuges are provided at the Crown Crossroads, on Gresford Road and the B5102 (w). Planning application P/2014/0905 also includes the provision a controlled crossing on Gresford Road. The crossing point is located to the south of Fairoaks Crescent and the north of the residential access. The crossing is proposed as a Puffin facility.
- 2.3.6 A two kilometre walking catchment from the site is illustrated in **Figure 2-3**. The walking catchment encompasses a large residential area, including the whole of Llay Industrial Estate, the Aldi foodstore and residential development adjacent to Crown Crossroads.

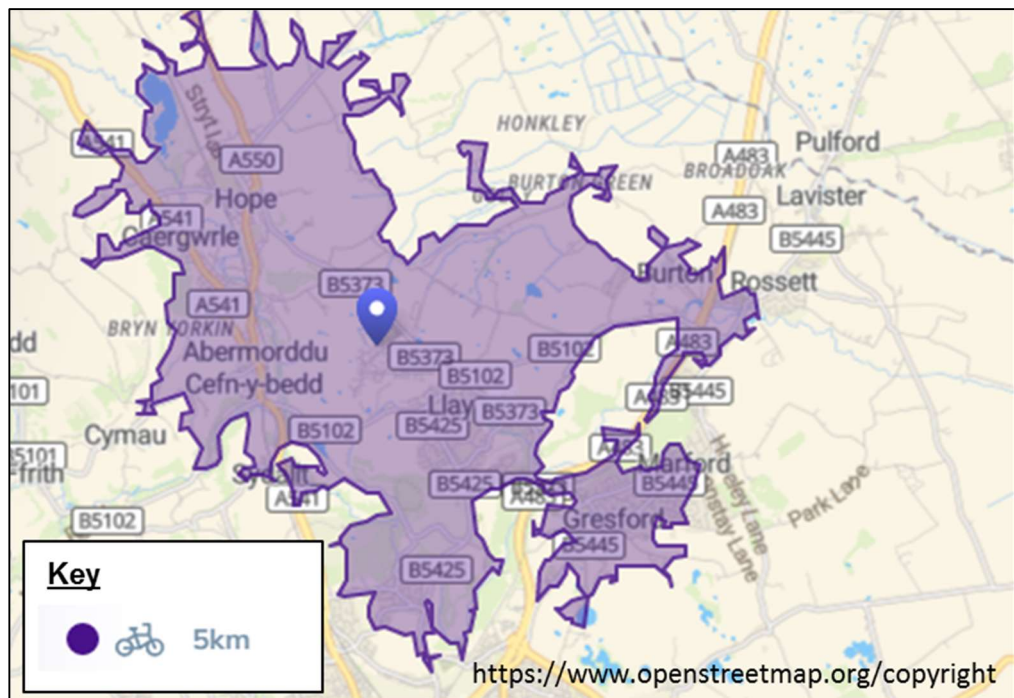


**Figure 2-3: Two Kilometre Walking Catchment**

- 2.3.7 An acceptable cycle distance is considered to be up to five kilometres. Although now superseded PPG13 notes that:

*‘Cycling also has the potential to substitute for short car trips, particularly those under 5km and to form part of a longer journey by public transport.’*  
(Para. 77)

- 2.3.8 The Department for Transport (DfT) Local Transport Note 2/08 also states that many utility cycle journeys are under three miles, although for commuters, a trip distance of over five miles is not uncommon. (Para. 1.5.1)
- 2.3.9 Generally, the topography of the local area is conducive to cycling. Wrexham County Borough Council has established a network of cycle routes throughout the borough to encourage this mode of travel.
- 2.3.10 A five kilometre catchment of the site is illustrated in **Figure 2-4**. A five kilometre cycle catchment of the site incorporates the surrounding areas of Rossett, Marford, Gresford, Cefn-y-bedd, Caergwrie and Hope.



**Figure 2-4: Five Kilometre Cycling Catchment**

- 2.3.11 With regards to formal cycle facilities, there is a designated local cycle route along Llay New Road which links Llay Road and First Avenue with New Rhosrobin. The cycle route is formed almost entirely of a designated off-road cycle provision, with a short section of approximately 180 metres in Llay being on-road.



2.3.12 This catchment indicates that cycling could be seen as a viable form of commutable transport for those working on-site and living in the surrounding residential areas. Thus, the location of the proposed development would provide the opportunity for employees and visitors to access the site by bicycle. Walking and cycling links in the vicinity enhance the viability of such trips.

2.3.13 A suitable level of street lighting is present throughout the area. Generally, the pedestrian/ cycle facilities encourage movement on foot/ cycle within the vicinity of the development site and provide adequate links to the nearest bus stops and neighbouring residential developments (both existing and future developments), thus encouraging sustainable travel to the site.

### **Public Transport**

#### Bus Services

2.3.14 Guidance published by the Institute of Highways and Transportation 'Planning for Public Transport in Developments' (1999) recommends that the maximum walking distance to a bus stop should be 400 metres, equating to an approximate five minute walk.

2.3.15 Pats Coaches run a Morning and Evening service Monday to Friday, which are accessible from Davy Way. These include:

- PC1 – Southsea – Llay Industrial Estate; and
- PC2 – Gatewen – Queenpark – Llay Industrial Estate.

2.3.16 Further bus stops are accessible on Gresford Road and Llay Road. These stops are served by bus service 34 which routes between Wrexham – Trevalyn, via Pandy, Llay, and Burton. The service offers three services between 1000 – 1600 on Wednesday, Friday, and Saturday.

### Rail Services

2.3.17 The closest railway station to the development is Cefn-y-bedd, located approximately 3.6 kilometres to the Northwest of the site. It offers hourly services to Wrexham Central and Bidston railway station. Although outside of a typical walking catchment, it is considered that Cefn-y-bedd could be utilised as part of a multi-modal trip.

## **2.4 Summary**

2.4.1 The Travel Plan for the site would include measures to encourage staff and customers to use public transport. A Framework Travel Plan is included in **Appendix C**.

2.4.2 Overall, it is evident that the site is accessible to pedestrians, cyclists, and users of public transport. The proposed development will include measures to promote the use of such sustainable modes of transport.

### **3.0 THE PROPOSED DEVELOPMENT**

#### **3.1 Overview**

3.1.1 The project would see the erection of a storage and distribution building (Class B8) with circa 14,865 Sqm (160,000 Sqft) footprint including ancillary (integral) offices over two floors, creation of a service yard and dedicated parking areas for cars, with associated access and servicing including new vehicle access points from Rackery Lane (for cars only) and modified vehicle access work to Davy Way (for HGVs only), new landscaping and other works. The site layout is included in **Appendix A**

3.1.2 The proposed warehouse is classified as a 'dark warehouse'. A dark warehouse is defined as a fully automated warehouse that operates without the use of human labour; you can simply turn the lights out and operation will continue to run. The employee trip attraction associated with the proposed warehouse will therefore be limited.

#### **3.2 Proposed Means of Access**

##### Vehicular Access

3.2.1 The site is currently accessed off Davy Way via a priority controlled T-junction. This access will be retained as part of the development proposals; with an additional access proposed off the B5373 Rackery Lane.

3.2.2 It is proposed that the existing access off Davy Way will become the principal access for service vehicles to and from the site. The access will be amended to improve service vehicle movements. The existing site access bell mouth from Davy Way into the development site will be amended with 9.0 metre entry kerb line radii and dropped kerb, with associated tactile paving. The access form and location are illustrated in drawing 735-01/GA-03 contained in **Appendix B**.

- 3.2.3 The proposed access off the B5373 Rackery Lane is a three arm priority controlled T-junction. The access will include 9.5 metre site access bell mouth onto Rackery Lane, with associated 9 metre entry and exit kerb line radii. Two metre footway connections into the proposed site with associated tactile crossing point at the bell mouth will also be provided. The access form and location are illustrated in drawing 735-01/GA-01 Rev B contained in **Appendix B**. The access will become the principal access for all employees of the H-Pack site (existing and proposed). No HGV access will be permitted from this location.
- 3.2.4 There will be no internal vehicular route between the accesses on Davy Way and Rackery Lane, within the site; although an emergency vehicular route has been incorporated into the design. Permeability for pedestrians and cyclist will be provided within the site, with routes between the accesses provided.
- 3.2.5 In order to inform the required visibility splays for the proposed site access, an ATC was installed in the vicinity of the proposed site access on the B5373 Rackery Lane. The ATC was installed for two 7-day periods between the dates of 29<sup>th</sup> June to 05<sup>th</sup> July 2022 and 19<sup>th</sup> July 2022 and 25<sup>th</sup> July 2022. The results of the analysis demonstrate the following average and 85<sup>th</sup> percentile speed:
- Northbound:
    - Average – 41 mph; and
    - 85<sup>th</sup> percentile – 47 mph.
  - Southbound:
    - Average – 41 mph; and
    - 85<sup>th</sup> percentile – 47 mph.

- 3.2.6 As stated previously the speed limit on Rackery Lane, in the vicinity of the proposed access, changes from 40 mph to 50 mph. Based on 85<sup>th</sup> percentile speeds of a 47 mph observed speed limit (consistent in both ATC surveys), applying visibility splay criteria detailed in Manual for Streets, a design standard visibility splay of 2.4 metres by 84 metres has been calculated (including bonnet length adjustment).
- 3.2.7 Based on site observations and measurements taken from topographical survey data, the proposed access arrangement can achieve the required visibility splays. The proposed access drawing is in drawing 735-01/GA-02 Rev B attached in **Appendix B**.
- 3.2.8 The transportation impacts of these proposals are considered later in this report.
- 3.2.9 A Stage 1 Road Safety Audit of the proposed access junction on the B5373 Rackery Lane has also been undertaken the findings of which are attached in **Appendix D** along with the associated Designer's Response document.

