London Borough of Croydon

Kenley Intensification Zone
Transport Study

Final Report

February 2020

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Croydon Council

KENLEY INTENSIFICATION ZONE

Transport Study

CONFIDENTIAL

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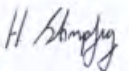
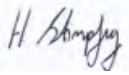
Signature				
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CONTENTS

TABLES

APPENDICES

PLANS

EXECUTIVE SUMMARY

Introduction

Kenley was designated as an 'area of focused intensification' in the Croydon Local Plan of 2018, with the ward of Kenley (along with the neighbouring Old Coulsdon ward) identified to have the potential to accommodate 830 new dwellings by 2037.

Kenley is served by a railway station with good connections into Croydon and Central London, making the area around the station an understandable location for increased housing density. However, due to existing constraints in the area growth in the future will have its challenges.

Kenley is very suburban, is surrounded by green space and is of varying topography. The area is characterised by predominantly detached homes on relatively large plots of land. However, some areas of Kenley are characterised by narrow local roads with limited provision for pedestrians, areas of severance caused by the railway line and busy A22, poor crossing provision, and areas prone to flooding.

Transport Study

WSP were commissioned by Croydon Council to undertake a Transport Study to inform an assessment of where additional transport infrastructure or improvements are required to sustainably accommodate the anticipated growth in the area.

The study involved a review of policy and strategy relevant to the area, and a summary of committed schemes, such as proposed traffic management measures along the A22 Godstone Road. It also included an extensive review of the existing conditions within the area, including the contextualisation of the local area, a summary of public transport services, a review of the highway, cycle and pedestrian network, collision analysis, and a review of parking within the study area.

This desktop review was supplemented by traffic, parking and pedestrian surveys undertaken in May and June 2019.

Survey data and the findings of the desktop review were then analysed to record existing and identify new issues within Kenley. This included a healthy streets assessment and road safety review, both of which were informed through site visits to the area.

A high-level zoning exercise was undertaken to hypothesize where future dwellings may be situated, for the purposes of undertaking a trip generation assessment, to estimate where new trips would be generated on the highway network within Kenley and which roads or junctions this would affect. Two housing intensification scenarios were assessed, an upper (2,758 dwellings) and lower (1,806 dwellings) scenario.

Separately, WSP were commissioned to undertake a Sensitivity Assessment aimed at providing a more in-depth assessment of how existing issues on Hayes Lane, Kenley Lane and Welcomes Road may be exacerbated by the increased growth in housing, with different development scenarios assessed. This is attached to this Transport Study in Appendix I.

Issues

Issues identified through the methodology outlined above were brought together with issues known from the outset of the project and appraised. Roads and junctions within the study area

were assessed at a high level based on how they perform on several factors, such as their pedestrian environment, crossing provision, access to public transport, safety, and public realm.

Key issues identified include narrow roads with no footway provision, narrow footways in areas with high pedestrian flow, a lack of crossing provision at clear pedestrian desire lines, wide radii at junctions leading to inappropriate speeds, parking issues, and a lack of accessibility to public transport services.

Solutions

An array of solutions has been proposed aimed at addressing existing issues within the study area and at issues likely to be exacerbated by increased vehicle and pedestrian trips associated with the proposed growth of housing. These are summarised on a plan within the Transport Study.

Key solutions, which are at this stage only conceptual in nature, include introducing junction control at the Godstone Road/Hayes Lane junction, widening the narrow footway over the humpback rail bridge, designating Hayes Lane and Kenley Lane as 'Quiet Lanes' with pedestrian priority space, improvements to the Station Road/Hayes Lane junction, and re-routing the existing Route 434 bus service to increase the catchment to enable use by more residents in Kenley.

A multi-criteria assessment was used to assess the impact of each proposal, as well as the high-level costs, risks and timescales for each. Doing so enabled a priority level to be applied to each solution.

Conclusions

This Transport Study aimed to report on the existing transport-related issues in Kenley to contextualise where improvements/infrastructure would be required as part of the of the planned intensification and growth of housing in the area.

As reported in the study, there are existing issues within Kenley, which particularly affect pedestrians or reduce the potential for an increase in walking trips. Solutions proposed in the study are required to address these existing issues, which are significant for certain areas of Kenley. Additional trips will exacerbate the issues, however the extent of the impact is heavily dependent on the specific areas in which the development is located. The area surrounding the station is more suitable for sustainable travel compared to certain streets further away where there is a lack of pedestrian facilities. Contributions from new development can now be pooled to support growth and mitigate impacts of the development.

The Sensitivity Assessment concluded that the increase in housing is likely to cause significant issues, especially on Hayes Lane, due to the increase of pedestrian-vehicle interactions brought about by additional traffic and pedestrians using Hayes Lane, which has no consistent footway along its length. This increase in interactions is likely to increase the risk of collisions, a risk present with current levels of traffic and pedestrians.

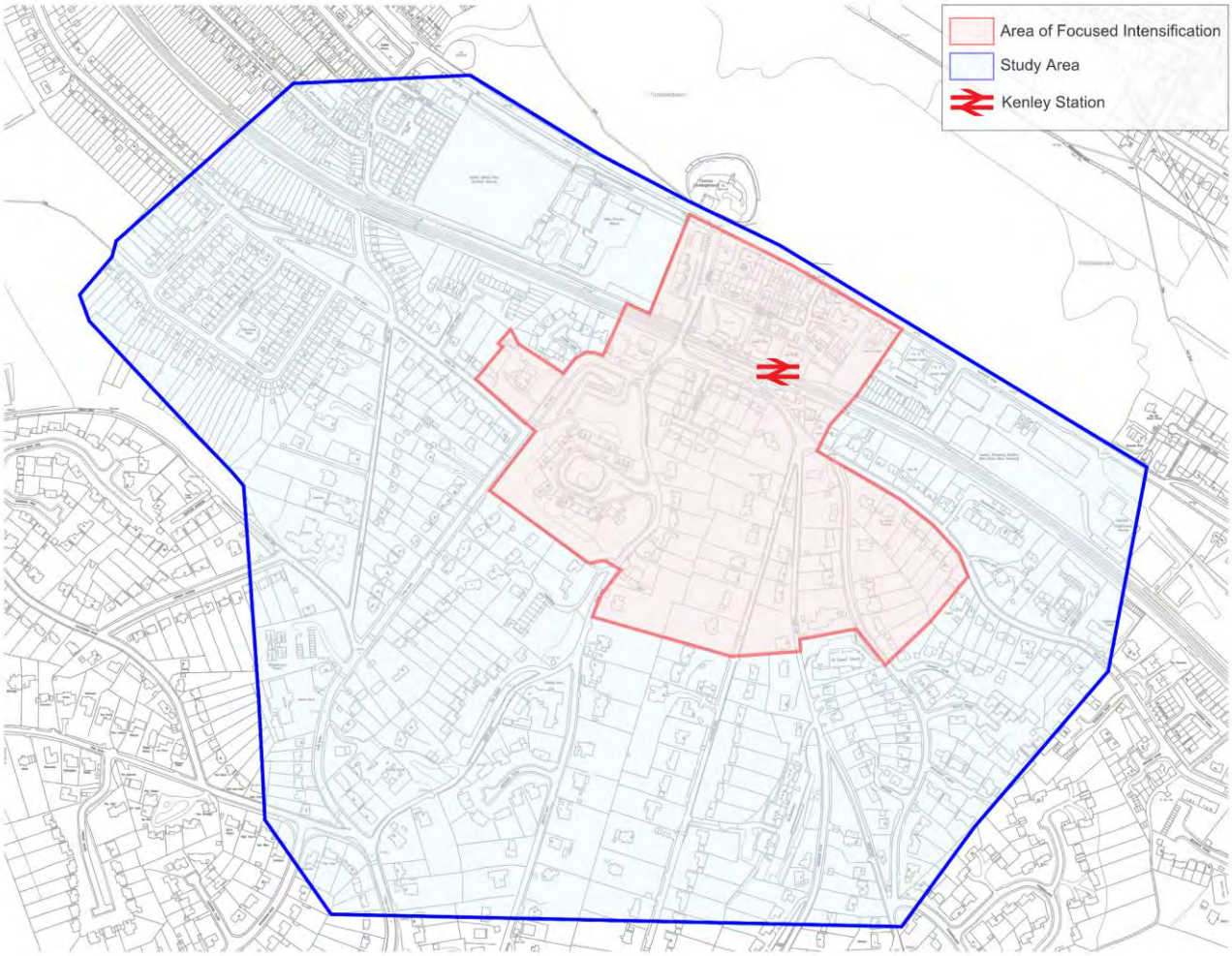
With the above in mind, this Transport Study recommends that the highest priority measures are progressed to feasibility design to support the growth in the area that is already occurring.

1 INTRODUCTION

WSP have been commissioned by Croydon Council to undertake a study to inform what additional transport infrastructure or improvements may be required to sustainably accommodate the anticipated growth taking place in the 'Kenley Area of Focused Intensification' or 'Focused Intensification Zone', or FIZ, which it will hereafter be referred to as.

The Kenley FIZ is shown in Figure 1-1 in relation to Kenley Station. Also shown is the wider study area, which has been determined by the area for which parking beat survey data was collected.

Figure 1-1 – Kenley Context Plan and Study Area



1.1 BACKGROUND

As identified in the Local Plan, Croydon is set to experience significant growth over the next 20 years. Some of this will be targeted within 'Areas of Focused Intensification', largely because these areas are served by rail stations that have good connections into Croydon and the centre of London. Kenley is one of these four Areas of Focused Intensification.

Kenley is relatively constrained in terms of its permeability and connectivity to surrounding areas. This is largely due to its proximity to the rail line and busy A22 strategic road to the north and relatively steep hillside to the south. Many of the local roads are narrow, have sections that experience poor visibility, and some are under private ownership. These are just some of the local

factors and constraints that create severance and lead to generally poor provision for pedestrians and cyclists.

With the number of dwellings across the ward of Kenley and the neighbouring Old Coulsdon ward set to increase by 830[1] dwellings by 2037, the current issues described above are likely to be exacerbated. Residents have raised a number of concerns regarding existing issues and the plans for development.

Some of the development will be located next to the rail station where access by foot to shops and services is more direct. However, outside of this area certain streets are less well connected to the station, including Kenley Lane (south of Valley Road), Welcomes Road and Hayes Lane (south of Park Road). The provision of new services and amenities alongside new developments will reduce the need to travel by car to other district centres further afield.

The nature and range of the current issues is relatively well understood by the Council and local residents. However, it has not been quantified and as such the impact of future development is not yet known. Therefore, this study sets out to first provide a baseline level of evidence and information with which to assess the current issues and future issues. This has informed the development of mitigating measures and complementary proposals to improve road safety, pedestrian/cycle amenity, public transport provision, parking management and to improve the quality of the public realm.

The issues, proposals and evidence base have formed the core components of a bid to the Mayor's Good Growth Fund. Whilst local residents have concerns about the additional problems the growth plans will create, the Good Growth Fund provides an opportunity to address the current issues which a lack of funding may have otherwise precluded. The funding may also enable the consideration of more substantial area-wide improvements to build in resilience and introduce a more coherence package of measures.

1.2 OBJECTIVES

The main objective of the study is to inform an assessment of what additional infrastructure or improvements are required to sustainably accommodate the existing and anticipated growth taking place through suburban intensification.

1.3 STRUCTURE OF THIS REPORT

This report is structured as follows:

- Chapter 2: Policy, Strategy and Committed Schemes
- Chapter 3: Baseline Conditions
- Chapter 4: Surveys
- Chapter 5: Data Analysis and Audits
- Chapter 6: Anticipated Growth and Trip Generation
- Chapter 7: Issues Identification and Appraisal
- Chapter 8: Identified Improvements and Appraisal
- Chapter 9: Recommendations and Next Steps

[1] 830 dwelling identified in the Local Plan 2018. However, trip generation was based on higher levels of development

2 POLICY, STRATEGY AND COMMITTED SCHEMES

2.1 CROYDON LOCAL PLAN

Croydon is a growing borough. It is the second most populous borough in London and aims to be London's most enterprising borough. Planning is critical to ensuring that Croydon meets the needs of its residents, business community and visitors. The Croydon Local Plan sets out the strategy, sites and planning policies necessary to meet these needs.

The Croydon Local Plan 2018 is a key document in Croydon's Local Plan. It sets out the spatial vision and plan for the future of the borough and how it will be delivered.

The Strategic policies set out within Chapter 10 'Transport and Communication' are as follows:

- There is a need to encourage more active and sustainable transport to reduce road congestion, which contributes to air pollution and is a cause of climate change, tackle rising obesity and associated conditions and improve both quality of life and quality of place.
- Less people regularly cycle in Croydon than in the rest of London.

Policy SP8: Transport and Communication:

- SP8.6: The Council and its partners will improve conditions for walking and enhance the pedestrian experience by:

    a) Ensuring "access for all" principles are adhered to;
    b) Increasing permeability, connectivity and legibility of redeveloped sites;
    c) Improving crossings, in particular within Croydon Opportunity Area, District Centres and around schools;
    d) Enhancing footpaths, strategic walking routes and links through green spaces to ensure a coherent pedestrian network;
    e) Creating pedestrian streets from underused side streets and delivery lanes off main streets in Croydon Opportunity Area and the District Centres;
    f) Improving way finding in the Croydon Opportunity Area, District Centres and on cycle routes (including the implementation of the 'Legible London' scheme);
    g) De-cluttering the streetscape and avoiding unnecessary footway interruptions in new schemes and existing public realm;
    h) Enabling the widening of footways where feasible on overcrowded routes; and
    i) Promoting the identification and implementation of accessible, safe, visible and convenient direct cycle and walking routes to Croydon Opportunity Area, the borough's District Centres, transport interchanges, schools and community facilities through detailed policies within the Croydon Local Plan's Detailed Policies and Proposals.

2.2 CROYDON CYCLING STRATEGY

The Croydon Cycling Strategy 2018-2033 indicates how Croydon has fewer regular cyclists than many other parts of London and relatively low cycle ownership compared with many other London Boroughs, with only 1% of journeys starting in Croydon made by bike.

The strategy highlights that Croydon has the greatest potential for cycling and walking because of the number of short journeys made by cars that could easily be walked or cycled given the right conditions.

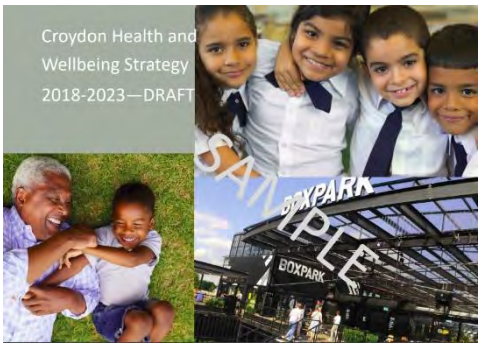
There are four main barriers that are highlighted in the strategy, which are as follows:

- Achieving an inclusive cycling culture;
- Safety;
- Availability; and
- Topography

The strategy sets out how they plan to create those conditions to increase the number of trips undertaken by cycling through several plans which include:

- Safely connect people and places by adapting the built environment;
- 20mph speed limit on all but the busiest roads;
- Improved safety around larger vehicles; and
- Cycle skills training

2.3 CROYDON HEALTH AND WELLBEING STRATEGY



This strategy sets out the vision and the long-term improvements in people's health and wellbeing that Croydon wants to achieve. It also sets out the priorities for action and indicators that will help to measure progress.

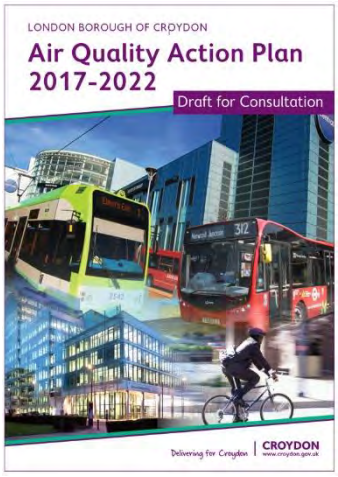
Reducing childhood obesity is important for Croydon due to its long-term health impact and the numbers of children affected. Croydon is significantly worse than the England average for the percentage of obese children.

Evidence reviewed by the government sponsored Foresight project indicates that a whole system approach is critical – from production and promotion of healthy diets to redesigning the built environment to promote walking, together with wider cultural changes to shift values around food and physical activity.

2.4 CROYDON DRAFT AIR QUALITY ACTION PLAN

Croydon is committed to improving air quality within its borough and have produced a plan that builds on existing successful actions and develops new proposed actions to improve air quality. It outlines the actions to take to improve air quality in Croydon between 2017-2022.

Some of the developed actions in the draft action plan are summarised below:



Localised Solutions: (Actions 33 – 37)

- Install greener infrastructure, such as trees and planters along pavements to encourage more people to walk and cycle
- To install green screens at schools along busy main road to reduce exposure

Cleaner Transport: (Actions 39 – 50)

- Discourage unnecessary idling through anti-idling campaigns at hot-spot areas
- Investigate implementation of further 20 mph zones in built up residential areas
- Introduction of more electric charging points and rapid chargers
- Provision of infrastructure to support walking and cycling

2.5 SUBURBAN DESIGN GUIDE SUPPLEMENTARY PLANNING DOCUMENT

The design guide provides guidance for suburban residential developments and extensions and alterations to existing homes across the borough. The guidance is divided into three sections, one of which covers Areas of Focussed Intensification.

The guide identifies that developments in Kenley should seek to maintain the leafy character of the area with increased focus around a regenerated village centre. The shopping parade, train station, church, nursery, GP surgery and memorial hall should be supported and improved as necessary to continue to provide important community services.