### **3.3 Proposed Parking Provision**

- 3.3.1 Wrexham's Local Plan Guidance Note No. 16 states that for B8 Storage & Distribution, a maximum of one car parking space per 100 sqm gross floor space should be provided. The car parking standards set out in the guidance is maximum standards for the land use category. The guidance goes on to state that *'In cases where the amount of parking provided is below the maximum the Council will need to be satisfied that this is appropriate for the likely level of demand, without undermining requirements for inclusive access'*.
- 3.3.2 In addition to the above, guidance also states that 6% of parking proposed should be allocated for the use of disabled persons.
- 3.3.3 Based on standards the maximum parking provision would be c. 150 spaces. The proposed development will be accompanied by 135 car parking space, comprising 126 standard spaces and nine accessible spaces. While H-Pack propose to use the warehouse as a 'dark warehouse', where staffing numbers will be minimal, the proposed car parking provision will future proof the site for any further commercial warehouse use.

3.3.4 Wrexham policy standards require the provision of one cycle parking space per 1000 sqm gross floor space. This equates to a total provision of 15 cycle parking spaces. The development proposals include the provision of 16 cycle parking spaces in the form of eight Sheffield type stands. The stands will be located within a cycle shelter; to meet the policy requirements for long stay parking. The location of the cycle parking provision, along the south-western boundary, of the site is illustrated in the site layout plan contained in **Appendix A**.

## **4.0 BASELINE TRAFFIC CONDITIONS**

### **4.1 Introduction**

4.1.1 This section provides an appraisal of the transport network surrounding the proposed development site, including the baseline traffic flows on the study area network and an analysis of accident records for the local highway network.

4.1.2 The study area includes an analysis of the following junctions:

- Davy Way/ Site Access – priority controlled junction;
- B5373 Rackery Lane/ Proposed Site Access – priority controlled junction;
- B5373 Rackery Lane/ Davy Way – priority controlled junction; and
- Crown Crossroads - B5102 Llay Road/ B5102 Straight Mile/ B5373 Gresford Road - signalised crossroads junction.

4.1.3 The following sections therefore present the methodology adopted to establish baseline conditions within the agreed study area.

### **4.2 Baseline Traffic Flows**

4.2.1 Peak hour traffic flows for the junction of Davy Way/ Site Access and the B5373 Rackery Lane/ Davy Way have been derived from independent manual turning counts undertaken by PCC Traffic Information Consultancy on 29<sup>th</sup> June 2022.

4.2.2 Surveys were undertaken for a Weekday AM (0730 – 1000) and PM (1600 – 1830) peak periods. Analysis of the data determined that the peak hours were 0730 - 0830 during the AM peak and 1615 - 1715 during the PM peak.

4.2.3 Peak hour traffic flows at the Crown Crossroads junction have been derived from independent manual turning counts undertaken by PCC Traffic Information Consultancy on 19<sup>th</sup> July 2022. These surveys could not be undertaken at the time of the original surveys due to road works.

4.2.4 Surveys at the Crown Crossroads were undertaken for a Weekday AM (0730 – 1000) and PM (1600 – 1830) peak periods. Analysis of the data determined that the peak hours were 0730 - 0830 during the AM peak and 1615 - 1715 during the PM peak.

4.2.5 In order to ensure that the Crown Crossroads surveys were reliable and not impacted by the none-neutrality of the survey month, ATC data has been collected on the B5373 Rackery Lane. The ATCs were installed between the following dates, incorporating each of the turning count survey dates:

- Wednesday 29<sup>th</sup> June 2022– Tuesday 5<sup>th</sup> July 2022; and
- Tuesday 19<sup>th</sup> July 2022– Monday 25<sup>th</sup> July 2022.

The results of the surveys are summarised in **Table 4-1**.

**Table 4-1: Comparison of ATC Data**

Day	Time Period	ATC 1 29/06/22 – 05/07/22	ATC 2 19/07/22 – 25/07/22	Difference
Monday	AM Peak (0800 – 0900)	622	563	-59 (-9.5%)
	PM Peak (1600 – 1700)	664	639	-25 (-3.8%)
Tuesday	AM Peak (0800 – 0900)	645	568	-77 (-11.9%)
	PM Peak (1600 – 1700)	741	624	-117 (-15.8%)
Wednesday	AM Peak (0800 – 0900)	699	569	-130 (-18.6%)
	PM Peak (1600 – 1700)	709	705	-4 (-0.6%)
Thursday	AM Peak (0800 – 0900)	690	621	-69 (-10.0%)
	PM Peak (1600 – 1700)	725	752	27 (3.7%)
Friday	AM Peak (0800 – 0900)	596	510	-86 (-14.4%)
	PM Peak (1600 – 1700)	554	585	31 (5.6%)



- 4.2.6 The results of the comparison demonstrate that on average traffic flows through the junction were 13% lower during the AM and 2% lower during the PM in the July ATC compared to the June ATC. However, when comparing the days when the manual turning counts were undertaken (Friday for ATC 1 and Tuesday for ATC 2), traffic flows through the junction were 5% lower during the AM and 11% higher during the PM in the July ATC compared to the June ATC.
- 4.2.7 The Aldi foodstore was however operational during the July survey, which could account for some of the discrepancy. The Transport Assessment that accompanied the planning application assigned three vehicles during the AM peak and 20 vehicles during the PM peak past the ATC location. This would therefore suggest that there is minimal difference between the two surveys that would require an adjustment to the July survey.
- 4.2.8 The full survey results are attached in **Appendix E**. The resulting turning flows at the junction are illustrated in **Figure 4-1**.

### 4.3 Assessment Years

- 4.3.1 The base traffic has been growthed for assessment to a design year five years after application registration, 2027.
- 4.3.2 Growth factors will be applied to the 2022 surveyed traffic flows to calculate 2027 base traffic flows. This will be undertaken using TEMPRO 7 NTM AF15 Dataset with adjusted local growth for the Wrexham 020 super output area (E02000420), which encompasses the development site. The resulting growth factors for the AM and PM peak periods are shown in **Table 4-2**.

**Table 4-2: Growth Factors (Wrexham 020)**

Assessment Years	AM Peak Hour	PM Peak Hour
2022 - 2027	1.0442	1.0440

- 4.3.3 The growth factors presented above, have been applied to the surveyed traffic flows. **Figure 4-2** illustrates the 2027 baseline traffic flows.

#### **4.4 Committed Development Traffic Flows**

4.4.1 The following committed developments have been taken into consideration in the assessment:

- P/2014/0905 - Outline Application For 365 Dwellings and Erection Of 300 Square Metre Retail Unit - All Detailed Matters Reserved; and
- P/2020/0623 - Erection of foodstore (use class A1), car park, access, and landscaping.

4.4.2 The development traffic flows associated with each of the schemes has been taken from the Transport Assessments that accompanied the application. The committed development is summarised in **Figure 4-3** and **Figure 4-4**.

4.4.3 It should be noted that at the time of the traffic surveys a proportion of the residential properties associated with planning application P/2014/0905 were occupied. However, for robustness all flows illustrated in **Figure 4-3** have been used in the assessment.

4.4.4 At the time of the traffic surveys at the Crown Crossroads, the Aldi food store was open and operational. The traffic flows shown in Figure 4-4 at the Crown Crossroad are therefore removed from the assessment.

4.4.5 The 2027 Base plus Committed Development traffic flows are summarised in **Figure 4-5**.

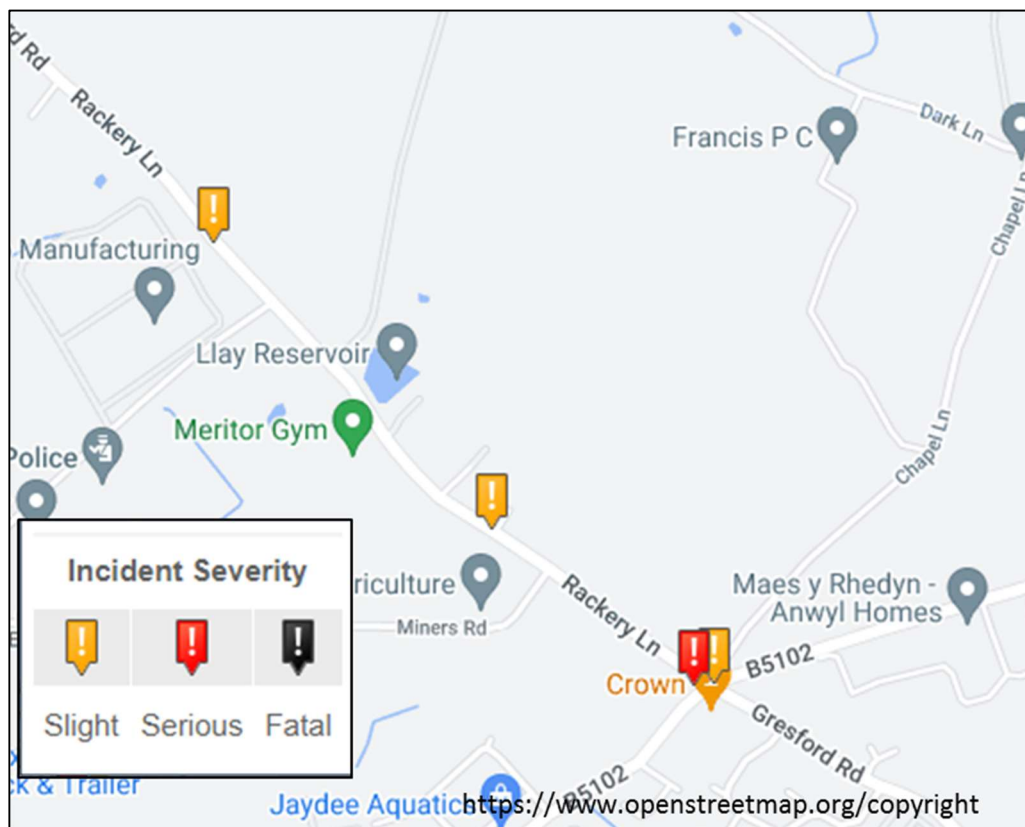
#### **4.5 Personal Injury Accident Data**

4.5.1 Personal Injury Accident data has been obtained from the Crash Map website ([www.crashmap.co.uk](http://www.crashmap.co.uk)) for the proposed study area for the most recent five year period for which data is complete (from the time of reviewing). The collisions have been reviewed in **Table 4-3**.

**Table 4-3: Summary of Personal Injury Collisions**

Location	Slight	Serious	Fatal
Davy Way	0	0	0
B5373 Rackery Lane/ Davy Way	0	0	0
B5373 Rackery Lane – north of Davy Way	1	0	0
B5373 Rackery Lane – between Davy Way and Crown Crossroads	1	0	0
Crown Crossroads	1	1	0
<b>Total</b>	<b>3</b>	<b>1</b>	<b>0</b>

- 4.5.2 In total for the study area under consideration four personal injury accidents were recorded. Three accidents were recorded as slight in severity and one as serious.
- 4.5.3 The slight accidents recorded on B5373 Rackery Lane – north of Davy Way, resulted from a rear shunt collision between two cars. The collision occurred during the day and the conditions recorded at the time of the collision were dry.
- 4.5.4 The slight accidents recorded on B5373 Rackery Lane – between Davy Way and Crown Crossroads, resulted from a rear shunt collision between two goods vehicles. The collision occurred during the day and conditions recorded at the time of the collision were dry.
- 4.5.5 The serious accident recorded at the Crown Crossroads resulted from a collision between a pedal cycle and goods vehicles. At the time of the collision the pedal cycle was proceeding normally, and the goods vehicle was turning left. The collision occurred during the day and conditions recorded at the time of the collision were dry.
- 4.5.6 The slight accident recorded at the Crown Crossroads resulted from a collision between two cars. At the time of the collision one vehicle was turning right and the other was proceeding normally along the carriageway. The collision occurred during the day and conditions recorded at the time of the collision were wet.



**Figure 4-6: Personal Injury Collision Locations**

4.5.7 The personal injury accident data would suggest that there is no particular trend or pattern of road accidents in the vicinity of the site resulting from any deficiencies in the local road network, or the existing/ future operation of the site.

## **5.0 DEVELOPMENT TRIP ATTRACTION, ASSIGNMENT AND DISTRIBUTION**

### **5.1 Proposed Development Trip Attraction**

5.1.1 As stated previously, the proposed expansion to the H-Pack site will be the construction of a warehouse with a Gross Floor Area of 14,865 sqm, associated with the existing H-Pack Packaging UK Ltd unit off Davy Way. The proposed warehouse is classified as a 'dark warehouse'. A dark warehouse is defined as a fully automated warehouse that operates without the use of human labour; you can simply turn the lights out and operation will continue to run.

5.1.2 The operator has confirmed that there will be a total of 150 staff employed on-site; split over two 8-hour shifts. Shift patterns will be 06:00 – 14:00 and 14:00 – 22:00. Shift changes therefore do not coincide with the highway peaks. There will however be trips associated with the distribution of products and the arrival of materials. Based on mode split data obtained from the operator for the existing warehouse, it is estimated that approximated 20% of employees will travel by private car and 80% will travel via sustainable modes; resulting in a two-way daily trip generation associated with staff of approximately 60 vehicles.

5.1.3 The operator has confirmed that during the AM peak there will be between 10 – 15 HGV movements and during the PM peak there will be four to five HGV movements. The operator has also confirmed that there will be a total of seven to eight LGV movements per day.

5.1.4 In order to present a robust assessment during the highway peaks, the trip attraction of the Warehouse has been based on standards B8 Warehouses contained within the TRICS database. The land use category '02 Employment F – Warehousing (Commercial)' has been selected to reflect the development proposals. The resulting average trip rates and detailed in **Table 5-1** with the TRICS data included in **Appendix F**.

**Table 5-1: Trip Rates per 100 sqm Gross External Area**

Peak Period	02 Employment F – Warehousing (Commercial)	Arrivals	Departures	Two-Way
AM Peak (0800 – 0900)	Vehicles	0.279	0.184	0.463
	OGVs	0.060	0.099	0.159
	Cyclists	0.015	0.000	0.015
PM Peak (1700 – 1800)	Vehicles	0.173	0.348	0.521
	OGVs	0.092	0.058	0.150
	Cyclists	0.000	0.010	0.010

Average trip rates

5.1.5 The trip rates have been multiplied by the combined GEA of the site, 14,865 sqm. The trip attraction associated with the development proposals are detailed in **Table 5-2**.

**Table 5-2: Trip Attraction of Development Proposal**

Peak Period	02 Employment F – Warehousing (Commercial)	Arrivals	Departures	Two-Way
AM Peak (0800 – 0900)	Vehicles	41	27	69
	OGVs	9	15	24
	Cyclists	2	0	2
PM Peak (1700 – 1800)	Vehicles	26	52	77
	OGVs	14	9	22
	Cyclists	0	1	1

5.1.6 The development proposals will result in an additional 69 two-way vehicle trips during the Weekday AM peak and 77 two-way vehicle trips during the PM peak. Of these vehicle trips, OGV movements on the network will increase by 24 two-way trips during the Weekday AM peak and 22 two-way trips during the PM peak.

## 5.2 Trip Distribution and Assignment

5.2.1 Amendments to the site layout will result in existing employees at the site entering and exiting the site via the proposed access on the B5373 Rackery Lane. The redistribution of existing employee trips is illustrated in **Figure 5-1**.

5.2.2 Development traffic has been distribution onto the local highway network based on Journey to Work Statistics obtained from the 2011 Census for the W02000420: Wrexham 020 middle output area, of which the proposed development will form part of. The resulting distribution is summarised in **Table 5-3**, with raw data contained in **Appendix G**.

**Table 5-3: Development Distribution**

<b>Route</b>	<b>Proportion</b>
A483 (n) via Straight Mile	10.96%
A483 (s) via Straight Mile	12.19%
Rackery Lane (n)	13.49%
Llay Road (w)	52.83%
Gresford Road (s)	2.18%
Turning Proportions	8.35%
<b>Total</b>	<b>100.00%</b>

5.2.3 The resulting distribution is illustrated in **Figure 5-2**. The assignment of development traffic is illustrated in **Figure 5-3**. The 2027 base plus committed plus development traffic flows are illustrated in **Figure 5-4**.

## 6.0 IMPACT OF DEVELOPMENT PROPOSALS ON THE OPERATIONAL PERFORMANCE OF THE LOCAL HIGHWAY NETWORK

### 6.1 Introduction

6.1.1 The following capacity assessments will demonstrate that the impact of this level of traffic would not be material on the operational performance of the local highway network.

6.1.2 To inform the Welsh Ministers (North & Mid Wales Trunk Road Agency) an assessment has been undertaken to demonstrate the effect the traffic associated with the proposed Warehouse will have on Junction 7 of the A483. These figures are presented as annual average daily traffic (AADT) and AM and PM peak flows.

### 6.2 Impact on Junction 7 of the A483

6.2.1 Based on the distribution presented in the previous section, it can be seen that traffic to/ from the site, could route through Junction 7 of the A483.

6.2.2 The resulting number of trips that would travel through Junction 7 of the A483 is presented in **Table 6-1** as annual average daily traffic (AADT) and AM and PM peak flows.

**Table 6-1: Impact on Junction 7 of the A483**

Peak Period	Arrivals	Departures	Two-Way
AM Peak (0800 – 0900)	5	3	8
PM Peak (1700 – 1800)	3	6	9
AADT	60	57	117

6.2.3 As is demonstrated by the above analysis, trips routed through Junction 7 in association with the proposed development are low and will therefore not have a material impact on the operation of the junction.

### 6.3 Junction Capacity Assessments

6.3.1 Capacity assessments have been undertaken for a Weekday AM and PM peak period. Assessments have been undertaken for the following junction, using the software noted:



- Davy Way/ Site Access – priority controlled junction - PICADY;
- B5373 Rackery Lane/ Proposed Site Access – priority controlled junction - PICADY;
- B5373 Rackery Lane/ Davy Way – priority controlled junction - PICADY; and
- Crown Crossroads - B5102 Llay Road/ B5102 Straight Mile/ B5373 Gresford Road - signalised crossroads junction - LINSIG.

6.3.2 PICADY presents results as Ratio of Flow to Capacity (RFC) and corresponding likely traffic queues. RFC values between 0.00 and 0.85 are generally accepted as representing stable and acceptable operating conditions. Values between 0.85 and unity represent variable operation (i.e., possible queues building up at the junction during the period under consideration and increases in vehicular delay moving through the junction).

6.3.3 LINSIG presents results as a percentage Degree of Saturation (DoS) and corresponding likely traffic queues for each modelled link at the junction. For Traffic Signals it is generally accepted that a Degrees of Saturation (DoS) of 90% or less on individual links represent satisfactory signal operation.

#### **Davy Way/ Site Access**

6.3.4 The results of the PICADY assessment are set out in **Appendix H** and summarised in **Table 6-2**.

**Table 6-2: Davy Way/ Site Access – PICADY Results**

Scenario	Arm	AM Peak Hour		PM Peak Hour	
		RFC	Q	RFC	Q
2022 Survey	Site Access	0.00	0	0.02	0
	Davy Way	0.01	0	0.00	0
2027 Base + Committed	Site Access	0.00	0	0.02	0
	Davy Way	0.01	0	0.00	0
2027 Base + Committed + Development	Site Access	0.02	0	0.02	0
	Davy Way	0.02	0	0.03	0

6.3.5 The operational capacity assessments demonstrate that the site access is sufficient to accommodate development traffic, for a future assessment year. The maximum Ratio of Flow to Capacity (RFC) occurs on the Davy Way during the PM peak period of 0.03 with no associated queue.

6.3.6 It is therefore considered that the use of the existing access for HGV use access is sufficient to accommodate the development proposals.

**B5373 Rackery Lane/ Proposed Site Access**

6.3.7 The results of the PICADY assessment are set out in **Appendix I** and summarised in **Table 6-2**.

**Table 6-3: B5373 Rackery Lane/ Proposed Site Access – PICADY Results**

Scenario	Arm	AM Peak Hour		PM Peak Hour	
		RFC	Q	RFC	Q
2027 Base + Committed + Development	Site Access	0.04	0	0.18	0
	B5373 Rackery Lane (n)	0.02	0	0.01	0

6.3.8 The operational capacity assessments demonstrate that the site access is sufficient to accommodate development traffic, for a future assessment year. The maximum Ratio of Flow to Capacity (RFC) occurs on the site access arm during the PM peak period of 0.18 with no associated queue.