Section 3.3 relates to the Kenley FIZ. Paragraph 3.4.4 refers to issues and opportunities within Kenley:

"The area is reasonably well accessed by public transport, including buses, and is walkable from Kenley train station. Public transport in the area is expected to improve because of the South Croydon Bus Review and improvements to the Brighton Main Line in the East Croydon area. There are however a number of road safety issues that result from local narrow lanes which lack pavements, along with gradients, blind corners and the humpback bridge over the railway. It is noted that the A22 is subject to a current TfL improvement proposal that seeks to address issues resulting from traffic, lack of pedestrian crossing, car parking aside the road and the junction with Hayes Lane. It is important that development seeks to reduce car reliance and there is the potential to introduce schemes, such as a Home Zone or Quiet Lane, that prioritise pedestrians. The safety of the lanes may also be improved by the provision of lighting"

With reference to the typology development potential and specifically 'areas with suburban shopping & linear infrastructure', the document identifies that:

> *"The public realm may benefit from both soft and hard landscaping improvements, along with rejuvenated shopfronts and the provision of outdoor seating associated with cafes and restaurants."*

2.6 KENLEY COMMUNITY PLAN FOR GOOD GROWTH

The Kenley Community Plan for Good Growth will be an informal working document designed to ensure that the expected growth in Kenley prioritises the needs and considers the concerns of the local community. The plan will help identify priorities for and seek opportunities for funding so that housing targets can be met without exacerbating existing issues and not at the detriment of the local community.

The Community Plan is being developed through a variety of different forms of engagement, such as community engagement events and Commonplace online surveys. Although not a formally adopted planning document, the plan will feed into the Infrastructure Delivery Plan which is reviewed annually as well as the review of the Croydon Local Plan, which is currently underway.

Community engagement events are being held between May and September 2019. The Plan was made available in October 2019. Some useful feedback on issues and opportunities has been provided from the initial events that have been held. This has fed into our evaluation of issues and has informed the development of proposals.

2.7 COMMITTED AND PROPOSED TRANSPORT SCHEMES

A22 Godstone Road Traffic Management Measures

In 2017, TfL consulted on proposed changes to the road layout and amendments to red line controls along the A22 Godstone Road from Foxley Hill Road near Purley to Old Barn Lane, south east of Kenley.

The proposals on which TfL consulted with the public with included:

- **Changes to red route controls** – including the introduction of new sections of red line to enhance safety, including at the junction of Godstone Road with Waterbourne Way, the conversion of some single red lines into double red lines, and the introduction of new double red lines within current red route controls;
- **Changes to bus stops** – including the relocation of two bus stops and changes in kerb heights to make it easier to get on and off the bus, and refreshing of bus stop markings;
- **Upgrades to four zebra crossings** – including wider crossings to make these a more prominent feature of the road and create a safer place to cross; and
- **Changes to the road layout** – including new paving and some resurfacing, a kerb build out at Station Road to increase visibility when exiting the junction, and the provision of a new red route parking bay near to Old Barn Lane.
- **Pavement resurfacing –** new paving to be laid on the southern footway of Godstone Road between Hayes Lane and the car park entrance and between the entrance and Station Road.

Sections 7, 8 and 9 of the proposals for Godstone Road, which cover the extents of the scheme closest to the FIZ and therefore most relevant to this study, are shown on TfL plans included as Appendix A.

Following the consultation, several amendments were proposed including:

- Extending the parking bay outside Kenley Memorial Hall to create space for five more vehicles;
- Bringing forward the plans to reconstruct the junction between Station Road and Godstone Road to build out the eastern footway to increase visibility for vehicles turning out of Station Road; and

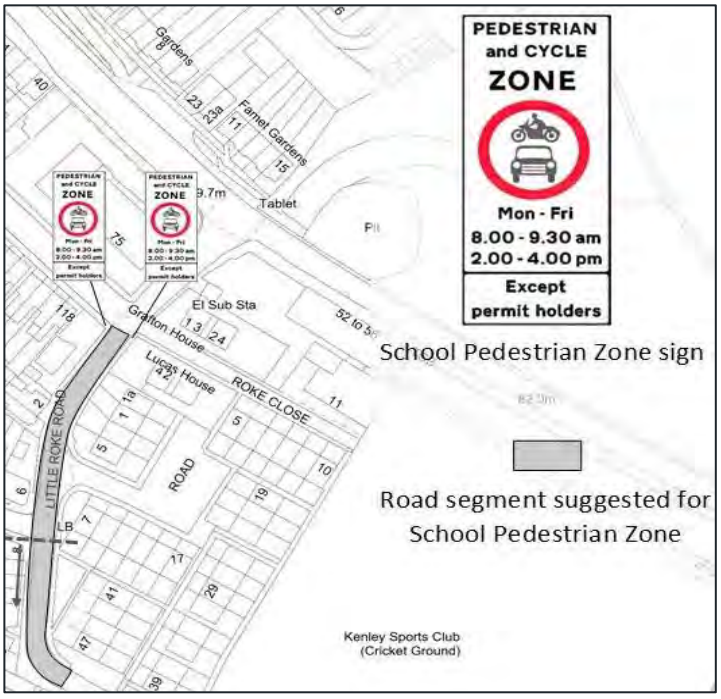
- Introducing single red lines instead of double red lines on Godstone Road between Waterbourne Way and the private access to Kenley Treatment Works to allow parking between 7pm and 7am Monday to Saturday and all-day Sunday to benefit local residents.

Following further lobbying, in mid-2019 TfL agreed to reconsider the provision of a new signalised junction/crossing at the junction of Godstone Road and Hayes Lane as part of a new project. The original scheme is to continue but changes proposed for the immediate area around the junction are subject to further consideration.

School Streets for Harris Primary Academy Kenley

LB Croydon is proposing to introduce new School Streets across the borough in response to requests for something to be done about high levels of traffic, safety issues and air pollution outside school entrances. Croydon already has ten Active School Streets which cover 16 schools.

A School Street scheme on Little Roke Road at Harris Primary Academy Kenley commenced in October 2019.



2.8 STAKEHOLDER AND LOCAL COMMUNITY FEEDBACK

A local residents association provided a response to the SPD consultation and some of the comments are highlighted below:

- Representations noted that **car parking design** within AFIs will need to ensure that the movement of pedestrians, cycles, public transport and emergency services is not impeded, and that developments should also promote alternatives to car use, and promote walking, cycling and public transport use.
- It is important to understand the potential **benefits** and opportunities that development can bring to **improve function** and **character** of areas for people in reality. This could include better facilities for walking, cycling and public transport access, safer roads, public realm improvements, better services, more street trees and better environment
- Representations raised concerns relating to **road safety** and **congestion** within the Kenley AFI. The following factors contribute to this:

    a) **Narrow roads**, some of which containing blind bends and lack pavements.
    b) Hump back **bridge** over the railway line provides limited visibility. It has narrow pavements and is the only crossing point for disabled access to cross to other platform at station

c) Limited **on street parking** available – being in high demand in certain areas.
d) Hazardous **junction** with **A22**.

- Lack of **pedestrian crossing** over the A22 to bus stop
- Representations noted limited **street lighting** in the Kenley AFI which impacts safe walking at night
- Representations raised concern that street **parking impact assessments** fail to recognise additional stress at peak times as a result of school runs and commuter drop-offs/pick-ups. They also noted that **commuters** are sometimes willing to **walk considerable distance** to **access free** on-street **parking**.
- **Minimal parking** in Kenley will **not work** due to the steep and narrow roads, meaning people will park on nearby roads causing further danger and access problems for residents
- More houses/flats would need a **huge number** of **parking spaces**, and there is nowhere to leave them on the already crowded roads.
- There needs to be a **proper crossing** on the Godstone Road for school children to reach Riddlesdown secondary school or for people to reach the bus stop. Better crossing facility is required for older and disabled people to be able to cross safely.
- There needs to be an **increased train service** on the Kenley line to cater for any increase in population and an improved bus service

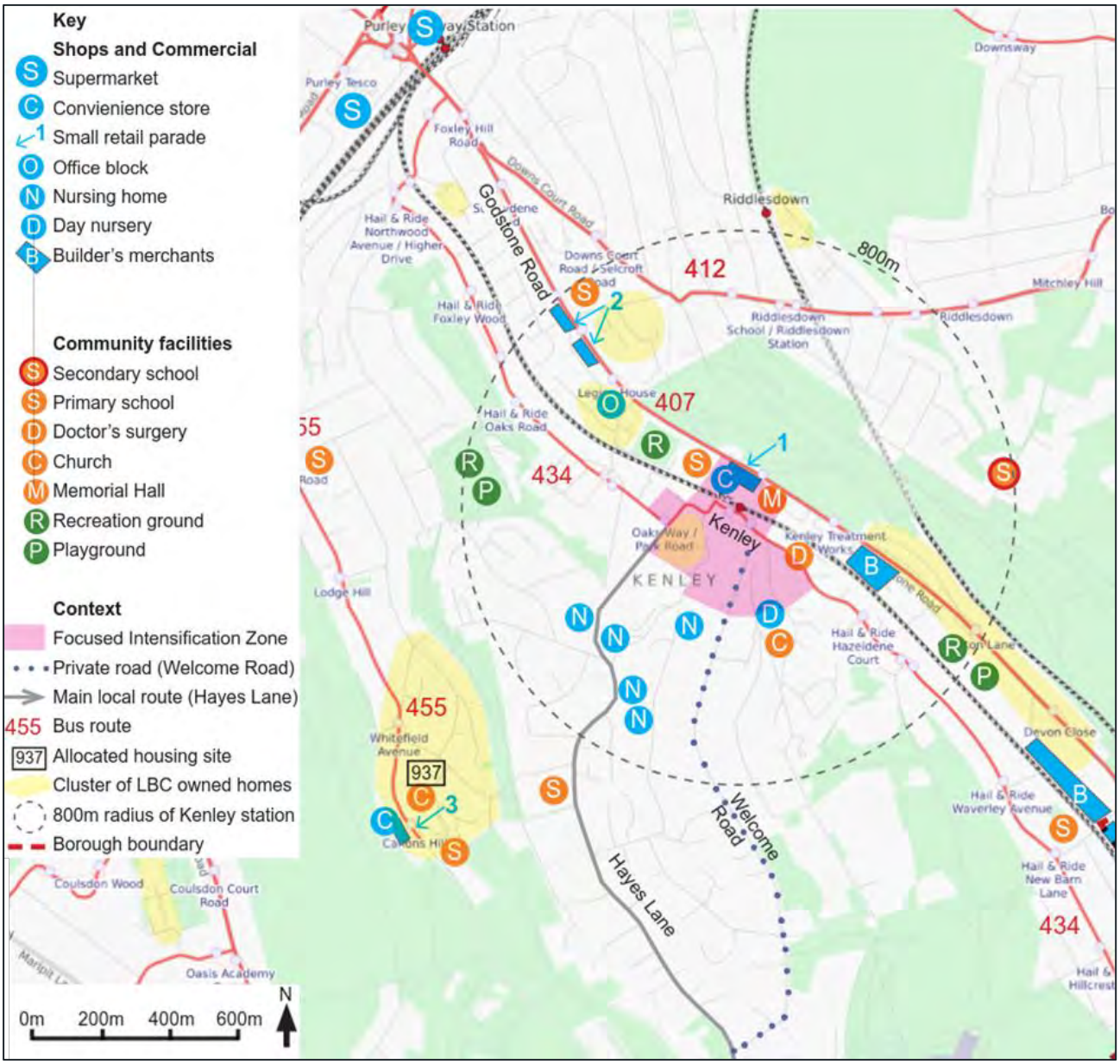
3 BASELINE CONDITIONS

This chapter of the report provides a summary of the existing situation within Kenley and has been compiled using a combination of desktop study and site observations.

3.1 WIDER AREA CONTEXT

The figure below shows the context of the wider area around Kenley, including the extent of the FIZ, key roads in the area and the 800m (10-minute walk) catchment area around Kenley Station.

Figure 3-1 - Kenley Wider Areas Context

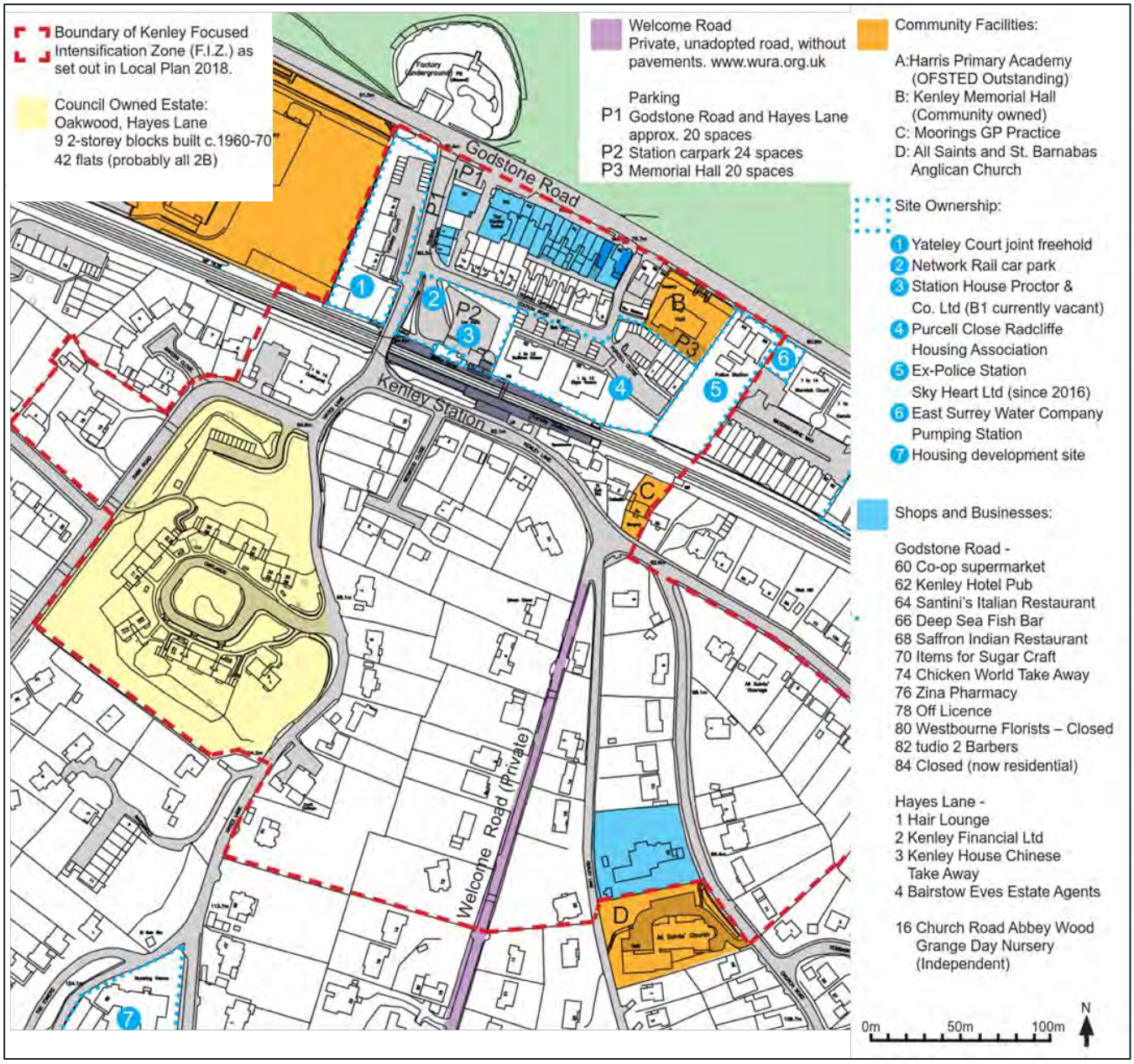


3.2 LOCAL AREA CONTEXT

Figure 3.2 shows the local context within the FIZ area. The area contains a limited number of shops, business and community facilities. Of note within the local area are:

- Harris Academy – primary school with 375 pupils
- Co-op supermarket at the junction with Godstone Road and Hayes Lane
- Three public car parks, with a total of 64 spaces

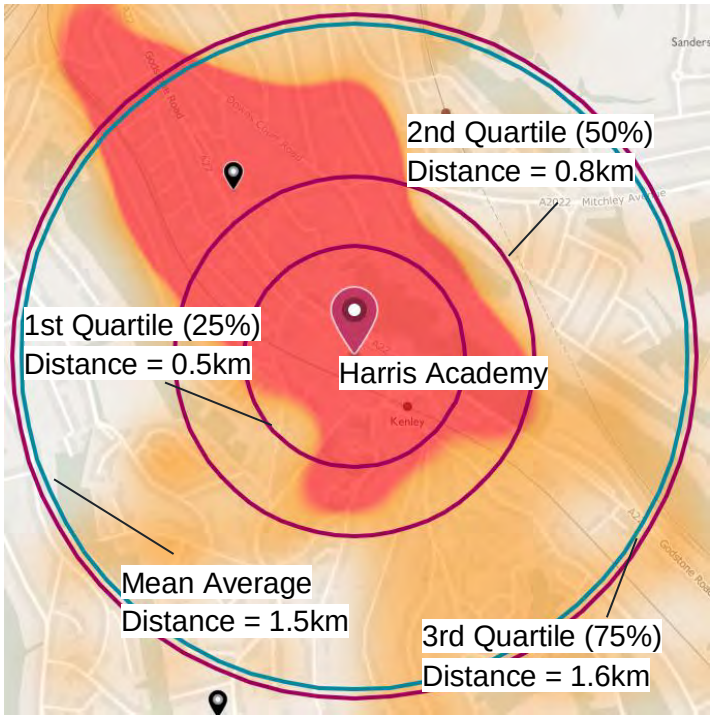
Figure 3-2 - Kenley Local Area Context



3.3 SCHOOLS

Figure 3-3 is a heatmap identifying the home locations of students of Harris Academy. The red areas show the highest concentration of students, whilst orange indicates that fewer students live there. Purple rings are the Quartiles which show the averages distance travelled to school. The blue ring is the Mean Average.

Figure 3-3 - Catchment and average distance travelled to Harris Academy



Heatmaps for other schools within Kenley ward area are included in Appendix H.

3.4 PUBLIC TRANSPORT

Rail

The FIZ benefits from proximity to Kenley Rail Station with direct trains to Central London. The station and all the trains serving it are operated by Southern Rail. The station is in Zone 6 of the London fare zones. Kenley has two platforms with trains operating between Central London and Caterham.

Kenley Station has a peak service frequency of 8 trains per hour in both directions. The fastest train routes provide access to London Bridge in as little as 36 minutes and Caterham in ten minutes. Faster trains to London Bridge are approximately every half hour and stop at Purley, South and East Croydon.

There are also direct trains to and from London Victoria in the morning and afternoon which take approximately 41 minutes from Kenley. In the morning, there are direct trains to either London Bridge or London Victoria every 10 to 20 minutes, with between four and five services an hour.