6.3.9 It is therefore considered that the proposed site access is sufficient to accommodate the development proposals.

### B5373 Rackery Lane/ Davy Way

6.3.10 The results of the PICADY assessment are set out in **Appendix J** and summarised in **Table 6-4**.

**Table 6-4: B5373 Rackery Lane/ Davy Way – PICADY Results**

Scenario	Arm	AM Peak Hour		PM Peak Hour	
		RFC	Q	RFC	Q
2022 Survey	Davy Way - left	0.05	0	0.44	1
	Davy Way - right	0.13	0	0.33	1
	B5373 Rackery Lane (n)	0.33	1	0.07	0
2027 Base + Committed	Davy Way - left	0.06	0	0.47	1
	Davy Way - right	0.14	0	0.36	1
	B5373 Rackery Lane (n)	0.36	1	0.07	0
2027 Base + Committed + Development	Davy Way - left	0.06	0	0.46	1
	Davy Way - right	0.17	0	0.38	1
	B5373 Rackery Lane (n)	0.36	1	0.08	0

6.3.11 The operational capacity assessments demonstrate that the junction is sufficient to accommodate development traffic, for a future assessment year. The maximum Ratio of Flow to Capacity (RFC) occurs on Davy Way - left during the PM peak period of 0.46 with one pcu associated queue.

### Crown Crossroads - B5102 Llay Road/ B5102 Straight Mile/ B5373 Gresford Road

6.3.12 At the time of the survey the improvement works at the Crown Crossroads had been fully implemented. The following model results are therefore based on this layout.

6.3.13 The results of the LINSIG assessment are set out in **Appendix K** and summarised in **Table 6-5**.

**Table 6-5: Crown Crossroads – LINSIG Results**

Scenario	Arm	AM Peak Hour		PM Peak Hour	
		DoS	MMQ	DoS	MMQ
2022 Survey	B5102 Straight Mile	59.4%	7	61.6%	5
	B5373 Gresford Road	59.4%	5	61.5%	7
	Llay Road	60.4%	13	61.6%	10
	Rackery Lane	60.3%	7	62.0%	8
	Chapel Lane	19.3%	1	13.8%	1
	PRC (%)	49.1		45.2	
2027 Base plus Committed	B5102 Straight Mile	66.5%	7	69.0%	5
	B5373 Gresford Road	66.3%	7	69.0%	8
	Llay Road	67.4%	14	68.7%	12
	Rackery Lane	66.4%	8	69.2%	9
	Chapel Lane	19.3%	1	13.8%	1
	PRC (%)	33.5		30.1	
2027 Base plus Committed + Development**	B5102 Straight Mile	68.7%	8	70.9%	6
	B5373 Gresford Road	68.7%	7	72.4%	9
	Llay Road	69.5%	15	72.0%	13
	Rackery Lane	69.4%	8	72.1%	9
	Chapel Lane	19.3%	1	13.8%	1
	PRC (%)	29.5		24.3	

6.3.14 The results of the assessment demonstrate that the proposed development will not have a material impact on the operational performance of the junction, for a future assessment year. The junction will continue to operate with a positive Practical Reserve Capacity during all scenarios.

#### 6.4 Summary

6.4.1 It is therefore considered that in operational capacity terms, the proposed development will not have a material impact on the operational performance of the local highway network.

## 7.0 SUMMARY AND CONCLUSIONS

### 7.1 Summary

- 7.1.1 This Transport Assessment has been prepared by Cameron Rose Associates on behalf of H-Pack Packaging UK Ltd, in order to examine the highway and transportation issues associated with the erection of 1no B8 Storage and Distribution building and associated access and external works at Land adjacent to H-Pack, Davy Way, Llay.
- 7.1.2 The project would see the construction of a warehouse with a Gross Floor Area of 14,865 sqm, associated with the existing H-Pack Packaging UK Ltd unit off Davy Way. The site is currently accessed off Davy Way via a priority controlled T-junction. This access will be retained as part of the development proposals; with an additional access proposed off the B5373 Rackery Lane. The report will include an assessment of the proposed site access strategy and an analysis of the impact of development traffic on the local highway network.
- 7.1.3 The development site is located in Llay, approximately nine kilometres to the north of Wrexham. The site is a parcel of grassed and hard-standing land to the south-west of the existing H-Pack unit; to the south-west of the B5373 Rackery Lane and north of Davy Way.
- 7.1.4 H-Pack Packaging UK Ltd was established in 2016 as the UK & European arm of Hotpack Packaging Industries LLC Group (Dubai, United Arab Emirates). Incorporated in 1995, Hotpack UAE has, over the last 22 years, grown to become the largest manufacturer & distributor of food packaging materials and solutions in the Middle East.
- 7.1.5 The proposed warehouse is classified as a 'dark warehouse'. A dark warehouse is defined as a fully automated warehouse that operates without the use of human labour; you can simply turn the lights out and operation will continue to run.

- 7.1.6 The operator has confirmed that there will be a total of 150 staff employed on-site; split over two 8-hour shifts. Shift patterns will be 06:00 – 14:00 and 14:00 – 22:00. Shift changes therefore do not coincide with the highway peaks. There will however be trips associated with the distribution of products and the arrival of materials. The operator has confirmed that during the AM peak there will be between 10 – 15 HGV movements and during the PM peak there will be four to five HGV movements. The operator has also confirmed that there will be a total of seven to eight LGV movements per day.
- 7.1.7 In order to present a robust assessment during the highway peaks, the trip attraction of the Warehouse has been based on standards B8 Warehouses contained within the TRICS database. The land use category '02 Employment F – Warehousing (Commercial)' has been selected to reflect the development proposals.
- 7.1.8 The development proposals will result in an additional 69 two-way vehicle trips during the Weekday AM peak and 77 two-way vehicle trips during the PM peak. Of these vehicle trips, OGV movements on the network will increase by 24 two-way trips during the Weekday AM peak and 22 two-way trips during the PM peak.
- 7.1.9 The resulting number of trips that would travel through Junction 7 of the A483 is eight two-way trips during the AM peak, nine two-way trips in the PM peak and an AADT of 117 two-way trips. Trips routed through Junction 7 in association with the proposed development are low and will therefore not have a material impact on the operation of the junction.
- 7.1.10 Operational capacity assessments of the junctions within the study area have demonstrated that the proposed site accesses are sufficient to meet the developments requirements and that the proposed development will not have a material impact on the operational performance of the local highway network.

## **7.2 Conclusions**

- 7.2.1 This report has demonstrated how the proposed development promotes accessibility by all modes of travel, in particular public transport, cycling and walking by virtue of its sustainable location and the physical infrastructure that would be put in place, as well as the Travel Plan which would be used to influence travel behaviour.
- 7.2.2 The impacts of residual trips from the proposed development have been assessed and it is evident that these would not have a significant impact on the operational performance and safety of the local highway network.
- 7.2.3 It is concluded that there are no overriding reasons preventing the Local Planning Authority from recognising that the proposal is acceptable with regard to the local highway network.



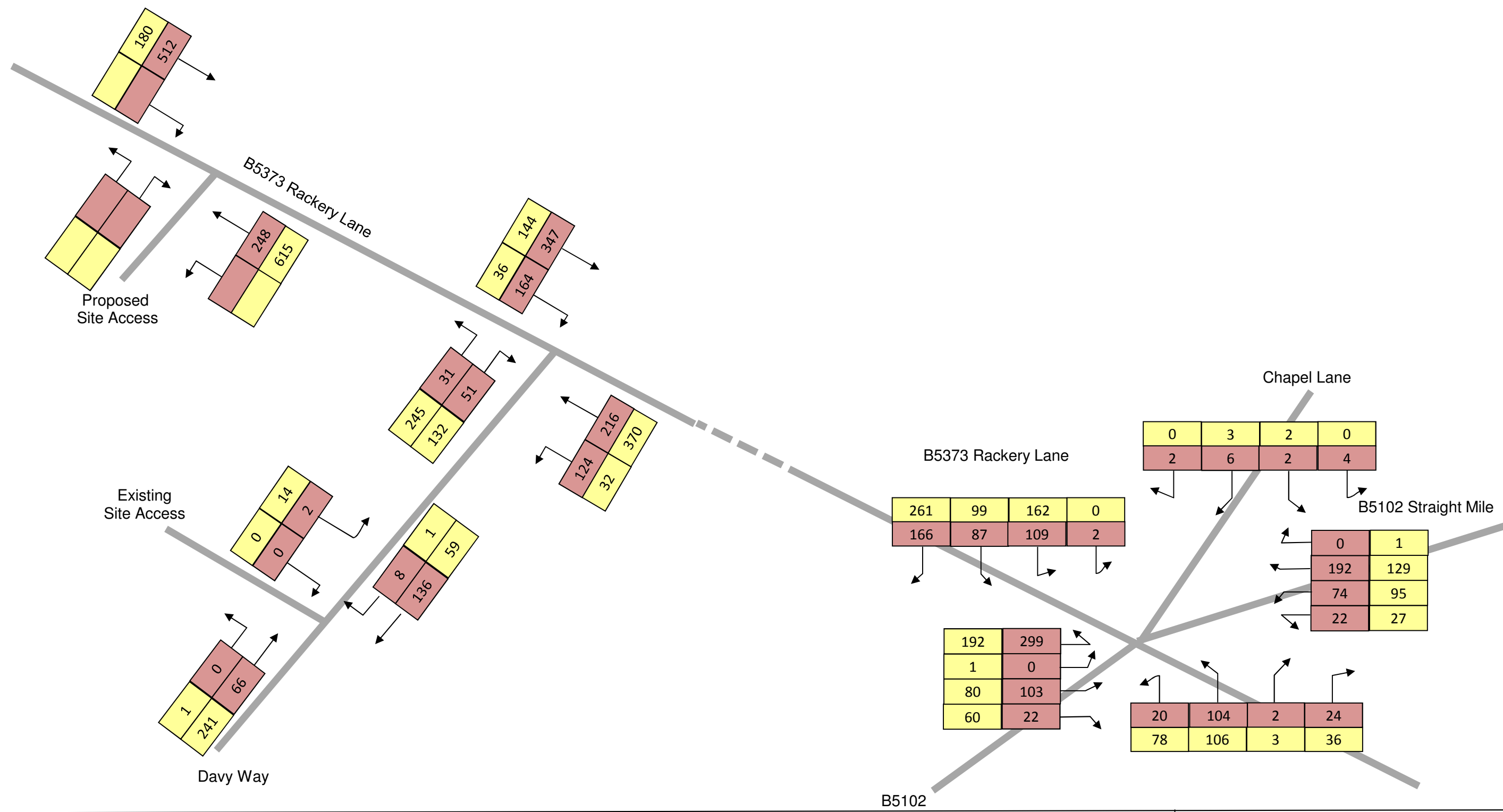




# FIGURES

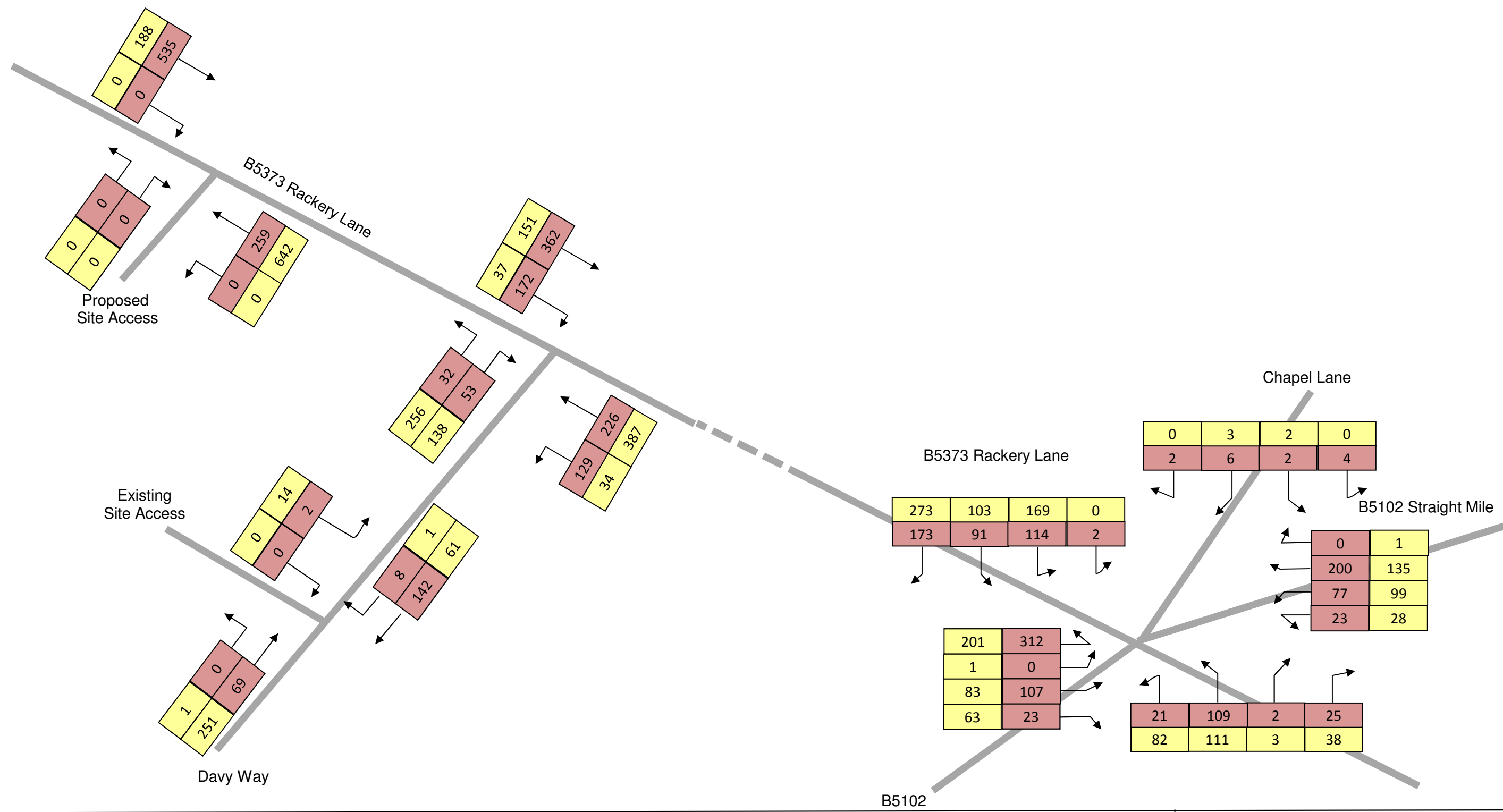
**Key**

- Weekday AM Peak hour
- Weekday PM Peak hour



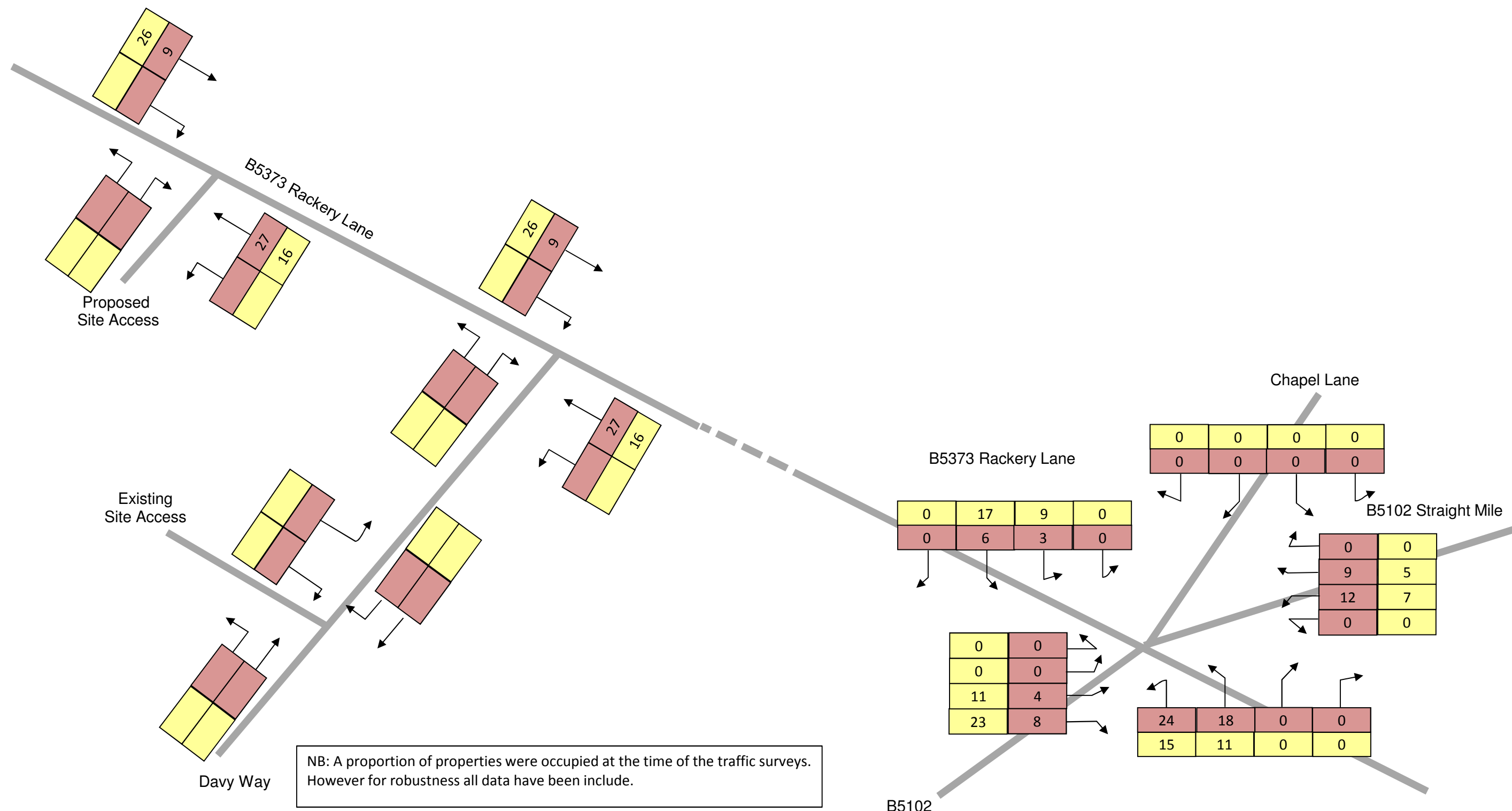
**Key**

- Weekday AM Peak hour
- Weekday PM Peak hour