Departures from Kenley directly to either London Bridge or London Victoria are summarised in Table 3-1 which shows typical departures from Kenley on a weekday morning between 6.30 and 8.30am.

Table 3-1 – Kenley to Central London Morning Departures (Monday – Friday)

Departure Time	Destination	Arrival Time	Duration
06:28	London Bridge	07:04	36
06:38	London Victoria	07:19	41
06:58	London Bridge	07:34	36
07:08	London Victoria	07:49	41
07:28	London Bridge	08:04	36
07:38	London Victoria	08:19	41
07:58	London Bridge	08:34	36
08:08	London Victoria	08:49	41
08:28	London Bridge	09:04	36

Bus

There are two primary bus routes serving the Kenley FIZ, which are routes 407 and 434. These routes are shown in Figure 3-4.

Figure 3-4 – Bus Map (Source: National Rail)

Bus route 407 provides services at bus stops C and D on Godstone Road, which is a short walk from the station and school. It provides services between Sutton and Caterham Rail Station, stopping numerous times in Croydon including at West Croydon station.

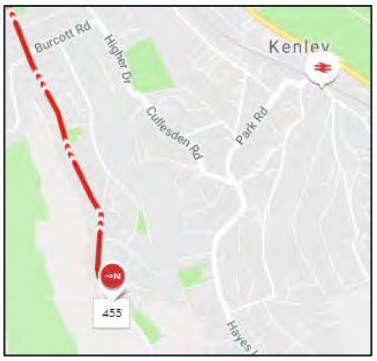
Bus route 434 operates as a Hail and Ride service in some sections between Whyteleafe South and Rickman Hill.

The frequency of the two bus services are highlighted in Table 3-2 below.

Table 3-2 - Frequency of Bus Services

Bus Stop	Route	Direction	AM Peak Frequency (buses/hr)	PM Peak Frequency (buses/hr)
The Kenley Hotel / Kenley Station (Stop N)	407	Sutton	5	5
The Kenley Hotel / Kenley Station (Stop C)	407	Caterham	5	5
Kenley Station (eastbound)	434	Whyteleafe South	2	2
Kenley Station (westbound)	434	Rickman Hill	2	2

A third route, the 455, is situated near Kenley but a considerable distance from the FIZ, with only those living to the very south of the study area within realistic walking distance of the stops serving the route, as the nearest stop to the FIZ is over a mile from the station. The 455 provides access to Wallington via Purley and Croydon. The nearest stop to the study area is Canons Hill, which is also the southern end of the service, with northbound buses beginning and southbound buses terminating here. Canons Hill is on Old Lodge Lane which runs adjacent to Hayes Lane.



3.5 HIGHWAY NETWORK

As shown in Figure 3-5, the highway network within the study area is characterised by a number of narrow roads, some of which are under private ownership. The busiest road is the A22 Godstone Road which is part of the Transport for London Road Network.

Figure 3-5 - Local Road Network and Congestion and Speed Limits (inset)

The residential areas of Kenley are accessed from the A22 via a junction with Hayes Lane, which is a priority junction. This has a right turn bay on the A22 with capacity for only one vehicle to queue to turn right. Hayes Lane continues throughout much of Kenley; the northern section of Hayes Lane is single carriageway with centre line markings and has a dedicated footway, whilst the southern section of Hayes Lane has very narrow lanes which are more rural in character.

The busiest north to south route through Kenley is Park Road, a relatively wide single carriageway road with footways and marked sections of on-street parking. The main east to west route is Kenley Lane and provides access to the station from south of the railway line.

Other north to south routes within the FIZ include Abbots Lane, Welcomes Road and Church Road, the latter two of which are under private ownership.

3.6 WALKING AND CYCLING

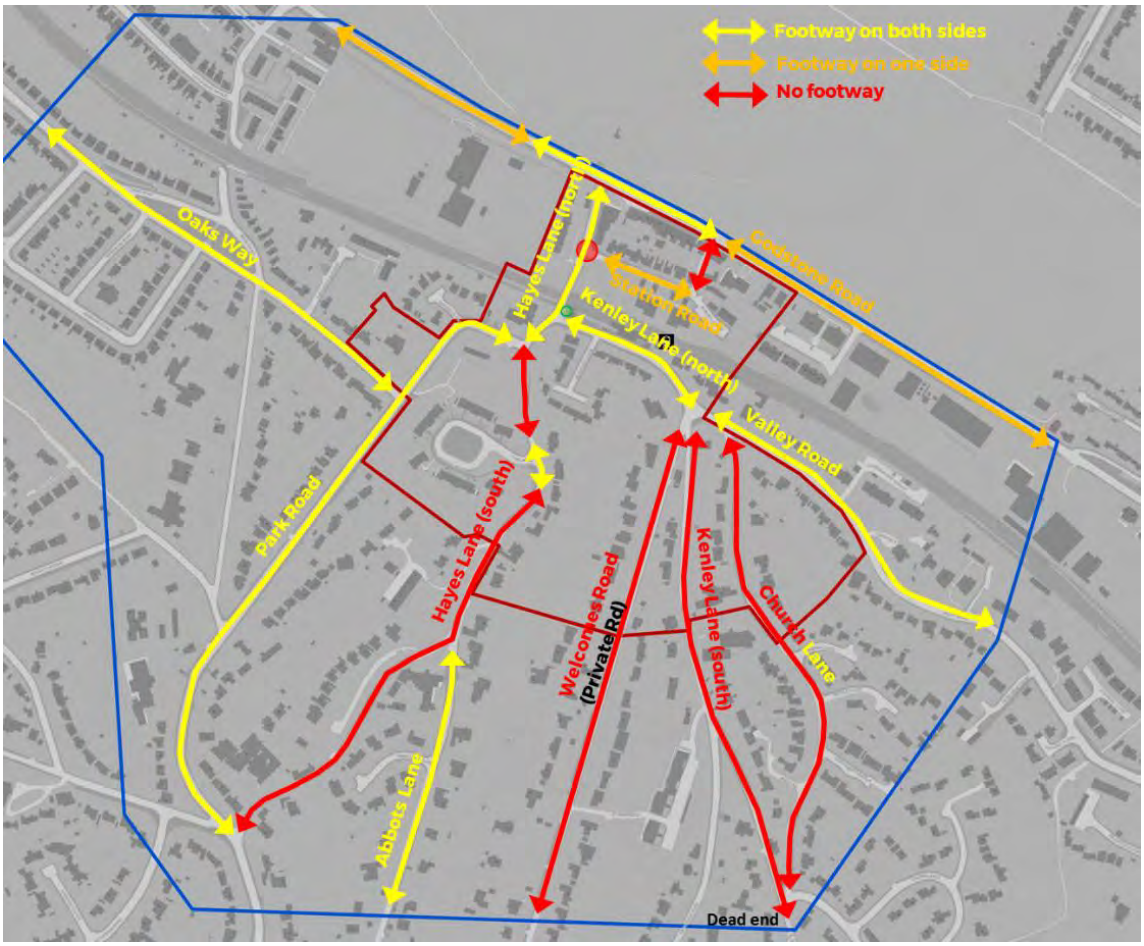
Walking

The provision of footways for pedestrians within the FIZ and wider study area varies significantly, with some roads having acceptable provision (such as Park Road) whereas others have very narrow footways or no footways at all (sections of Hayes Lane and Kenley Lane). Figure 3-6 shows the streets which have no footway or a footway on one side of the street.

South of the railway station the steep incline exacerbates the issues of poor/no footway provision on Kenley Lane and Hayes Lane. Hayes Lane, despite being rural in character, is relatively busy with almost 200 vehicles per hour travelling two-way in the AM peak period through its narrowest

sections. Given there is not enough space for two vehicles to pass each other, Hayes Lane feels uncomfortable for pedestrians. The sinuosity of the narrower roads within Kenley also create visibility issues for pedestrians.

Figure 3-6 – Roads without Footways or Reduced Footways



Crossing provision is in places also poor, creating severance throughout the FIZ. There are no zebra or signalised crossings in the FIZ with crossing provision mainly being uncontrolled dropped kerb crossings with central pedestrian refuge islands.

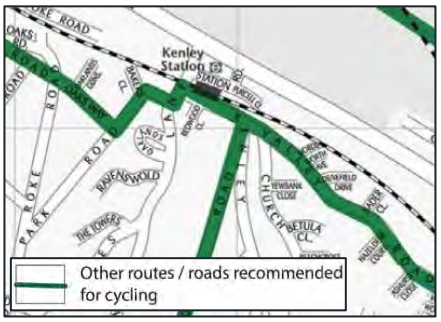
Given its topography, with the centre of Kenley located in a valley, the area is prone to localised flooding and suffers from poor drainage in places, also contributing to making walking (and cycling) an unattractive proposition.

Cycling

The only provision for cyclists within the FIZ is along the A22 Godstone Road, which has advisory cycle lanes along both sides as the A22 passes Kenley (although there is no advisory cycle lane past the junction between the A22 and Hayes Lane).

In their recent consultation, TfL proposed to retain the advisory cycle lane. In their Cycle Route Quality Criteria Technical Note TfL advise that

"*Where a cycle lane is proposed, designers are expected to incorporate light segregation features as a minimum. An advisory cycle lane would only be potentially appropriate where the tool suggests that conditions are expected to be suitable for people cycling to mix with motor traffic".*



The volume of motor traffic would need to be approximately half of the current flow for it to be acceptable for cyclists to mix with traffic (or to use and advisory cycle lane).

Cyclists within Kenley experience face much the same issues as pedestrians do, with narrow roads, hills, poor drainage and poor visibility.

As shown in the diagram opposite, there is one signed cycling route within Kenley. This connects to Purley in the north and Whyteleafe in the south.

3.7 COLLISION ANALYSIS

Collision data was provided by TfL for the Kenley area for the most recent five years for which data was available (01/09/2013 to 31/08/2018).

Analysis was undertaken to identify collisions and potential cluster locations using KeyAccident software. KeyAccident allows the identification of collision clusters, trends and common causation factors, helping to identify where there are road safety problems leading to collisions.

The study area experienced a total of 24 collisions over the five-year period. Of these, 20 were slight and 4 serious, with no fatal collisions. Five collisions involved pedestrians and three involved cyclists. This is broadly in line with the collision rates for Croydon as a whole.

It is important to note that post-November 2016 the way in which collisions were recorded by the Metropolitan Police was changed, and since that date no collision descriptions are available. This has reduced the extent to which the cause of collisions can be understood.

Figure 3-7 shows a plot of the collision locations. The study area for which collision analysis was undertaken is demarcated by the pink line. The study area includes the Hayes Primary School and other local key attractors.

Figure 3-7 – Collision Plot

Collision Clusters

A cluster has been defined as where five or more collisions have occurred within a 25-metre diameter. Under these parameters, one cluster has been identified within the study area, at the junction of Hayes Lane and Godstone Road, where six collisions occurred:

- All six collisions were slight in severity;
- Three out of six collisions involved vehicles turning right into Hayes Lane from Godstone Road colliding with westbound traffic on Godstone Road.
- Another collision involved a vehicle turning left out of Hayes Lane turning into the path of a westbound vehicle on Godstone Road;
- One collision was a shunt collision between two westbound vehicles as the lead vehicle slowed approaching the junction with Hayes Lane;

- The final collision, occurring in 2017, involved three vehicles (all travelling westbound) colliding on approach to the junction – no collision description is available for this collision so few details are known;
- Four out of six of the collisions within the cluster occurred in darkness.

The propensity of collisions involving vehicles turning into or out of Hayes Lane colliding with westbound vehicles on the A22 Godstone Road could be indicative of inappropriate speeds on Godstone Road, which is leading to drivers incorrectly judging the speed of oncoming westbound vehicles. The shunt collision could also suggest inappropriate speeds which led to the rear vehicle following too closely and being unable to stop in time.

Pedestrian and Cyclist Collisions

There were five collisions involving pedestrians within the study area, one of which was serious in severity with the other four slight. These collisions are summarised below:

- The serious collision occurred in 2017 just north of the humpback bridge over the railway line on Hayes Lane, near the junction with Station Road. A southbound car struck a pedestrian crossing over Hayes Lane in this location;
- There was one collision between a car and a pedestrian on Kenmore Road with the pedestrian hit while crossing the street;
- Towards the southern end of the study area, a pedestrian jogging in the carriageway on Hayes Lane near Welcomes Road was struck by a vehicle – there is no footway in this location;
- A pedestrian was struck on Station Road where there is discontinuous footway, but no details are known about the collision as it occurred in 2017;
- The final collision involving a pedestrian was on Godstone Road, east of the junction with Hayes Lane. Little details are known but the collision was between an eastbound vehicle and a pedestrian attempting to cross from north to south over Godstone Road.

Three collisions involved cyclists, two of which were on Park Road – one a loss of control involving no other vehicles, with the other at the junction between Hermitage Road and Kenley Lane.

Other Findings

At least two collisions can be partly attributed to the narrowness of the road on which the collision occurred. The collision in which a jogger was struck on Hayes Lane occurred on a narrow section with no footway near Welcomes Road, with narrow carriageway width reported as a contributory factor. Another occurred on Hayes Lane near the junction with Lovelock Close, where the narrowness of the road contributed to a collision between two cars as one tried to pass the other.

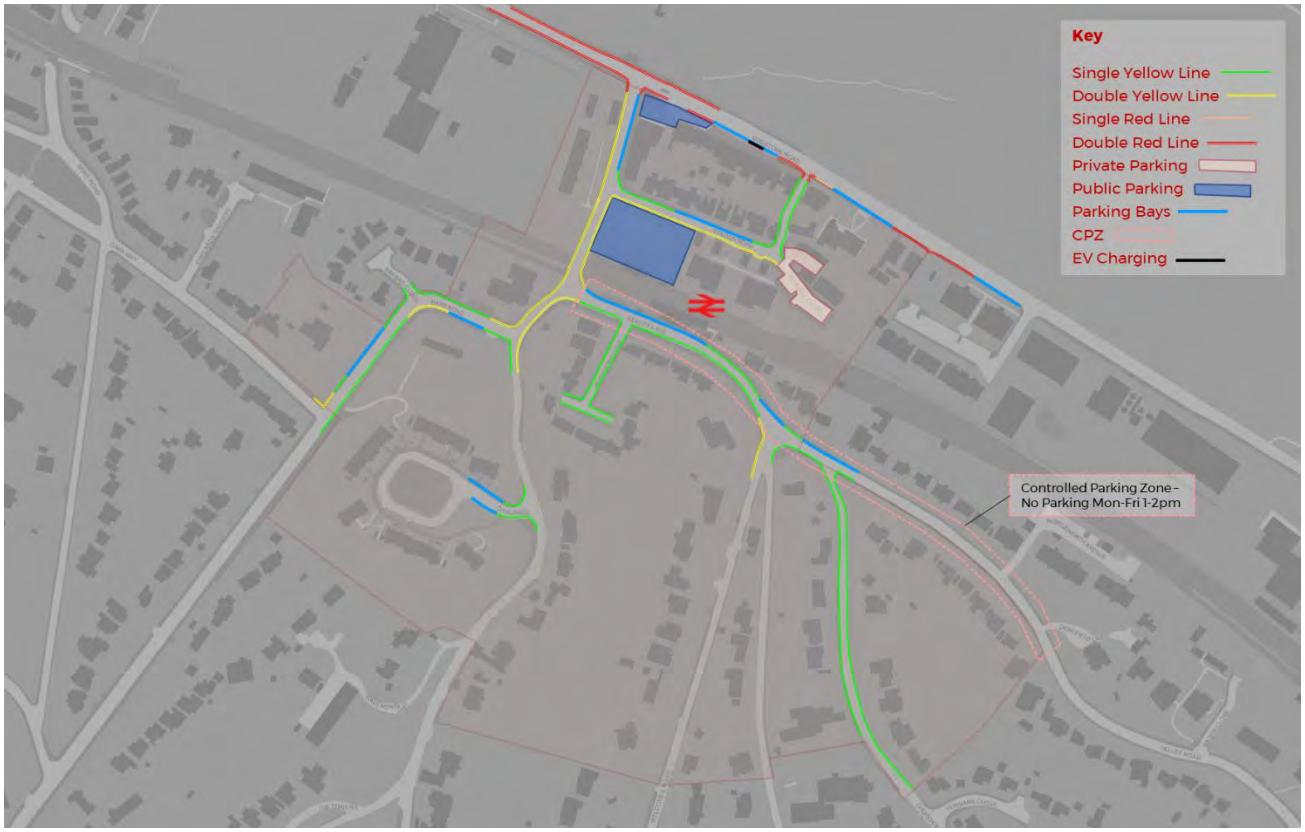
Whilst there were only two collisions recorded in which the narrowness of the road played a factor, it should be noted that near misses are not recorded so collision analysis does not account for the perception of road safety. Chapter 5 includes a Road Safety Review that captures assessed risks to road safety.

3.8 PARKING

Existing parking within the Kenley FIZ is summarised in Figure 3-8. Within the FIZ, there are various parking bays including along Kenley Lane outside of the station, which are free to park in but subject to a time restriction and on Station Road, with these resident-only permit bays. There is a Controlled Parking Zone (CPZ) in which parking is not allowed between 13:00 and 14:00 from Monday to Friday. The extents of the CPZ cover sections of Oaks Way, Park Road, Hayes Lane, Kenley Lane and Valley Road.

Much of Godstone Road is double red line within the FIZ and study area, but there are parking bays along the southern side of Godstone Road east and west of Station Road, including outside the amenities on Norfolk Terrace (one hour of parking permitted between 07:00am and 19:00pm, with no return within two hours, Monday to Saturday) and outside Kenley Memorial Hall, with these latter spaces not subject to any time restrictions.

Figure 3-8 – Existing Parking within Kenley



Also within the FIZ is the car park for Kenley Station, which has 24 spaces in total. The station car park was observed to be only around 50% occupied during a site visit. There is also a public car park for the Co-Op convenience store situated on the south eastern corner of the Hayes Lane/Station Road junction, but this car park only has capacity for around five cars, and was seen to be over-capacity during the AM peak period, with cars parking illegally on the yellow box markings outside of the entrance to the store and on Hayes Lane north of the parking bays on the eastern side of the road.