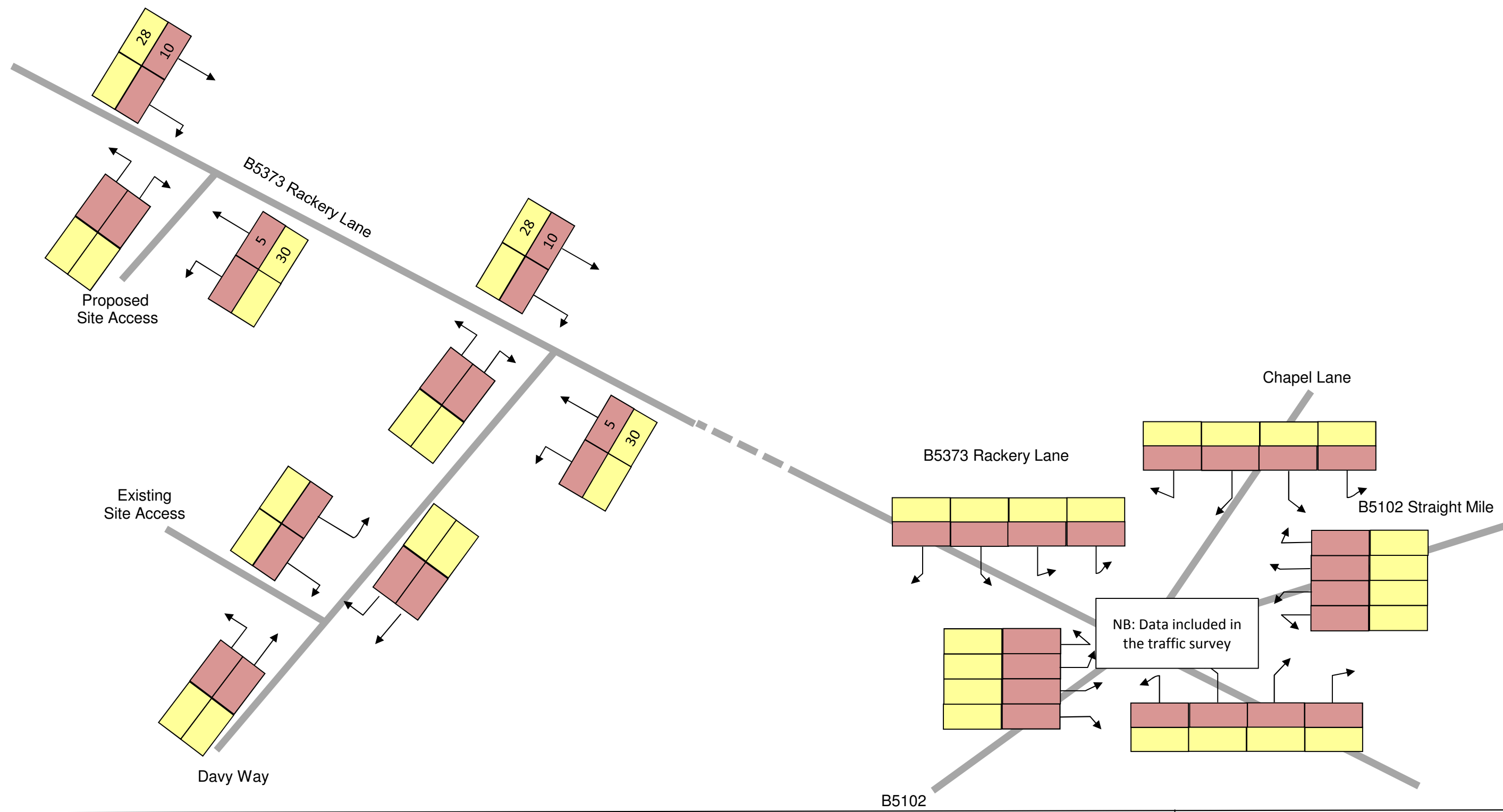
**Key**

- Weekday AM Peak hour
- Weekday PM Peak hour



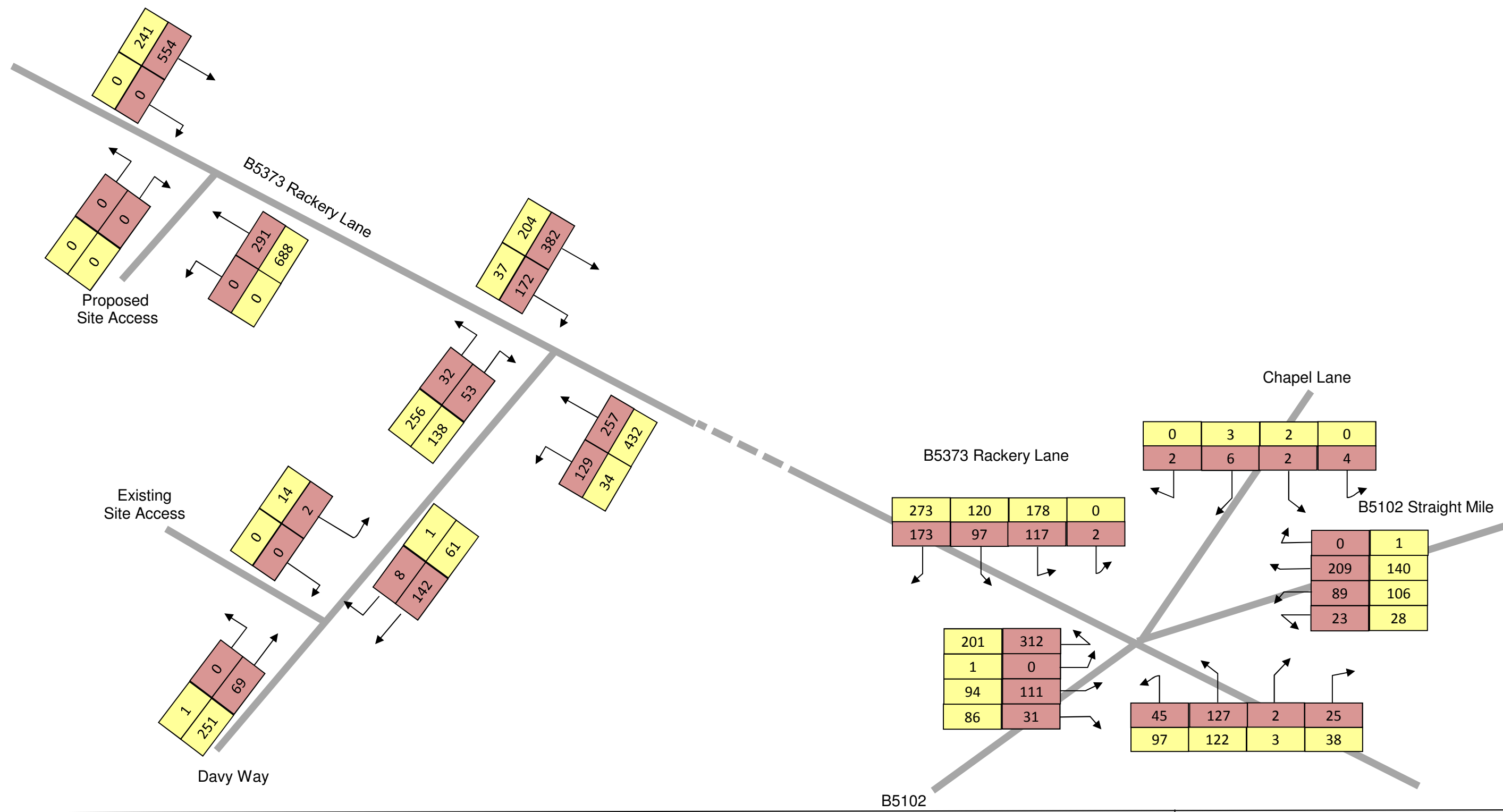
**Key**

- Weekday AM Peak hour
- Weekday PM Peak hour



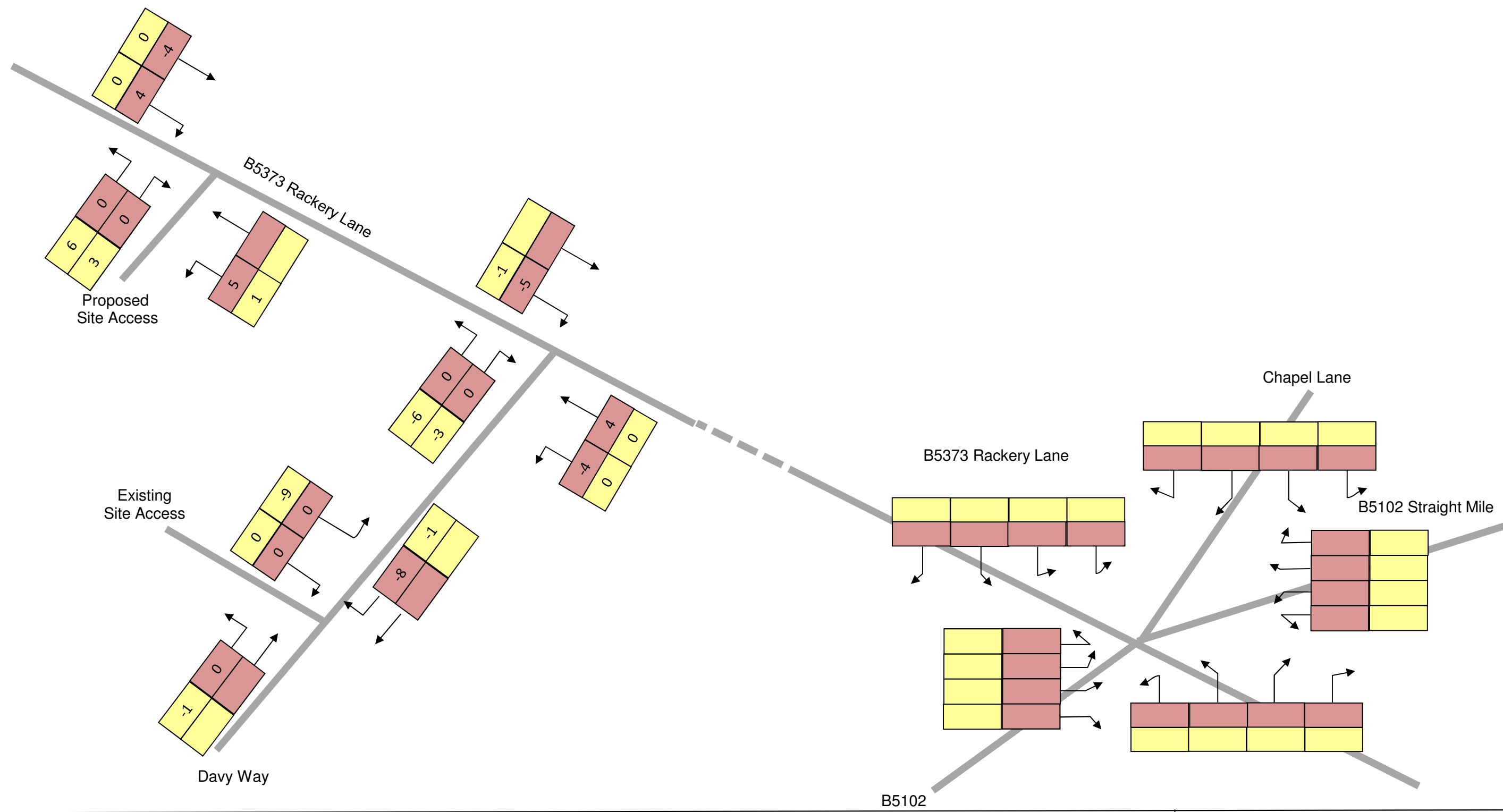