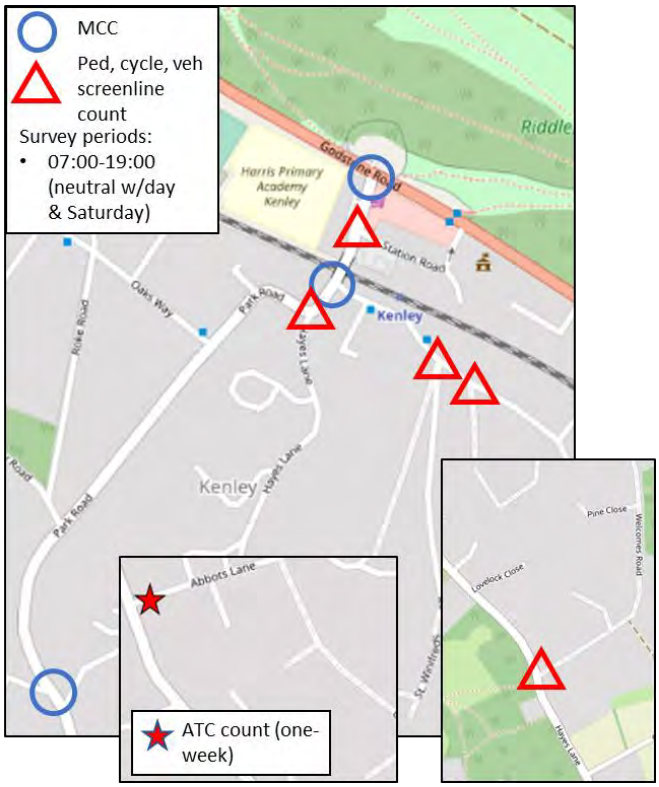
4 SURVEYS

Traffic and parking surveys were undertaken in May and June 2019 with various survey types commissioned.

Traffic surveys in the form of Manual Classified Counts (MCCs) and Classified Link Counts (CLCs) were undertaken on Thursday 9 May and Saturday 11 May 2019, while an Automatic Traffic Counter (ATC) was also in place for a week-long period spanning Tuesday 7 May to Monday 13 May 2019.

Due to unforeseen road closures associated with roadworks and some localised flooding on Thursday 9 May, some of the surveys were repeated to ensure the survey data was unaffected and more typical of a neutral weekday. Where surveys were redone has been noted below.

A parking beat survey was undertaken on Thursday 9 May and Saturday 11 May 2019, for which the Lambeth Parking Survey Methodology was used.



Surveyed traffic flows within the study area are included in Appendix B. A review of the survey data suggested the AM peak hour was between 07:30 and 08:30am, while the PM peak was between 17:00 and 18:00pm. The Saturday peak hour was 11:30am to 12:30pm.

4.1 MANUAL CLASSIFIED COUNTS

Manual Classified Turning Counts (MCCs) were undertaken at three junctions within the study area over a 12-hour period between 07:00am and 19:00pm on Thursday 9 May and Saturday 11 May 2019:

- Site 1 – A22 Godstone Road/Hayes Lane junction;
- Site 3 – Hayes Lane/Kenley Lane junction; and
- Site 5 – Park Road/Hayes Lane/Firs Road junction – this count was affected by roadworks with the northern Hayes Lane arm of the junction closed between 08:30am and 15:00pm. It was therefore repeated on Wednesday 5 June without incident.

4.2 AUTOMATIC TRAFFIC COUNTS

An Automatic Traffic Counter (ATC) was installed on Abbots Lane just west of the junction with Hayes Lane. The ATC was in place for a week between Tuesday 7 May and Monday 13 May, and captured two-way flow of traffic travelling west to the Hayes Lane junction and east down Abbots Lane, which connects with the narrow section of Hayes Lane south of Ravens Wold. The ATC also captured speeds but due to the proximity of the loop to the junction, these were very low, as expected, with two-way 85th percentile speeds of around 17mph.

4.3 CLASSIFIED LINK COUNTS

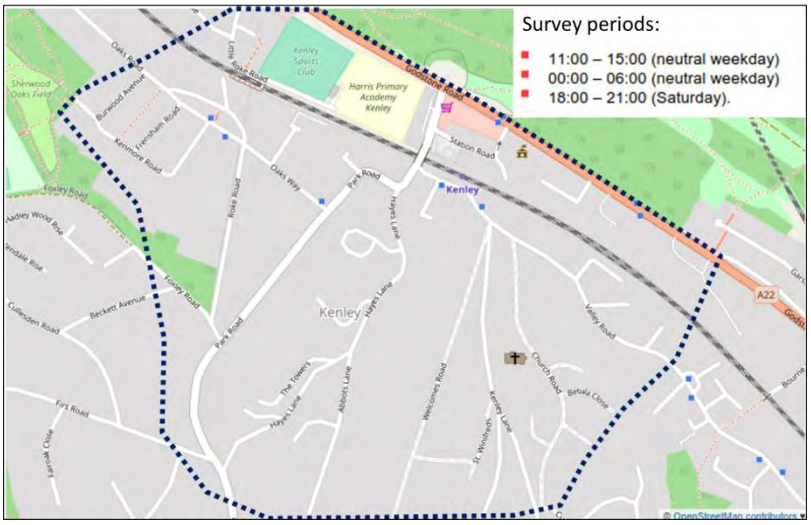
Classified Link Counts (CLCs) were installed at five locations within the study area to capture two-way flows of vehicles, cyclists and pedestrians, to provide a picture of the existing pedestrian and cycle demand on the main routes to and from the station and the centre of the FIZ. CLCs, unlike MCCs, capture pedestrian movements, but do not capture turning flows at junctions.

CLCs were undertaken at the following locations over a 12-hour period between 07:00am and 19:00pm on Thursday 9 May and Saturday 11 May 2019:

- Site 2 – Hayes Lane/Station Road junction;
- Site 4 – Hayes Lane/Park Road junction – this count was affected by roadworks with the southern Hayes Lane arm of this junction closed between 08:30am and 15:00pm. It was therefore repeated on Wednesday 5 June without incident.
- Site 6 – Kenley Lane/Valley Road/Welcomes Road junction – this count was affected by localised flooding at the junction between Kenley Lane and Welcomes Road between the hours of 17:00 and 18:00pm, which led to vehicles turning around. It was therefore repeated on Wednesday 5 June without incident;
- Site 7 – Valley Road/Church Road junction; and
- Site 8 – Welcomes Road

4.4 PARKING SURVEYS

A Parking Beat Survey using the Lambeth Parking Survey Methodology was undertaken on Thursday 9 May and Saturday 11 May 2019. The area for the survey is shown in the figure opposite.



Completing the parking survey first required the compilation of a detailed inventory of parking within the study area, with all parking separated into different restrictions (e.g. double yellow, unrestricted, resident parking bays etc.).

All inventoried parking bays and kerb space where parking is permitted (or not) was then observed at 00:00 and 11:00am on Tuesday 9 May, and again at 18:00pm on Saturday 11 May, with occupancy recorded. This provided an overview of where parking was fully occupied within the study area, at certain times throughout the day.

Maps summarising the parking beat survey findings are presented in Appendix C and analysed in Chapter 5.

5 DATA ANALYSIS AND AUDITS

This chapter of the report provides an analysis of the previous sections of the report, including a review of information obtained through desktop review, a review of the baseline conditions, a review of survey data and findings from site visits to Kenley.

The purpose of this section of the report is to identify issues, which are presented and appraised in Chapter Six of the report.

5.1 TRAFFIC FLOW

Surveyed traffic flows for the entire study area are shown in Appendix B to include all the data collected in surveys. Surveyed flows of all vehicles are shown schematically in Figure 5-1 for the weekday AM peak hour and for the PM peak hour. Saturday flows are included in Appendix D which includes all surveyed traffic flows from 2019 shown schematically. It should be noted that no modelling has been undertaken at this stage so traffic flow problems cannot be quantified. The flows shown are for reportative purposes only.

Figure 5-1 – 2019 Surveyed Traffic Flows – AM Peak Hour 07:30-08:30

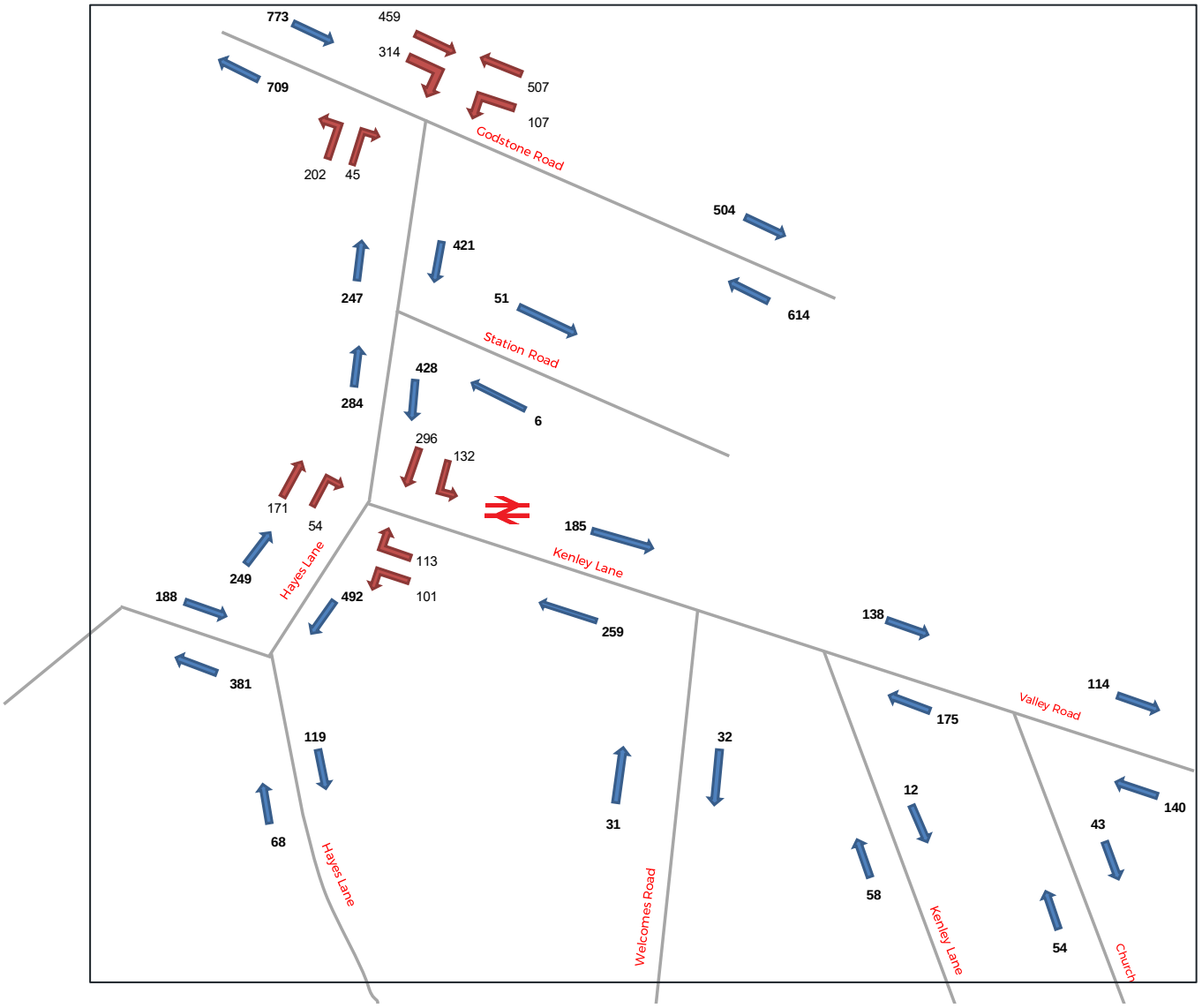
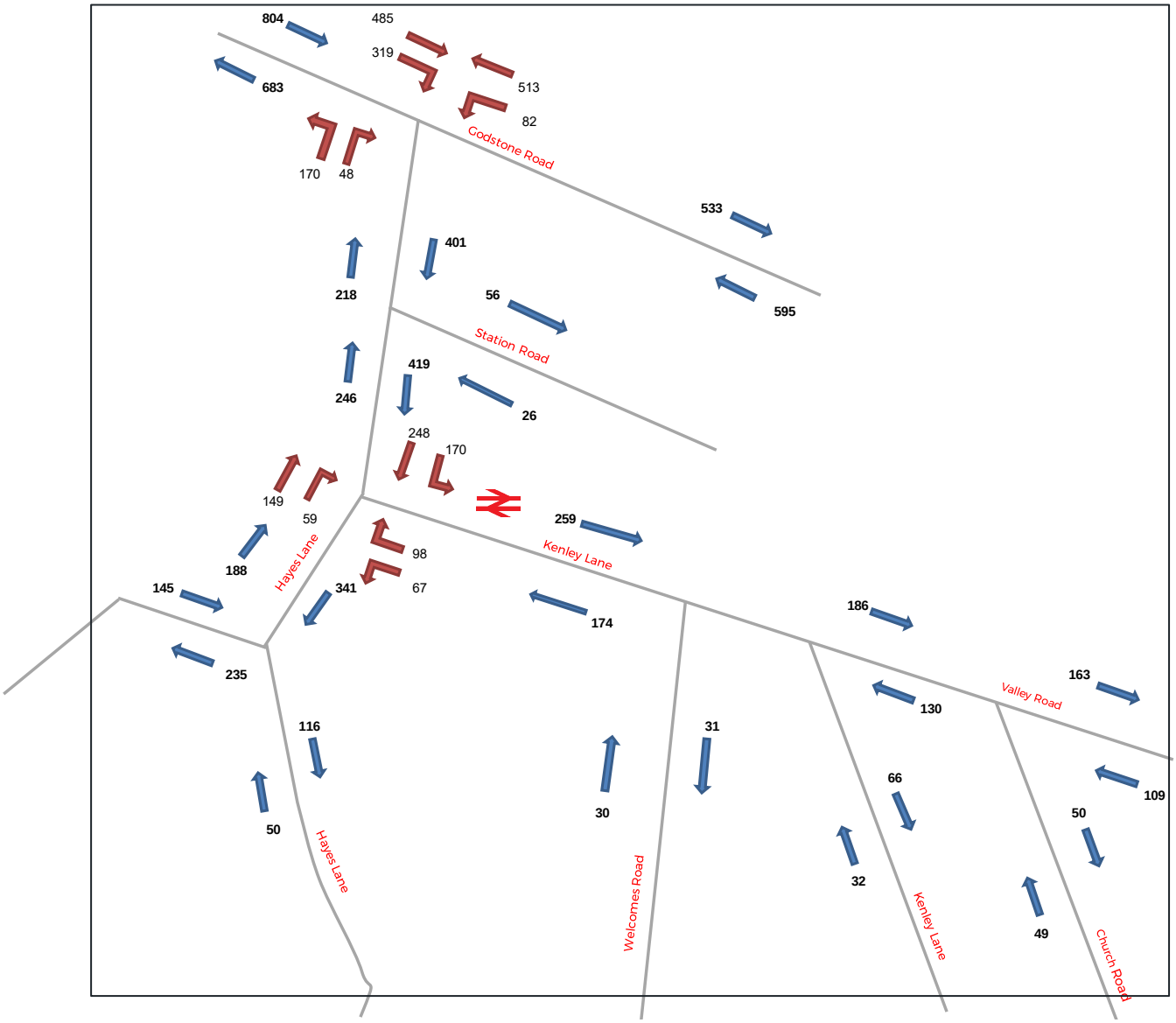


Figure 5-2 – 2019 Surveyed Traffic Flows – PM Peak Hour 17:00-18:00



A22 Godstone Road/Hayes Lane

Of the three junctions, the A22 Godstone Road/Hayes Lane junction was the busiest, as expected. In the AM peak hour 1,634 vehicles were recorded using the junction, with a similar amount (1,617 vehicles) recorded in the PM peak hour. Saturday was not much less busy with 1,585 vehicles recorded at the junction during the peak hour.

The survey data reflects how busy the junction between Hayes Lane and Godstone Road was in terms of turning movements, especially on weekdays, with the most common turning manoeuvre the right turn from Godstone Road into Hayes Lane. Of the eastbound vehicles on Godstone Road, in the AM peak 41% of vehicles turned right into Hayes Lane, a total of 314 vehicles making this manoeuvre, equating to five vehicles per minute. In the PM peak, there was a similar situation with 40% of eastbound traffic through the junction turning right, or 319 vehicles (five per minute).

Although traffic numbers through the junction were very similar in the surveyed Saturday peak hour, the proportion of vehicles turning right from Godstone Road into Hayes Lane was much lower, with only 25% of eastbound traffic turning right, or 183 vehicles.

Hayes Lane

The survey data indicated that a significant amount of traffic was using the narrow section of Hayes Lane between Park Road and Hayes Lane during the AM and PM peak periods, despite the narrow carriageway and sinuous nature of the route. 119 vehicles in total travelled southbound during the AM peak with 68 travelling northbound, so a total of 187 in both directions between 07:30 and 08:30am. In the PM peak, 116 vehicles travelled southbound and 50 northbound. Although not a significant number of vehicles in relative terms, considering there is rarely enough space for two vehicles to pass each other, three vehicles per minute using Hayes Lane in the AM peak is likely to lead to a lot of giving way and reversing into passing places given the width of the road.

Traffic flow on the narrow section of Hayes Lane between Park Road and Hayes Lane was lower during the Saturday peak period, with 74 vehicles recorded southbound and 51 northbound between 11:30am and 12:30pm.

Kenley Lane

The very narrow section of Kenley Lane, south of the junction with Valley Road, was less busy than Hayes Lane, and had a more tidal flow of traffic. 58 vehicles used Valley Road to travel northbound in the AM peak period, with only 12 vehicles recorded southbound. In the PM peak, 66 vehicles were recorded southbound with 32 northbound. This reflects the importance of Kenley Lane for accessing the residential areas around Hermitage Lane, Cumberlands and Longwood Road, despite the narrowness of the street.

5.2 PARKING AND LOADING

A detailed inventory of all parking spaces within the extents for which the parking survey has been carried out is shown in Table 5-1. A total of 885 daytime parking spaces were recorded, with 1,151 spaces overnight and on Sundays.

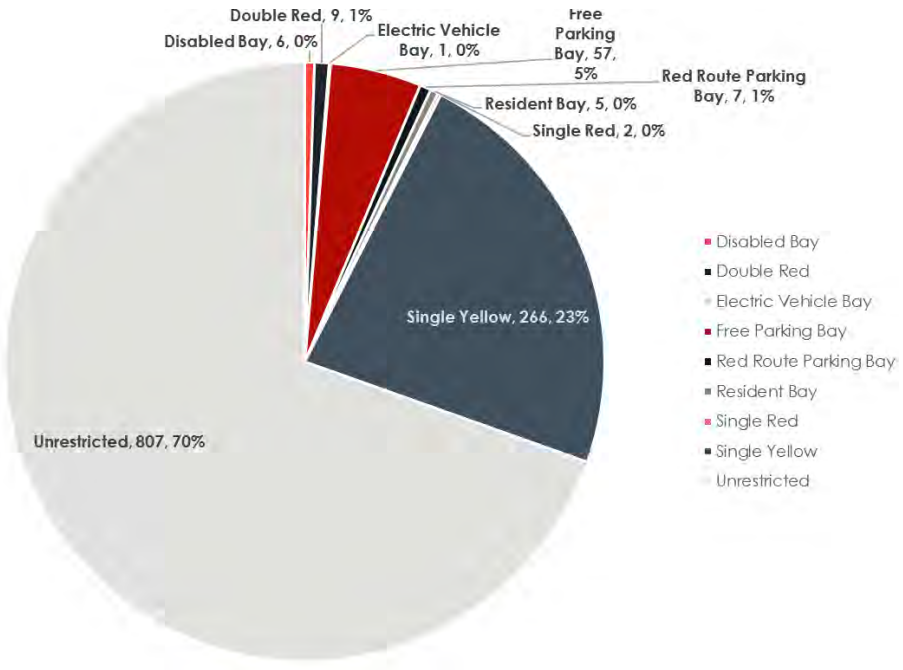
Table 5-1 – Inventory of Parking Spaces within Kenley

Roads	Disabled Bay	Electric Vehicle Bay	Free Parking Bay	Red Route Parking Bay	Resident Bay	Single Red	Single Yellow	Unrestricted	Grand Total
Abbots Lane								70	70
Bakers Close							11		11
Beechcroft Avenue								16	16
Betula Close							12		12
Burnwood Avenue	1							34	35
Firs Road								9	9
Foxley Road							0	39	39
Frensham Road								21	21
Godstone Road		1		7		2		158	176
Hayes Lane	1		7				0	5	13
Hermitage Road								31	31
Highclere Close								24	24

Roads	Disabled Bay	Electric Vehicle Bay	Free Parking Bay	Red Route Parking Bay	Resident Bay	Single Red	Single Yellow	Unrestricted	Grand Total
Kenley Lane			14				22	18	54
Kenmore Road	1							65	66
Little Roke Avenue								3	3
Little Roke Road	1							28	29
Oaklands	1						7	40	48
Oaklands Gardens	1						1	13	15
Oaks Road								59	59
Oaks Way							24	36	60
Park Road			20				83	44	147
Ravens Wold								6	6
Redwood Close							8		8
Roke Close								80	80
Station Road					5		13	0	19
Valley Road			16				73		89
Waterbourne Way								8	8
Yewbank Close							12		12
Grand Total (evening)	**6**	**1**	**57**	**7**	**5**	**2**	**266**	**807**	**1,151**
Grand Total (day time)	**6**	**1**	**57**	**7**	**5**	**2**	**0**	**807**	**885**

The type of parking spaces within the study area is broken down as shown in Figure 5-3.

Figure 5-3 – Types of Parking Bays



The results of the Parking survey have been summarised in Table 5-2, which shows parking stress on each individual road within the study area, with detailed reports of each street available in Appendix C, along with overview mapping of the study area parking stress for each time period. Between 250 to 269 vehicles were observed in each of the time periods, showing a relatively flat level of demand. The demand for certain streets did differ throughout the time periods; mapping provided at Appendix C shows that for example there is key demand around Kenley Station during the weekday, which tapers off during the weekend.

Table 5-2 – Parking Survey Results – Parking Stress

Road	Thursday (14:00)			Thursday (00:00)			Saturday (18:00)		
	Demand (veh)	Capacity (veh)	Parking Stress (%)	Demand (veh)	Capacity (veh)	Parking Stress (%)	Demand (veh)	Capacity (veh)	Parking Stress (%)
Abbots Lane	5	70	7%	12	70	17%	7	70	10%
Bakers Close	1	0	100%	0	11	0%	0	0	-
Beechcroft Avenue	1	16	6%	1	16	6%	4	16	25%
Betula Close	0	0	-	0	12	0%	0	0	-
Burwood Avenue	17	34	50%	14	34	41%	20	34	59%
Firs Road	0	9	0%	0	9	0%	0	9	0%
Foxley Road	4	39	10%	5	39	13%	4	39	10%
Frensham Road	10	21	48%	6	21	29%	14	21	67%
Godstone Road	22	74	30%	24	76	32%	26	74	35%
Hayes Lane	4	12	33%	7	12	58%	1	12	8%
Hermitage Road	0	31	0%	3	31	10%	4	31	13%
Highclere Close	2	24	8%	2	24	8%	1	24	4%
Kenley Lane	18	32	56%	15	54	28%	6	32	19%
Kenmore Road	37	65	57%	27	65	42%	52	65	80%
Little Roke Avenue	2	3	67%	3	3	100%	3	3	100%
Little Roke Road	25	28	89%	25	28	89%	14	28	50%
Oaklands	28	40	70%	26	47	55%	31	40	78%
Oaklands Gardens	3	13	23%	8	14	57%	5	13	38%
Oaks Road	30	59	51%	21	59	36%	31	59	53%
Oaks Way	2	36	6%	3	60	5%	3	36	8%
Park Road	6	64	9%	32	147	22%	5	64	8%
Ravenswold	0	6	0%	0	6	0%	0	6	0%
Redwood Close	1	0	100%	0	8	0%	0	0	-
Roke Close	9	80	11%	10	80	13%	14	80	18%

Road	Thursday (14:00)			Thursday (00:00)			Saturday (18:00)		
	Demand (veh)	Capacity (veh)	Parking Stress (%)	Demand (veh)	Capacity (veh)	Parking Stress (%)	Demand (veh)	Capacity (veh)	Parking Stress (%)
Station Road	7	5	140%	7	18	39%	8	5	160%
Valley Road	9	16	56%	16	89	18%	5	16	31%
Waterbourne Way	7	8	88%	2	8	25%	7	8	88%
Yewbank Close	0	0	0%	0	0	0%	1	0	100%

Key Areas of Parking Stress

It is important to note that in Table 5-2 and in the maps in Appendix C some streets, although showing as at 100% parking stress, have very few spaces in which vehicles can legally be parked, which can skew the result and may not indicate an issue with parking in that location. For instance, although Little Roke Avenue is showing at 100% parking stress, there are only three spaces here, and if there was one less vehicle parked there during the survey, the parking stress would be significantly lower.

Highlight issues identified from the survey results are outlined below:

- **Station Road** – parking along Station Road is more restricted on Thursday at 14:00pm and Saturday at 18:00pm than at midnight on Thursday, with 18 spaces free to park in at midnight but only five spaces at the more restricted times. This leads to the parking stress of 140% on Thursday and 14:00pm and 160% on Saturday at 18:00pm. A stress higher than 100% indicates demand is higher than capacity and suggests there were cars parked along Station Road at these times in places not considered spaces in the parking beat survey.
- **Little Roke Road** – there was significantly higher demand for parking along Little Roke Road on the Thursday than on the Saturday in which the parking survey was undertaken, despite the capacity being the same with no stricter restrictions during the day. On Thursday at 14:00pm and midnight, 25 of 28 spaces (89%) were occupied. This could be indicative of commuters parking on Little Roke Road during the weekday and residents parking overnight, with the lower demand during the day on Saturday perhaps due to there being no commuters or more relaxed restrictions elsewhere closer to the station.
- **Oaklands** – parking stress was between 70 and 78% around the Oaklands Estate at Thursday at 14:00pm and Saturday at 18:00pm.
- **Waterbourne Way** – although Waterbourne Way only has eight spaces, there are no restrictions on these. On Thursday at 14:00pm and Saturday at 18:00pm parking demand was nearing capacity, with seven out of eight spaces occupied at both these times (88% full). This could suggest that Waterbourne Way is used by commuters due to its proximity to the station and lack of restrictions in place there, as stress at midnight on Thursday was only 18%, with only two spaces occupied, suggesting residents do not use Waterbourne Way to park.
- **Kenmore Road –** parking demand on Kenmore Road was nearing capacity on Saturday at 18:00pm, with 52 of 65 bays (80%) occupied during the parking beat survey.

Analysis of the parking survey data raised some question marks over parking restrictions along Godstone Road, with parking stress lower than expected given the known concerns about a lack of parking capacity there and given more spaces are to be created in front of Kenley Memorial Hall as part of TfL's Godstone Road scheme. Capacity was higher than expected due to the northern side of Godstone Road not having any parking restrictions along it from the Kenley Hotel to Garston

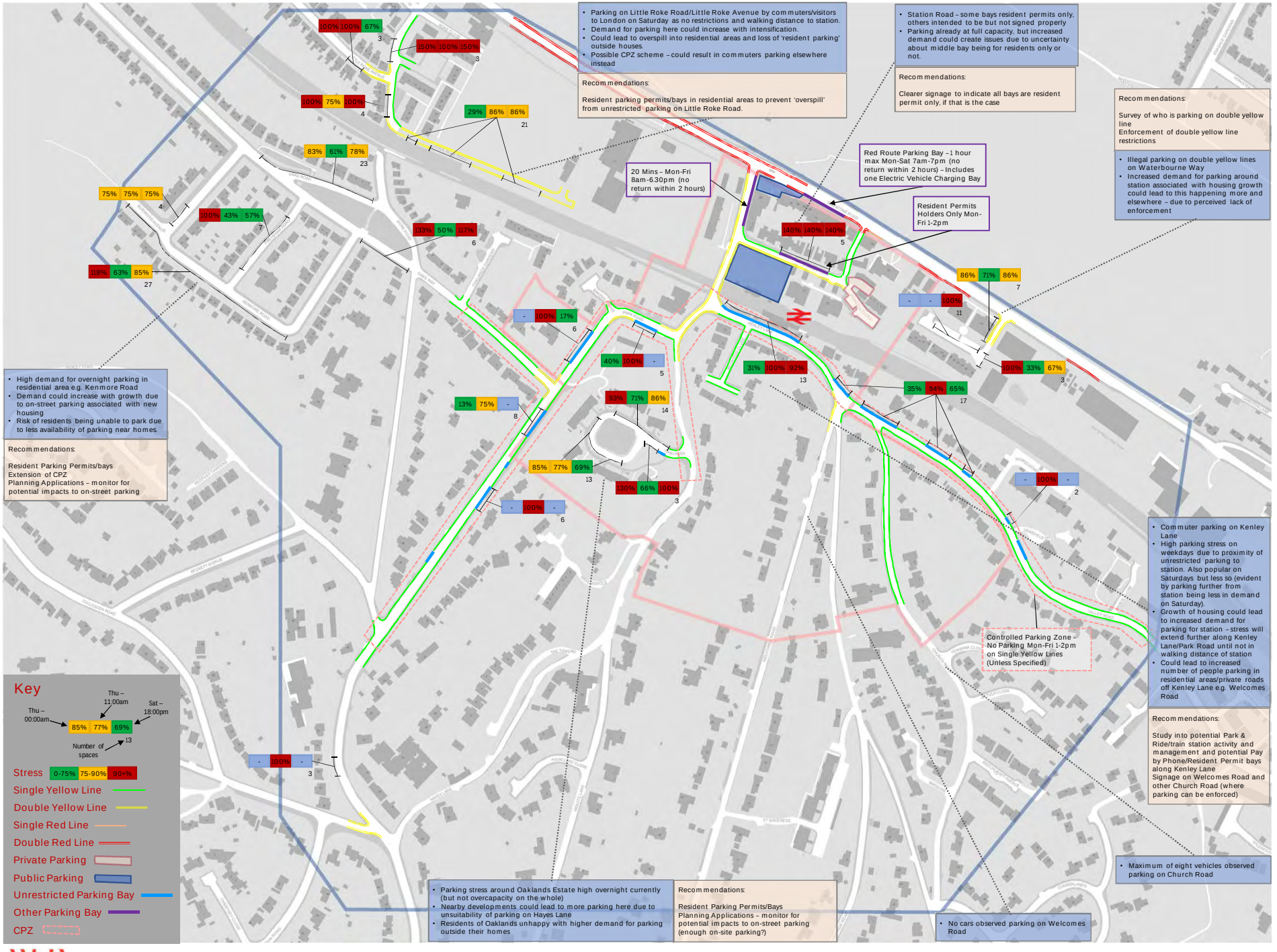
Lane, east of the study area. Although there is an advisory cycle lane along this length, vehicles could still end up parking along this section if the driver considered it unavoidable, as per Rule 140 of the Highway Code. Whilst it is considered unlikely drivers would park along the northern side of Godstone Road, the lack of more clear-cut restrictions preventing them from doing so does raise potential issues of parking here.

Although not included in the parking survey, the car park for the Co-Op was observed to be overused and this is a known local issue. There are only five spaces in the car park, so when these are occupied, drivers park on the hatching adjacent to the parking spaces or within the car park but not inside a space. Vehicles were also observed parking on Hayes Lane north of the on-street parking bays on the eastern side, creating a road safety issue (covered later in the chapter).

Conversely, the car park for Kenley Station was under-utilised with spare capacity observed during the day.

Plan 1, overleaf, illustrates the parking demand, capacity and stress within the study area, highlights issues and introduces recommended measures aimed at improving parking.

Plan 1 - Existing Parking and Parking Stress and Issues

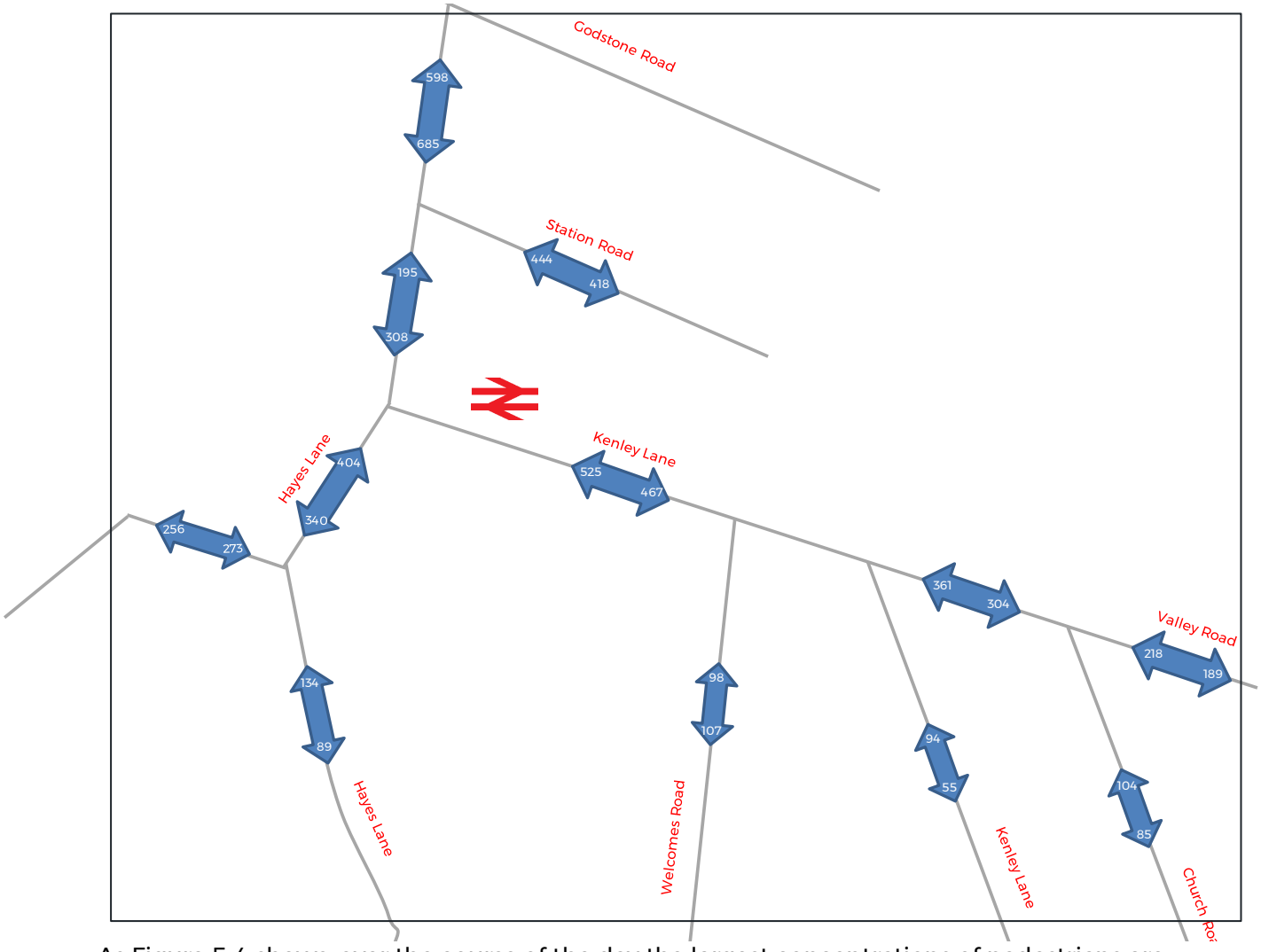


5.3 PEDESTRIAN AND CYCLE DEMAND

As mentioned in Chapter 4, pedestrian flows within the study area were captured using Classified Link Counts (CLCs) which identified all vehicles, pedestrians and cyclists passing a certain point in both directions. This enabled an examination of where there is currently pedestrian and cycle demand within Kenley, although cycle demand was observed to be very low so this section focuses on existing pedestrian demand.

2019 surveyed pedestrian flows are shown for the AM, PM and Saturday peak hours in Appendix E. Figure 5-4 shows the pedestrian flows on the surveyed weekday over the 12-hour period between 7:00am and 7:00pm.

Figure 5-4 – 2019 Surveyed Pedestrian Flows – All Day 07:00-19:00



As Figure 5-4 shows, over the course of the day the largest concentrations of pedestrians are around the station, with the highest recorded flows on Hayes Lane between Godstone Road and Station Road. There are also high flows of pedestrians along Kenley Lane to and from the pedestrian entrance to the station situated east of Hayes Lane, while there are also high flows along Station Road in both directions.