**Key**

- Weekday AM Peak hour
- Weekday PM Peak hour



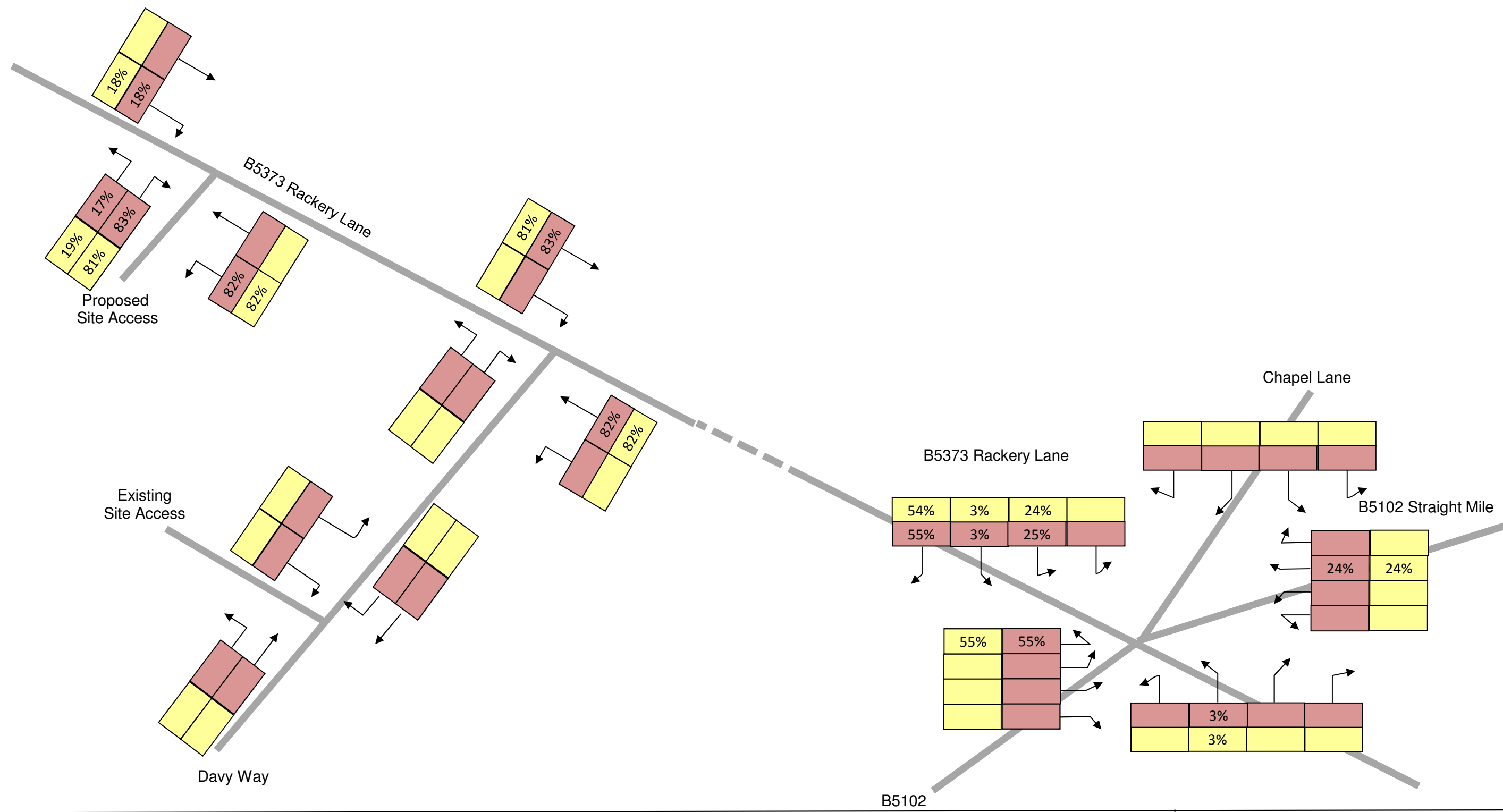
**Key**

- Weekday AM Peak hour
- Weekday PM Peak hour



**Key**

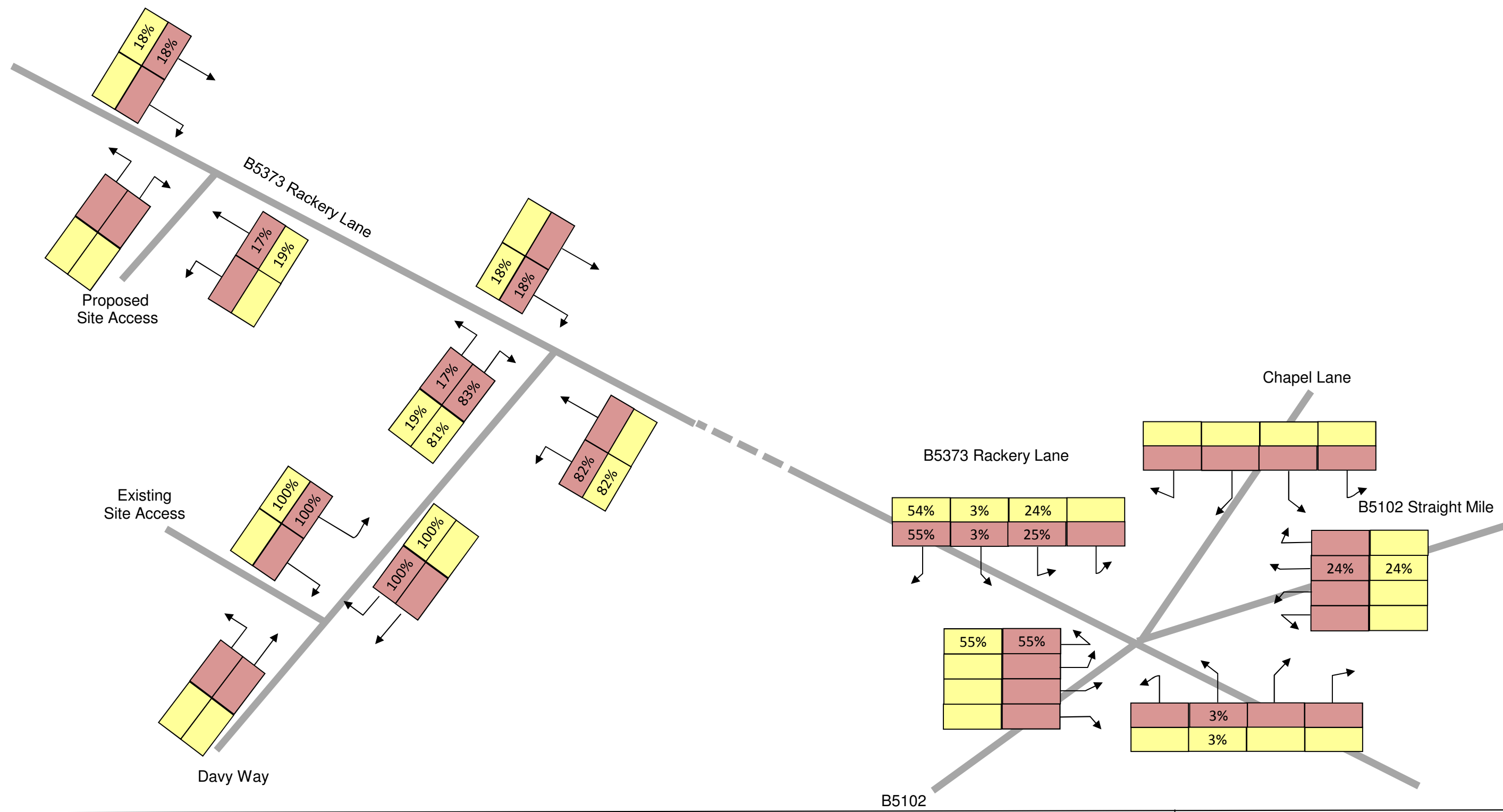
- Weekday AM Peak hour
- Weekday PM Peak hour