Of significance is that over the 12-hour period there were 308 pedestrians who crossed the Hayes Lane overbridge southbound and 195 who crossed northbound. The survey data did not record which side the road pedestrians walked, but a total of 503 pedestrians using the overbridge footways is significant given the very narrow footways on both sides. In the AM peak hour, 85 pedestrians crossed the overbridge, 50 northbound and 35 southbound, while in the PM peak hour this number was a lot lower, with only nine people crossing northbound and 12 southbound.

In addition, despite the lack of pedestrian provision and narrow carriageways, Hayes Lane south of Park Road and Kenley Lane south of Valley Road were both relatively well used by pedestrians. Over 12 hours, 134 pedestrians were recorded northbound and 89 southbound on Hayes Lane, and 94 northbound and 55 southbound on Kenley Lane. A high proportion of the pedestrians using both were recorded during the AM peak periods. For instance, of the 223 pedestrians recorded using Hayes Lane over the 12 hours, 49 (22%) of these were between 07:30 and 08:30am.

Also, of note is that Welcomes Road and Church Road, both under private ownership, had as many pedestrians as Kenley Lane and Hayes Lane. Over 12 hours, 205 pedestrians were recorded on Welcomes Road, with 189 recorded on Church Road. 205 pedestrians were recorded on Welcomes Road, with 189 recorded on Church Road.

5.4 ROAD SAFETY REVIEW

Chapter 3 included a section on collision analysis in which previous collisions within the study (within the past five years) were summarised and analysed. A road safety review was also undertaken based on on-site observations. The purpose of the review was to identify road safety risks that may become more likely in future with expected growth in traffic and pedestrians associated with increased housing.

Many of the risks identified on-site related to pedestrian provision with numerous locations identified where pedestrians would be vulnerable, especially during hours of darkness. The same risks would also apply to cyclists but considered to be more applicable for pedestrians, due to the larger surveyed numbers of pedestrians than cyclists within the FIZ.

Risks observed during the road safety review and their location are summarised in Table 5-3.

Table 5-3 – Summary of Issues and Risks Identified in Road Safety Review

Location	Road Safety Issue(s) and Risks
Hayes Lane North (between Godstone Road and Park Road)	▪ Very **narrow footway on Hayes Lane overbridge**, pedestrians forced into carriageway where they are in danger of being struck or having to wait, difficult for pedestrians with pushchairs or wheelchair users – exacerbated by narrow carriageway and busy traffic. ▪ **Narrow carriageway on Hayes Lane overbridge** – difficult for two cars to pass each other, drivers must give way to large vehicles, vehicles overhanging the footways putting pedestrians at risk of being struck by wing mirrors etc. ▪ **Poor crossing provision over Hayes Lane at the junction with Godstone Road**, pedestrians crossing between static traffic at risk of being struck by turning traffic, children crossing between cars could be unsighted by turning vehicles. Pedestrians observed running across Hayes Lane to avoid vehicles turning in, increased risk of slips, trips and falls. ▪ **Parking north of bays on eastern side of Hayes Lane** south of the junction with Godstone Road, blocks vehicles turning left out of car park and could lead to queuing back to Godstone Road and increased risk of shunt collisions. ▪ **Poor visibility for pedestrians at Hayes Lane/Kenley Lane junction**, caused by overbridge wall north of junction and fence south of junction, pedestrians may not be seen by southbound drivers leading to risk of collisions with turning vehicles and pedestrians.

Location	Road Safety Issue(s) and Risks
Godstone Road	▪ **Narrow footway on northern side of Godstone Road** east of the pedestrian crossing and pinch point created by guard railing and start of footpath, could lead to pedestrians experiencing difficulty in crossing to the northern side and potential vehicle strikes, difficulty in manoeuvring pushchair/wheelchair due to pinch point. Affects pedestrians wishing to cross to access eastbound bus service of footpath to Riddlesdown. ▪ **Poor crossing provision over Godstone Road** – currently an uncontrolled dropped kerb crossing with pedestrian refuge island, not very wide so may not be space for a wheelchair user/pushchair and other pedestrians to take refuge there. People waiting on refuge island may be at risk of vehicle strikes. Exacerbated by high observed westbound speeds on Godstone Road. ▪ **High observed speeds of westbound traffic** approaching junction, increases risk of shunt collisions between vehicles slowing down to turn left and westbound traffic.
Hayes Lane South (between Park Road and Hayes Lane at junction with Firs Road)	▪ **No footway along very narrow Hayes Lane**, only 4m wide, pedestrians having to walk on carriageway on road with tight bends, feels very unsafe to walk down and would be even more so in darkness, feel at risk of being struck by car. ▪ **Narrow carriageway of Hayes Lane**, the carriageway is only around 4m wide on Hayes Lane leading to vehicles having to give way to each other, and often having to reverse to do so having already passed a suitable passing place, reversing manoeuvres put pedestrians more at risk and increase risk of shunt collisions. Exacerbated by large vehicles using Hayes Lane despite signs saying it is unsuitable for HGVs. ▪ **HGVs using Hayes Lane,** large vehicles were observed using the very narrow Hayes Lane, increasing safety risks for pedestrians and cyclists ▪ **Poor visibility for pedestrians at Hayes Lane/Park Road junction,** due to wall and vegetation, no safe space for pedestrians to stand to see southbound traffic on Hayes Lane, risk of strikes by southbound vehicles.
Waterbourne Way	▪ **Parking on double yellow lines on Waterbourne Way**, south of junction with Godstone Road, makes turning into and out of junction more difficult leading to potential collisions e.g. shunt collisions between a left turner and westbound vehicle on Godstone Road.
Station Road	▪ **No provision for pedestrians south of Godstone Road**, potential desire line with cut through from bus stop to station via Station Road, but narrow and lack of footway provision puts pedestrians at risk of vehicle strikes with northbound traffic.
Kenley Lane South (south of junction with Valley Road)	▪ **No footway along very narrow Kenley Lane**, two-way traffic but no footway leading to increased risk of vehicle strikes and same issues as Hayes Lane (but less traffic on Kenley Lane), very steep.
Church Road	▪ **Poor surface condition of Church Road**, Church Road is more attractive than Kenley Lane for travelling to Kenley by bicycle or foot, but poor surface condition increases risk of slips, trips and falls for pedestrians and puts cyclists at risk of losing control and becoming unseated.
Various junctions (Oaklands, Kenley Lane, Welcomes Road, Cumberlands, Hermitage Road)	▪ **Number of very wide junctions within the study area**, difficult for pedestrians to cross due to length of crossing, increases risk of strikes by turning vehicles, unattractive for pedestrians and not easily accessible for wheelchair users/pedestrians with pushchairs.

Road safety issues identified as part of this review have informed the issues in Chapter 7.

5.5 HEALTHY STREETS ASSESSMENT

Healthy Streets Assessments have been undertaken for the following streets within the FIZ using a combination of desktop review (of traffic surveys, background data etc.) and observations made during a site visit to Kenley:

- A22 Godstone Road (between Waterbourne Way and Hayes Lane);
- Hayes Lane North (between Godstone Road and Park Road);
- Hayes Lane South (between Park Road and Ravens Wold);
- Kenley Lane North (between Hayes Lane and Welcomes Road);
- Kenley Lane South (from Welcomes Road);
- Park Road (between Hayes Lane and Oaks Way);
- Station Road (between Hayes Lane and Godstone Road).

Table 5-4 summarises the results of the Healthy Streets Assessments for the above streets. A high score indicates better performance. The maximum achievable score is 100.

Table 5-4 – Summary of Healthy Streets Assessments

Healthy Streets Indicator	Godstone Road	Hayes Lane North	Hayes Lane South	Kenley Lane North	Kenley Lane South	Park Road	Station Road
Pedestrians from all walks of life	55	51	43	58	48	54	49
Easy to cross	42	42	54	51	57	47	50
Shade and shelter	67	61	67	50	55	67	67
Places to stop and rest	53	42	47	47	41	47	40
Not too noisy	60	63	67	65	67	67	67
People choose to walk, cycle and use public transport	55	55	43	58	48	54	49
People feel safe	56	50	38	52	43	49	46
Things to see and do	61	53	51	59	51	52	50
People feel relaxed	56	44	41	51	57	53	49
Clean air	58	64	75	64	67	75	58
Overall Healthy Streets Score	**56**	**53**	**53**	**55**	**54**	**55**	**50**
Number of 'zero' scores	2	5	5	2	2	2	4

All five streets included in the Healthy Streets Assessment performed relatively poorly, however, the streets scored low for different reasons. For example, Hayes Lane North had a low score for 'Easy to cross' and 'Places to stop and rest', whereas Hayes Lane South scored poorly for three other indicators.

The scores which are particularly low are **highlighted amber** in the table above, and consist of:

- Easy to cross: Godstone Road only has a refuge crossing provision and vehicle volumes and speeds are high. Hayes Lane North is also busy with traffic and has no crossing provision. Crossing at the junction with Godstone Road is particularly difficult.

- Place to stop and rest: some of the streets have benches, but others have nowhere to rest. This issue is more acute on the steep roads to the south of the station, notable Hayes Lane South and Kenley Lane South
- People choose to walk, cycle and use public transport: Hayes Lane South scores poorly because of the distance to the station, the lack of a bus service and because of the steep gradient, relatively high traffic flow and lack of footways
- People feel safe: Kenley Lane South and Hayes Lane South suffer from a lack of footways, dark spots from infrequent lamp columns and dense canopy cover, relatively high vehicle speeds (from observations only) and a lack of natural surveillance
- People feel relaxed: there are overlaps with the 'people feel safe', but this indicator also considers factors including distance between stopping points and shelter, and vehicle noise. Hayes Lane North and South score poorly for this indicator.

As shown by the cells **highlighted in green**, the area scored relatively highly for certain Healthy Streets indicators, which is largely a reflection of the semi-rural nature of the area. Most of the seven streets assessed have a good level of shade and shelter from tree coverage. They have relatively low levels of traffic and other noise and pollution inducing sources.

5.6 AIR QUALITY

The air quality of the study area has been assessed as part of the Healthy Streets Assessment, with NO_2 levels from the London Atmosphere Emissions Inventory (LAEI) 2016 consulted for the assessment. The Healthy Streets assessment measures annual mean NO_2 concentrations against the legal limit for NO_2 emissions in the UK, which is 40 µg/m3.

Figure 5-5 – Nitrogen Dioxide Annual Average Concentrations in 2016 (left) and 2025 (right)

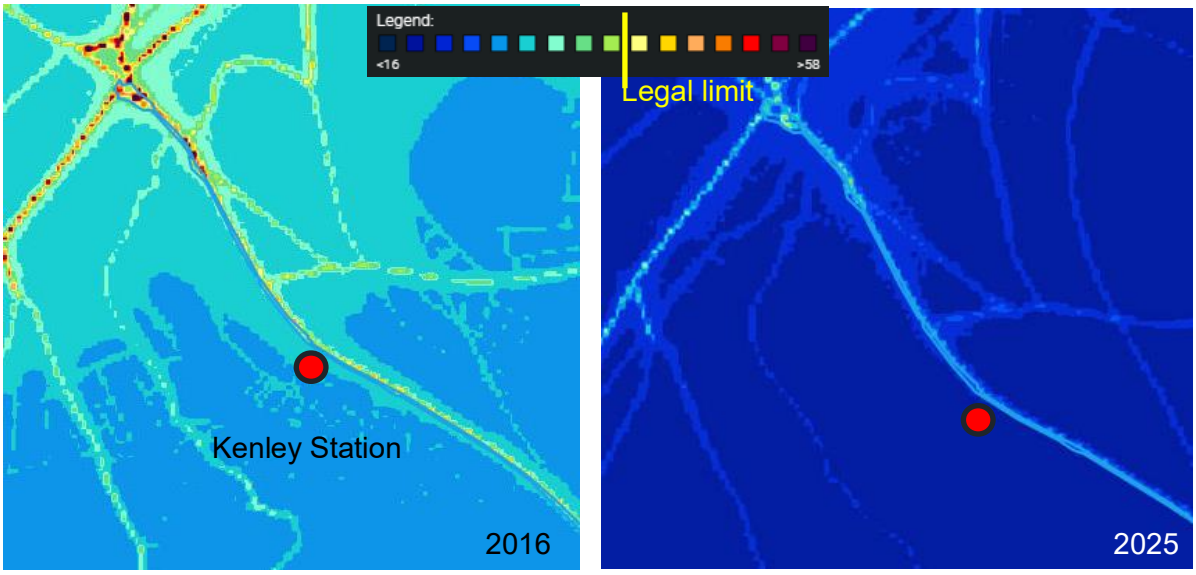


Figure 5-5 shows the annual average concentrations for NO_2. The 2016 map shows that some parts of Godstone Road exceed the legal limit of 40 µg/m3 NO_2 but the areas in Kenley away from the road are comfortably within the legal limit. In 2025 all areas of Kenley are predicted to be well within the legal limit. The 2025 modelling considers measures proposed by TfL which include the roll-out of cleaner buses and the ULEZ expansion. The 2025 modelling does not consider the development around Kenley. However, the scale of development is likely to mean that the forecast future air quality levels remain well within the legal limit for NO_2.

5.7 BUS OPERATIONS

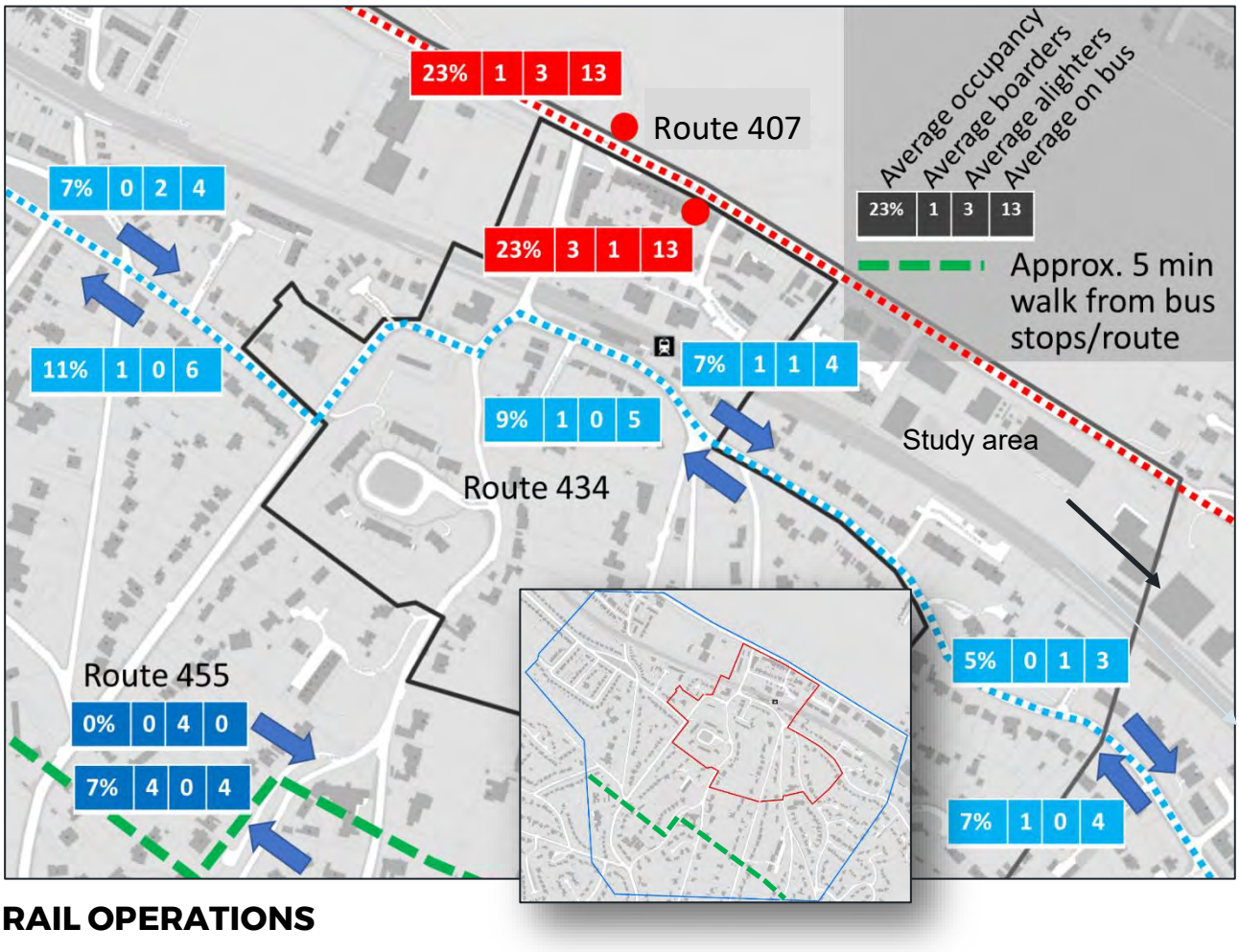
As described in the previous section, there are two routes which run through the study area (407 and 434) and one route that passes just to the south of the study area (455). Routes 407 and 434 run east to west through Kenley.

Figure 5-6 shows the data from analysis of TfL Bus Origin and Destination Survey (BODS) data. The data presented includes the average occupancy (as a percentage) of buses at each stop within the study area, the average number of boarders and alighters at each stop, and the average number of people on the bus at each stop.

For all routes and stops the number of boarders and alighters is very low: between 0-4 people boarding each bus on average throughout the day and between 0-4 people alighting. The average number of people on buses is also very low and ranges between 0 people on average on the bus Route 455 where it terminates on Old Lodge Lane and 13 people for Route 407 at the bus stops on Godstone Road close to Kenley Station. The data suggests that on all three bus routes operating within Kenley, there is spare capacity, with average occupancy when buses stop at Kenley ranging from 5% to 23% occupied.

Figure 5-6 also shows the 5-minute (400m) walking catchment from the bus routes/stops (bus route in the case of Route 434 as it is a hail and ride service). The diagram does not include the catchment for R455. 400m is commonly used as the maximum acceptable distance that bus users should be expected to walk their nearest bus stop. As the diagram shows, only part of the study is within 400m of the nearest stop/route. The walking distance does not consider the steep incline to the south which may add extra walking time, particularly for less able pedestrians.

Figure 5-6 – BODS Bus Occupancy and Patronage



5.8 RAIL OPERATIONS

The estimated total number of entries and exists made at Kenley Station in 2018-19 was 435,588. This is a 5.5% increase in comparison to 2017-18 estimates. It should be noted that there was ongoing disruption on the line serving Kenley in 2017-18 which may have led to a lower number of entries and exits. There was a 4.3% increase in entries and exits in 2019-19 compared to 2016-17. The 2018-19 estimates equates to an average of 1,000 entries/exits per day at Kenley Station, or around 100 in the peak hour.

To assess overcrowding on services from Kenley to London, Southern Railway's performance review data has been used. This review summarises on average (over the past four weeks) how often a train arrived and departed on time and how full it was on average (with how many seats available used as an indicator).

As an example, the Kenley to London Bridge services have been assessed. Figure 5-7 shows how often services in the morning have departed and arrived on time and gives a general indication as to how busy the train was. As it shows, throughout the morning, there is standing room only within carriages on these services. This indicates that there is little spare capacity on services from Kenley to London Bridge in the morning.

Figure 5-7 – Kenley to London Bridge Service Reliability and Capacity (AM)

Train service	Last 4 weeks departed	Last 4 weeks arrived	Carriage capacity
05:58 Kenley to London Bridge	On time	2 min late	
06:28 Kenley to London Bridge	1 min late	1 min late	
06:58 Kenley to London Bridge	1 min late	3 min late	
07:28 Kenley to London Bridge	1 min late	5 min late	
07:58 Kenley to London Bridge	1 min late	3 min late	
08:28 Kenley to London Bridge	2 min late	5 min late	
08:58 Kenley to London Bridge	On time	3 min late	

Key: Seats available Some seats available Standing room only ? Unknown

Figure 5-8 provides an overview of the performance of services in the afternoon and evening from London Bridge to Kenley. As in the morning, all services have little or no spare capacity as is indicated by the trains all having 'standing room only'.

Figure 5-8 – London Bridge to Kenley Service Reliability and Capacity (PM)

Train service	Last 4 weeks departed	Last 4 weeks arrived	Carriage capacity
16:47 London Bridge to Kenley	On time	3 min late	
17:17 London Bridge to Kenley	On time	5 min late	
17:47 London Bridge to Kenley	On time	5 min late	
18:17 London Bridge to Kenley	1 min late	7 min late	
18:47 London Bridge to Kenley	On time	5 min late	
19:14 London Bridge to Kenley	2 min late	4 min late	
19:17 London Bridge to Kenley	On time	2 min late	

Key: Seats available Some seats available Standing room only ? Unknown

It should be noted the measurement of overcrowding presented above does not provide an accurate figure for overcrowding (e.g. as a percentage of capacity). However, it does suggest that existing services to and from London Bridge have little spare capacity and there is 'standing room only' on services between London Bridge and Kenley in both directions at peak times.

5.9 FUTURE CYCLE DEMAND

Figure 5-9 shows information taken from TfL's Strategic Cycling Analysis on potential cycle demand and existing/planned cycle infrastructure. The closest roads that are identified as having high future cycle flow are the A23 and links around Purley.

Figure 5-9 – Potential Cycle Demand (left) and Existing/planned Cycle Infrastructure (right)

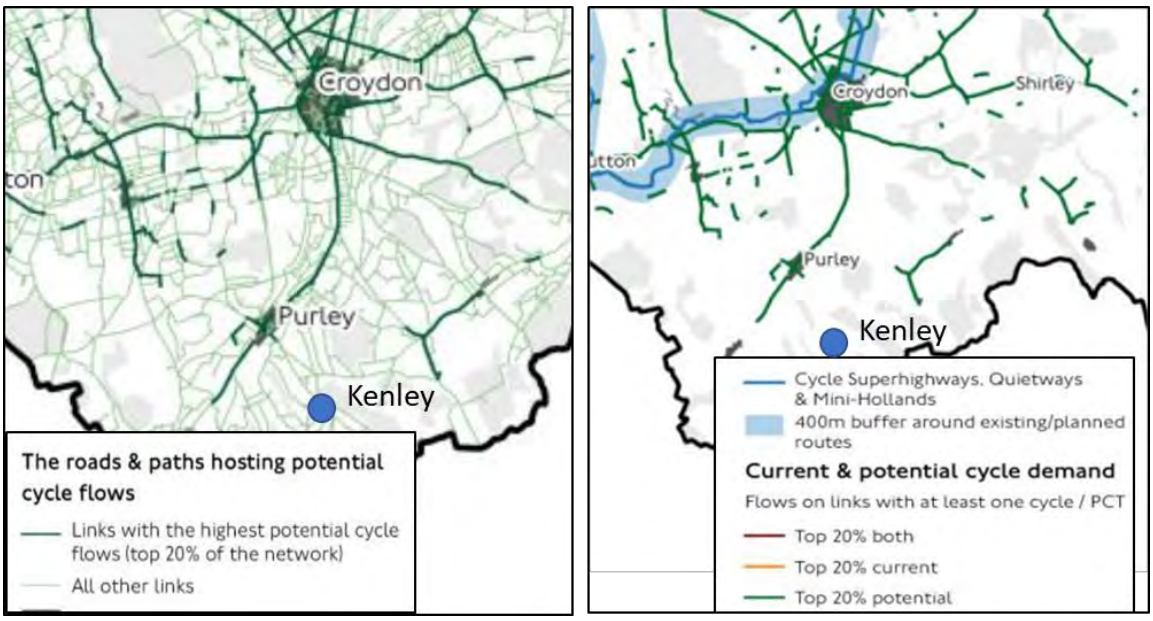
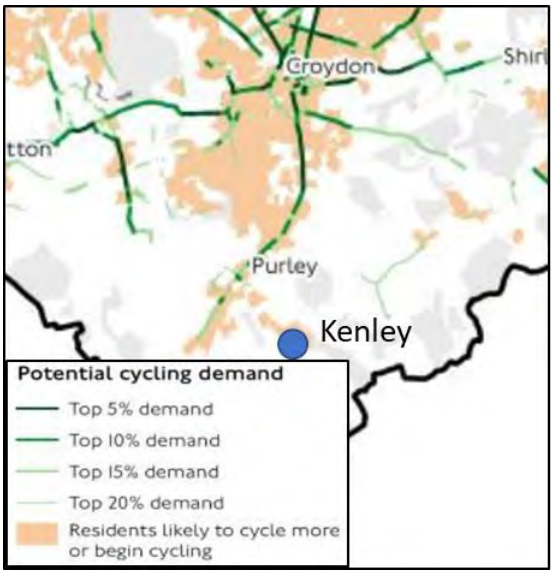


Figure 5-10 shows the links with the highest potential cycling demand overlaid on areas where the residents are likely to cycle more or begin cycling. Godstone Road is identified as an area where more residents may resident are more likely to cycle.

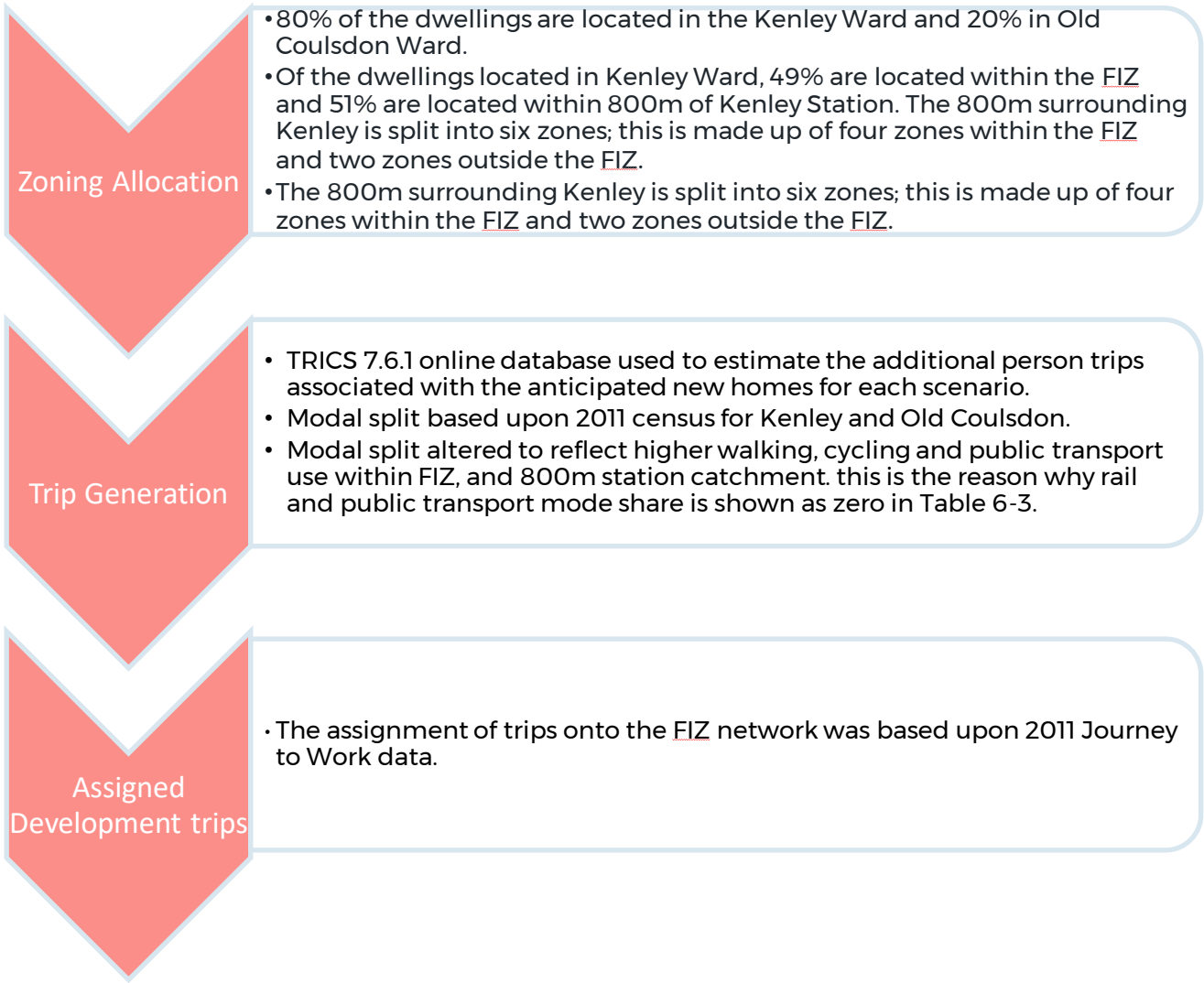
Figure 5-10 – Categorisation of Potential Cycle Demand with High Propensity to Cycle Areas



6 ANTICIPATED GROWTH AND TRIP GENERATION

To estimate the impact of the proposed housing intensification on the existing transport network within the Kenley FIZ, high-level zoning allocation and trip generation exercises were undertaken. This section explains the methodology and assumptions used within this exercise. A summary of the trip generation methodology is shown in Figure 6-1.

Figure 6-1 - Trip Generation Methodology Summary



6.1 INTENSIFICATION SCENARIOS

Two housing intensification scenarios have been assessed. The **upper scenario** proposes the development of **2,758 new dwellings** in the wards of Kenley and Old Coulsdon by 2036 and the **lower scenario** proposes **1,806 new dwellings**.

Kenley is one of the focused areas of intensification for locating the new housing. Croydon's spatial planning team confirmed that 80% of the proposed housing would be within the Kenley Ward and 20% would be within Old Coulsdon. It is anticipated that 49% of all dwellings within Kenley will be within the FIZ. It has also been assumed that all new dwellings will be within 800m of a station. The proportional split of the proposed residential development is shown in Table 6-1.

Table 6-1 – Proposed dwellings within Kenley and Old Coulsdon Ward

	Upper Scenario (2,758 dwelling)		Lower Scenario (1,806 dwelling)	
	Kenley Ward	Old Coulsdon Ward	Kenley Ward	Old Coulsdon Ward
Proportion	80%	20%	80%	20%
Within FIZ	1,076	0	709	0
Outside FIZ within 800m of a station	1,130	552	736	361

Methodology

The first stage was to identify Lower Super Output Areas (LSOAs) within the wards of Kenley and Old Coulsdon. The population for each of the LSOAs was identified using data from the Croydon Observatory website, which has more recent population figures than the 2011 census data.

The next stage was to identify which stations lie within 800m of Kenley or Old Coulsdon wards. An 800m catchment was applied to stations within or near the wards of Kenley and Old Coulsdon. 800m represents a 10 minutes walking distance and represents the maximum distance people are willing to walk to public transport. If the 800m radius around these stations was within either ward boundary the stations were included in the assessment.

Stations for which the 800m catchment extended into either ward included:

- Kenley;
- Reedham;
- Whyteleaf;
- Purley;
- Coulsdon Town (the 800m radius of this station spanned both wards); and
- Coulsdon South

The next step was to distribute the new homes between the various 800m catchments of stations within the two wards. To do this, the population within each 800m catchment was divided by the total population within LSOAs in Kenley and Old Coulsdon. It was assumed that the proportion of population within the 800m catchment would represent the housing allocation. Table 6-2 shows the population within each station's 800m catchment and the number of dwellings assumed to be proposed within each.

Table 6-2 – Dwelling allocated to Station catchments

Station Catchment	Population in 800m of station (in Kenley or Old Coulsdon Ward)	Proportion	Dwelling allocated (Upper Scenario)	Dwelling allocated (Lower Scenario)
Kenley Ward (Outside FIZ)				
Kenley Station	5,290	44%	502	327
Reedham Station	4,442	37%	421	274
Whyteleaf Station	600	5%	57	37

Station Catchment	Population in 800m of station (in Kenley or Old Coulsdon Ward)	Proportion	Dwelling allocated (Upper Scenario)	Dwelling allocated (Lower Scenario)
Purley Station	757	6%	72	47
Coulsdon Town Station	825	7%	78	51
Total	**11,914**	**100%**	**1130**	**736**
Old Coulsdon Ward (Outside FIZ)				
Coulsdon Town Station	1759	40%	221	144
Coulsdon South Station	2639	60%	331	217
Total	**4397**	**100%**	**552**	**361**

6.2 KENLEY HOUSING ZONES

A high-level zoning exercise was undertaken to allocate housing within the FIZ and the 800m catchment surrounding Kenley Station. As the focus of this study is on the Kenley FIZ, this exercise was not completed for the other station catchments within Kenley or the Old Coulsdon Ward.

The 800m catchment area surrounding Kenley Station was split into six zones. This includes the four zones that form the FIZ and two outer zones to the south of Godstone Road. The area to the north of Godstone Road has been excluded, as it is within the 800m catchment but is not located within the Kenley Ward. The six zones are shown in Figure 6-2.

Kenley Focused Area of Intensification

As mentioned in Section 6.1, 49% of the new homes, within the two wards, were assumed to be within the Kenley FIZ, equating to 1,076 and 709 new dwellings in the Upper and Lower scenario respectively.

The dwellings within the FIZ (which make up 49% of the proposed dwellings) were allocated into four zones, shown in Figure 6-2. The following proportion, of the total FIZ dwellings, were allocated to each zone:

- Zone 1 – 13%;
- Zone 2 – 9%;
- Zone 3 – 46%; and
- Zone 4 – 33%.

The assumed split of new dwellings within the FIZ was based on several factors:

- Approved planning applications within the four zones;
- Areas of conservation;
- Flood risk areas; and
- Assumed 'capacity' of zones, based on plot sizes of existing houses to be redeveloped.

The Outer Zone is an 800m radius surrounding Kenley Station, which has been split into two sections. As detailed in Section 6.1, 502 and 327 dwellings were allocated to the Kenley Station catchment in the upper and lower scenario respectively.

Figure 6-2 – Housing Zones

6.3 TRIP GENERATION AND DISTRIBUTION

Total person trip rates were obtained from the TRICS 7.6.1 online database to estimate the additional person trips associated with the anticipated new homes for each scenario. As the study is focused on the impacts of growth on the transport network in the Kenley FIZ, the trip generation exercise was only undertaken to assign trips from within the FIZ and the 800m catchment surrounding Kenley Station to the highway network.

The six zones in Kenley, described in Section 6.2, cover two Middle Super Output Areas (MSOAs). Journey to Work data, from the 2011 census, was used to determine the average number of trips and average mode split across the two MSOAs. The data was disaggregated to indicate where residents are travelling to and from; the destinations were grouped into four zones: Northeast, Northwest, Southeast and Southwest.

The following assumptions, which were agreed with Croydon's Spatial Planning team were used when undertaking the trip generation exercise:

- Inside and outside the FIZ, 50% of new housing would be affordable and 50% privately owned;
- Within the FIZ, 95% of new dwellings would be flats and 5% houses;
- Outside the FIZ, inside and outside the 800m catchment around Kenley station, 50% of new dwellings would be flats and 50% houses;

- Rail service frequency has been used to determine the % uplift in dwellings applied to 800m catchments around stations;

6.4 MODE SPLIT

The average MSOA mode split was altered to better reflect how residents are likely to begin their journey, rather than the main mode which journey to work data is based upon. **The public transport trips within the FIZ were reallocated to walking and cycling. Outside the FIZ, the public transport trips were halved and reallocated to walking and cycling modes**. Table 6-3 and Table 6-4 show the altered mode splits.