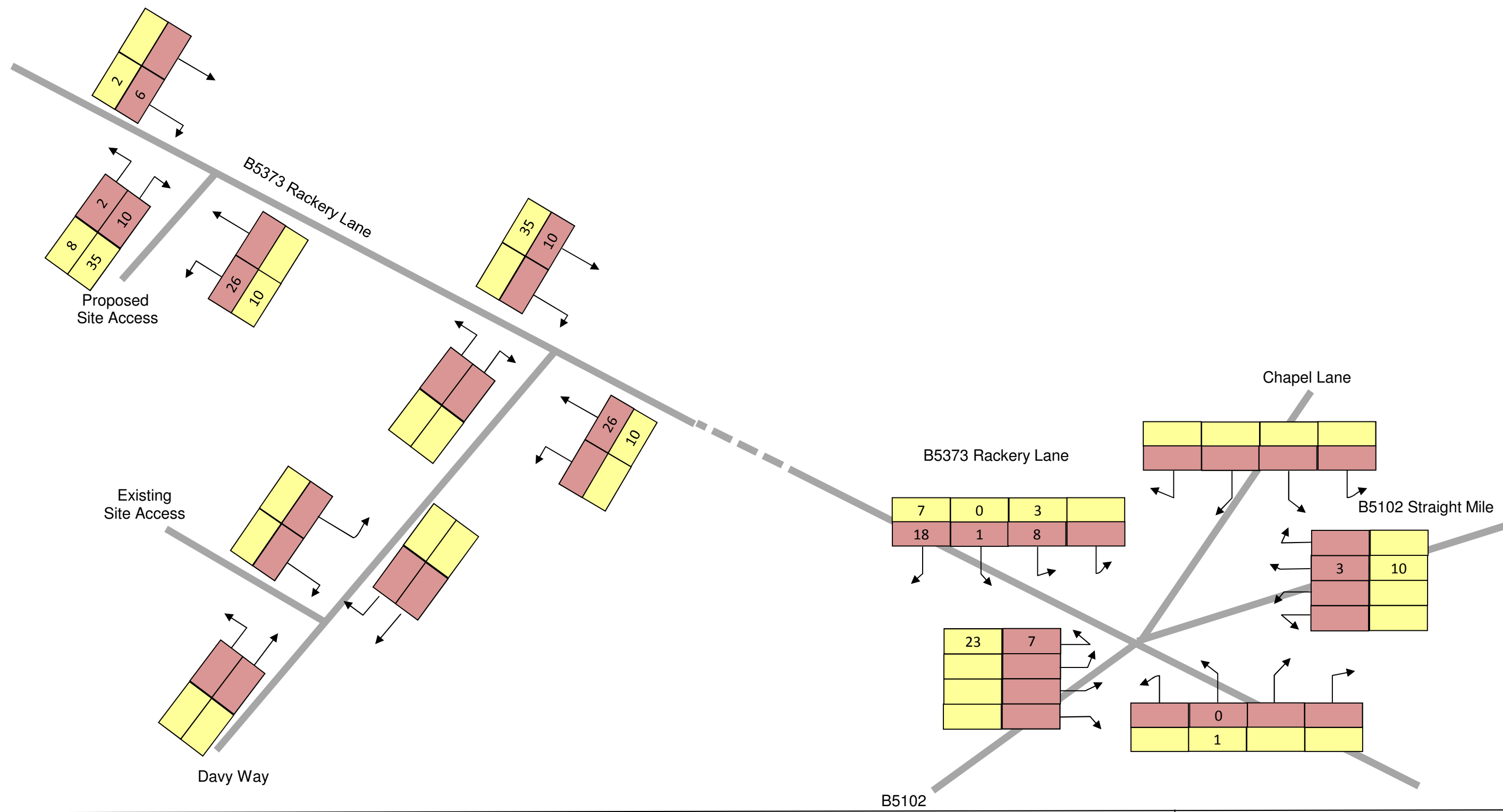
**Key**

- Weekday AM Peak hour
- Weekday PM Peak hour



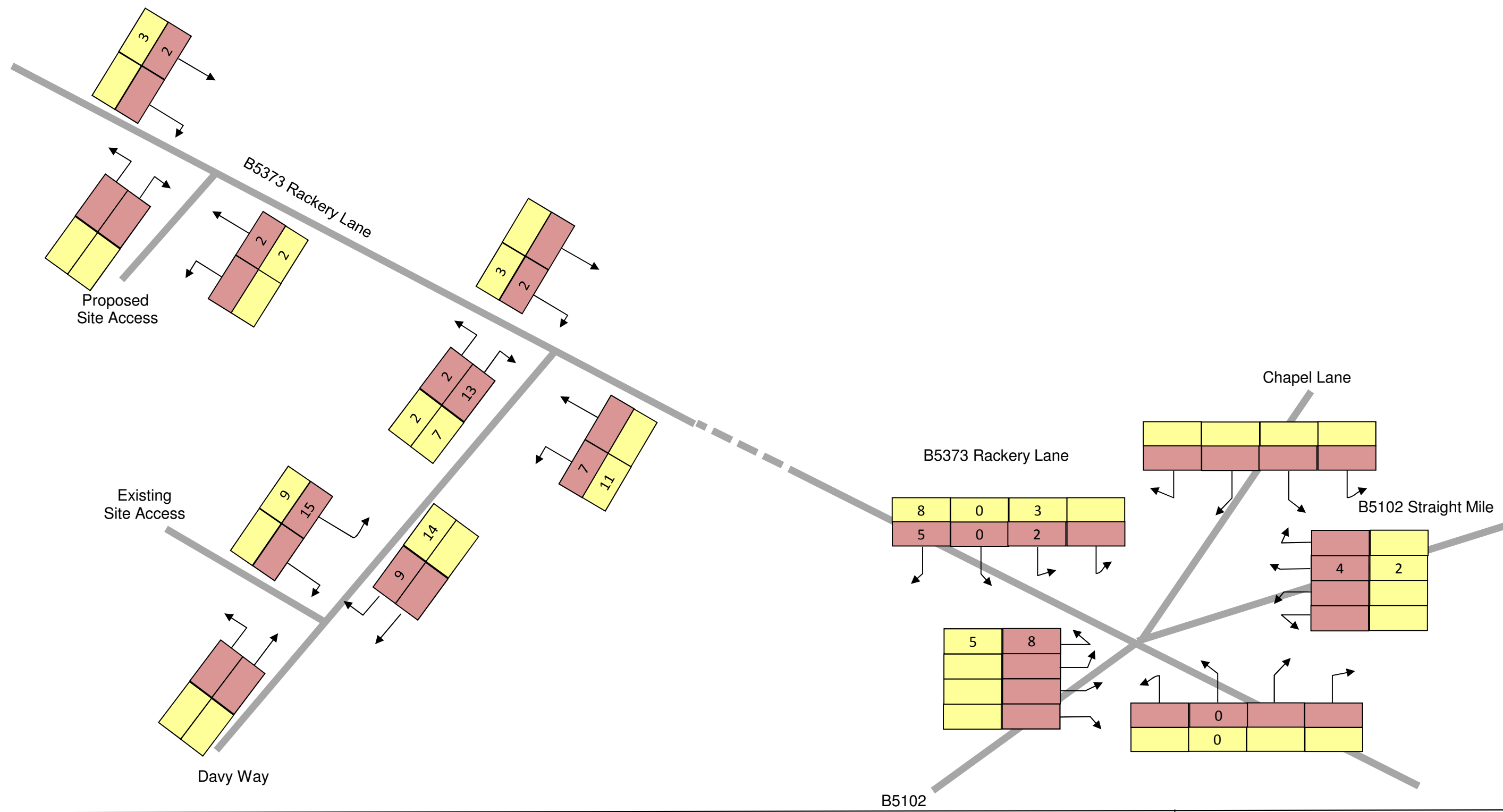
**Key**

- Weekday AM Peak hour
- Weekday PM Peak hour



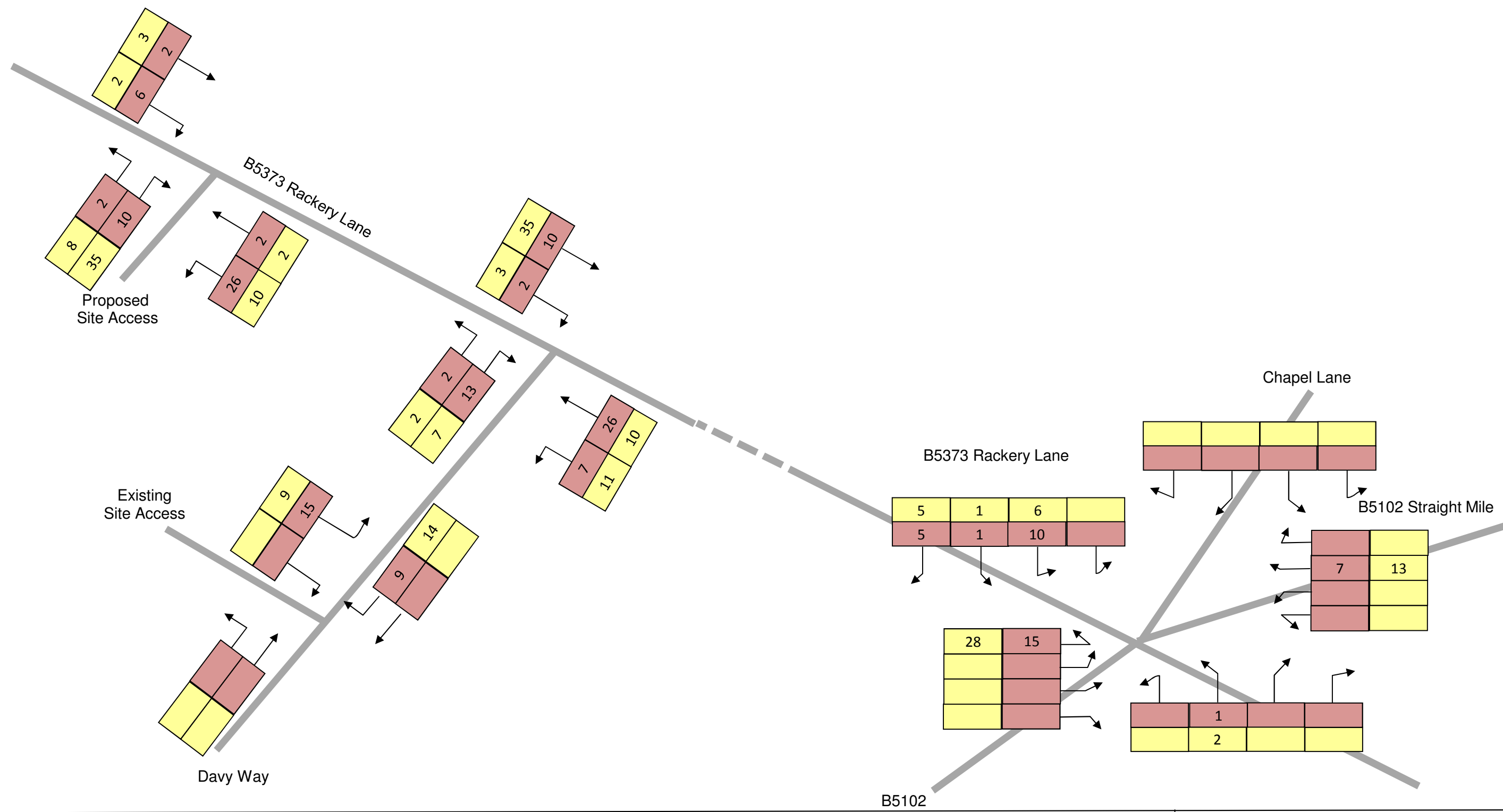
**Key**

- Weekday AM Peak hour
- Weekday PM Peak hour



**Key**

- Weekday AM Peak hour
- Weekday PM Peak hour



**Key**

- Weekday AM Peak hour
- Weekday PM Peak hour