Table 6-3 – Modal Splits for New Dwellings in FIZ Travelling to / from North West, North East, South East and South West

FIZ - altered mode split	From development				To development			
	North West	North East	South East	South West	North West	North East	South East	South West
Work mainly at or from home	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Tube/Metro/Light Rail/Tram	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Train	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bus/Minibus/Coach	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Taxi	0.2%	0.0%	0.2%	0.4%	0.2%	0.2%	0.0%	0.0%
Motorcycle/Scooter/Moped	0.9%	0.5%	0.2%	1.5%	0.9%	0.2%	0.8%	1.6%
Driver - Car/Van	34.1%	66.3%	75.7%	65.2%	61.4%	65.1%	78.8%	60.6%
Passenger - Car/Van	2.4%	2.1%	2.9%	2.3%	3.9%	3.7%	5.3%	1.8%
Bike	1.5%	0.9%	1.1%	1.4%	0.8%	0.9%	0.4%	1.6%
Walk	61%	29.8%	19.5%	29.0%	32.6%	29.5%	14.7%	34.5%
Other Method	0.1%	0.5%	0.4%	0.2%	0.2%	0.2%	0.0%	0.0%

Table 6-4 - Modal Splits for New Dwellings in the Outerzone travelling to / from North West, North East, South East and South West

Outer Zone - altered mode split	From development				To development			
	North West	North East	South East	South West	North West	North East	South East	South West
Work mainly at or from home	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Tube/Metro/Light Rail/Tram	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Train	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bus/Minibus/Coach	4.1%	3.4%	3.6%	3.3%	9.1%	2.8%	2.7%	4.3%
Taxi	0.2%	0.0%	0.2%	0.4%	0.2%	0.2%	0.0%	0.0%

Motorcycle/Scooter/Moped	0.9%	0.5%	0.2%	1.5%	0.9%	0.2%	0.8%	1.6%
Driver - Car/Van	34.1%	66.3%	75.7%	65.2%	61.4%	65.1%	78.8%	60.6%
Passenger - Car/Van	2.4%	2.1%	2.9%	2.3%	3.9%	3.7%	5.3%	1.8%
Bike	1.5%	0.9%	1.1%	1.4%	0.8%	0.9%	0.4%	1.6%
Walk	56.6%	26.4%	15.9%	25.7%	23.5%	26.7%	12.0%	30.2%
Other Method	0.1%	0.5%	0.4%	0.2%	0.2%	0.2%	0.0%	0.0%

6.5 ASSIGNED DEVELOPMENT TRIPS

After new trips associated with housing in and around the Kenley FIZ were generated, schematic plans were produced to illustrate where the journeys would be made. Appendix F includes these schematic plans for vehicles, including:

- Development-only vehicle flows for the AM (07:30-08:30am) and PM (17:00-18:00pm) peak periods;
- The percentage increase in vehicle flows for the AM and PM peak periods between 2019 and 2036; and
- The estimated total vehicle flows for 2036 in the AM and PM peak periods (2019 surveyed vehicle flows + development flows).

Appendix G includes the schematic plans for new pedestrian flows associated with the new housing in and around the FIZ. It includes:

- Development-only pedestrian flows for the 12-hour period between 07:00am and 19:00pm;
- The percentage increase in pedestrian flows over the 12-hour period between 2019 and 2036; and
- The estimated total pedestrian flows for 2036 over the 12-hour period (2019 surveyed pedestrian flows + development flows).

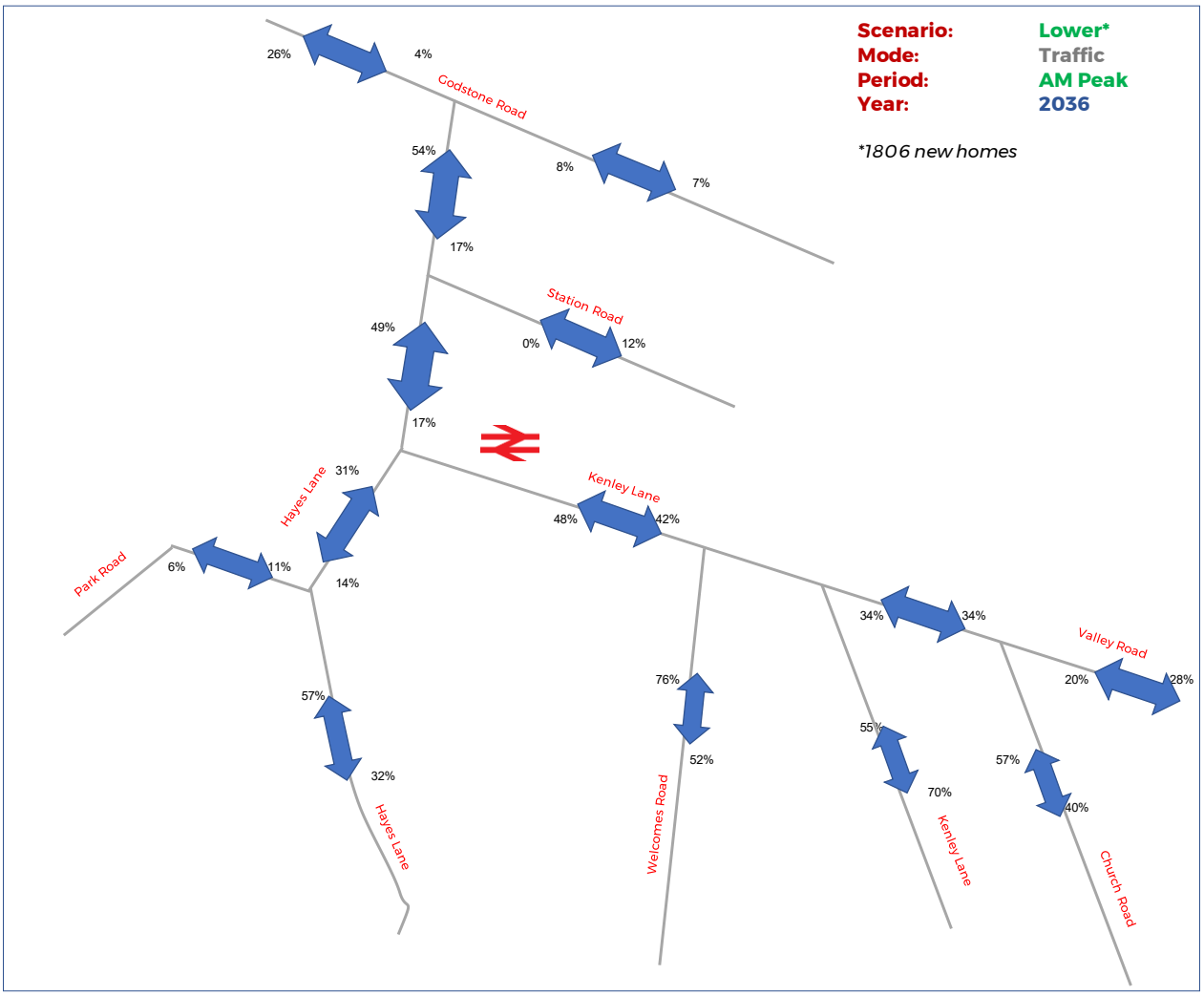
The following assumptions were made on the assignment of the trips to the network:

- Motorists travelling to/from the northwest zone will travel via the Godstone Road (A22)
- Motorists travelling to/from the northeast zone will travel via the Godstone Road (A22)
- Motorists travelling to/from the southeast zone will travel via Valley Road.
- Motorists travelling to/from southwest zone will travel via Park Road.
- Trips associated with development in FIZ zone 1 would originate from Station Road.
- Trips associated with development in FIZ zone 2 would originate from Park Road and Hayes Lane.
- Trips associated with development in FIZ zone 3 would originate from Hayes Lane and Welcomes Road.
- Trips associated with development in FIZ zone 4 would originate from Kenley Lane and Church Road.
- Trips associated with development in Outerzone 1 would originate from Park Road, and Haynes Lane.
- Trips associated with development in Outerzone 2 would originate from Welcomes Road, Kenley Lane and Church Road.

6.6 IMPACT ON KENLEY NETWORK

Figure 6-3 and Figure 6-4 show the percentage increase in traffic within Kenley for the Upper and Lower Scenario during the AM peak. The AM peak is the worst case.

Figure 6-3 - Lower Scenario: Percentage Increase in traffic during the AM Peak



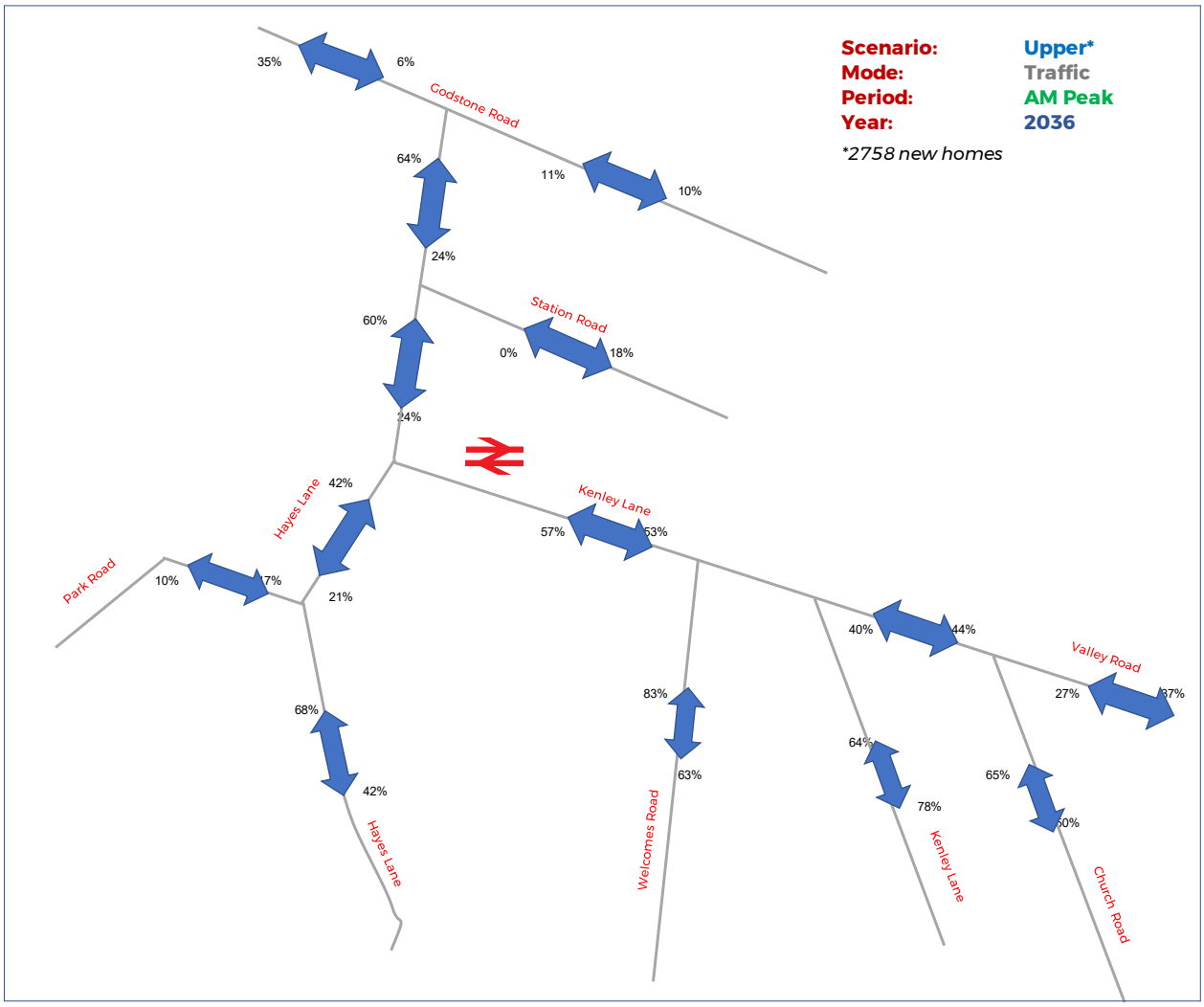
Lower Scenario

As the Lower scenario has fewer houses proposed within the FIZ and the wider Kenley area, the impact of traffic on the local road network is not as severe as the Upper Scenario.

At the Godstone Road / Hayes Lane Junction, during the AM peak period, there are 389 additional vehicles forecast in total and a 4% increase in the number of vehicles turning right onto Hayes Lane. This increase in right turning movement equates to 35 vehicles.

The Lower Scenario also results in an additional 442 vehicles at the Hayes Lane / Kenley Lane junction in the AM Peak. Similarly, to the Upper Scenario, the additional vehicles travelling westbound on Kenley Lane may result in poor operation of the junction.

Figure 6-4 - Upper Scenario: Percentage Increase in Traffic during the AM Peak



Upper Scenario

The additional traffic associated with the development of new housing in the FIZ and around Kenley (both within and outside the 800m catchment) results in a range of increases in the AM peak period. Significantly, there are an additional 567 vehicles at the Godstone Road / Hayes Lane junction. A 6% increase in the number of vehicles turning right onto Hayes Lane during the AM peak is forecast, which equates to 54 vehicles and less than one extra vehicle per minute. Although this does not sound like a significantly high number, the right turn bay on Godstone Road only provides one vehicle space to wait to turn right. This lead to an increased risk of eastbound traffic being blocked by vehicles queuing to turn right at the junction

Northbound and southbound traffic over the Hayes Lane overbridge is estimated to increase by 64% and 24% respectively in the AM peak between 2019 and 2036 due to new trips associated with the intensification of housing. This equates to 434 more vehicles travelling northbound and 133 more vehicles travelling southbound in the AM peak period. The additional vehicles would increase the risk of conflict over the very narrow overbridge and could lead to higher chance of delay due to vehicles giving way to larger vehicles crossing the bridge. The increase in vehicular traffic here also exacerbates safety issues caused by the narrowness of both footways across the

bridge. In the PM peak, there is estimated to be a further 149 trips northbound and 165 southbound.

The Upper Scenario also results in a significant increase in traffic at the Hayes Lane / Kenley Lane junction. In the AM peak an additional 658 vehicles are forecast to use the junction. The greatest increase is expected on the approach to the junction from Kenley Lane, where traffic is forecast to increase by 57%. The additional traffic may lead to significant congestion problems on Kenley Lane. At present Kenley Lane is effectively reduced to one lane due to parking on the northern side of the carriageway, and queuing westbound traffic may block the carriageway for those travelling eastbound.

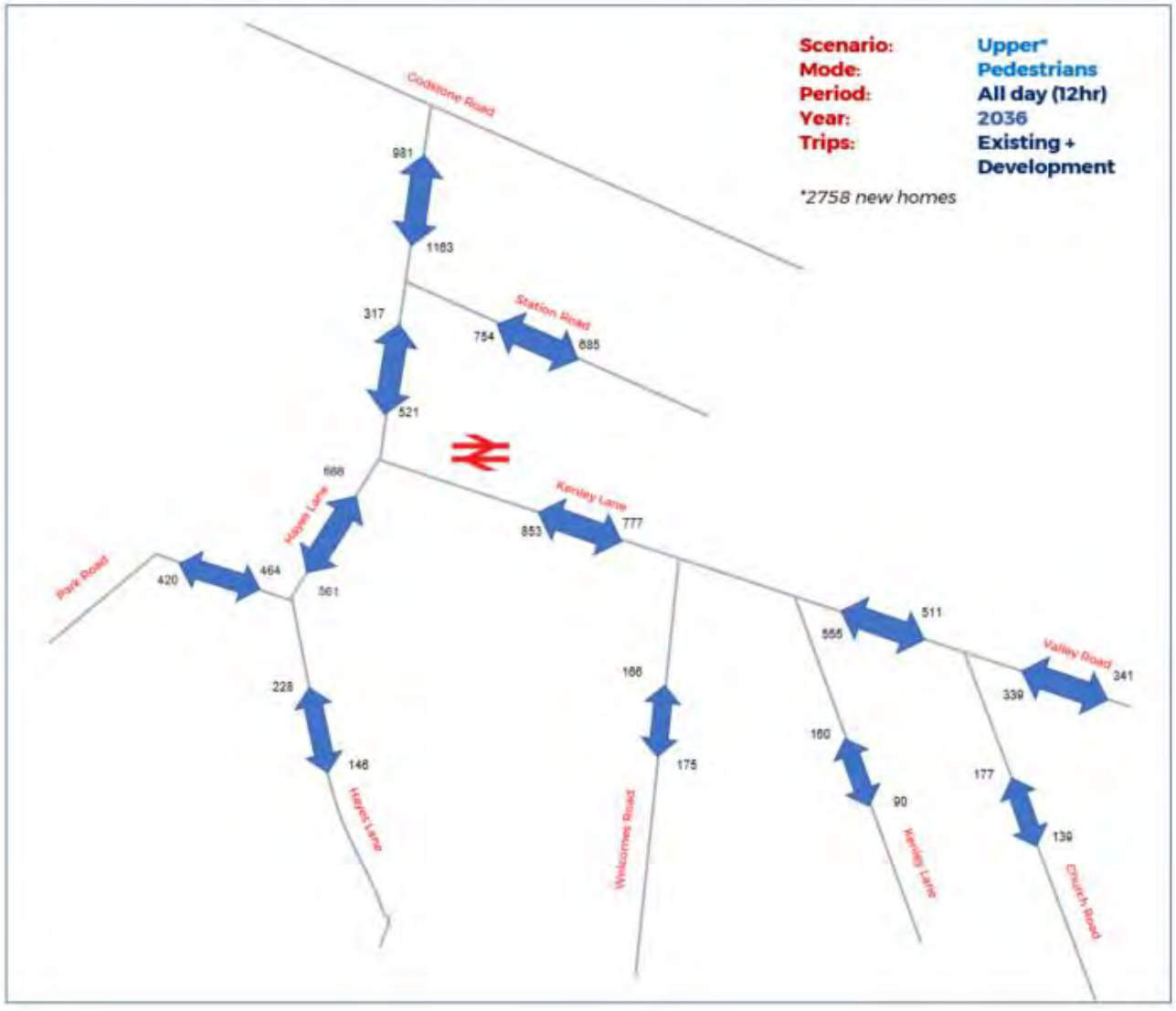
Significant increases in traffic are also expected on Welcomes Road, Kenley Lane and Church Road. In the AM peak over 100 additional vehicle trips are forecast on each road. Kenley Lane is a narrow single lane carriageway and may become congested with an increase.

Pedestrian Trips

In addition to estimating traffic growth in the Kenley FIZ associated with the development of housing, additional pedestrian trips have also been estimated. Flow diagrams, for the Upper and Lower Scenario, showing all day development-only pedestrian flows, and the percentage increase in pedestrian flows between 2019 and 2036, are shown in Appendix G.

Percentage increases in pedestrian flow across the FIZ range from 26%-32% in the Lower Scenario and 35%-45% in the Upper Scenario. Figure 6-5 and Figure 6-6 illustrate the estimated number of pedestrians in 2036 due to the additional development proposed in the Upper and Lower Scenario.

Figure 6-5 - 2036 Estimated Future Pedestrian Flows – All Day – 07:00-19:00 – Upper Scenario

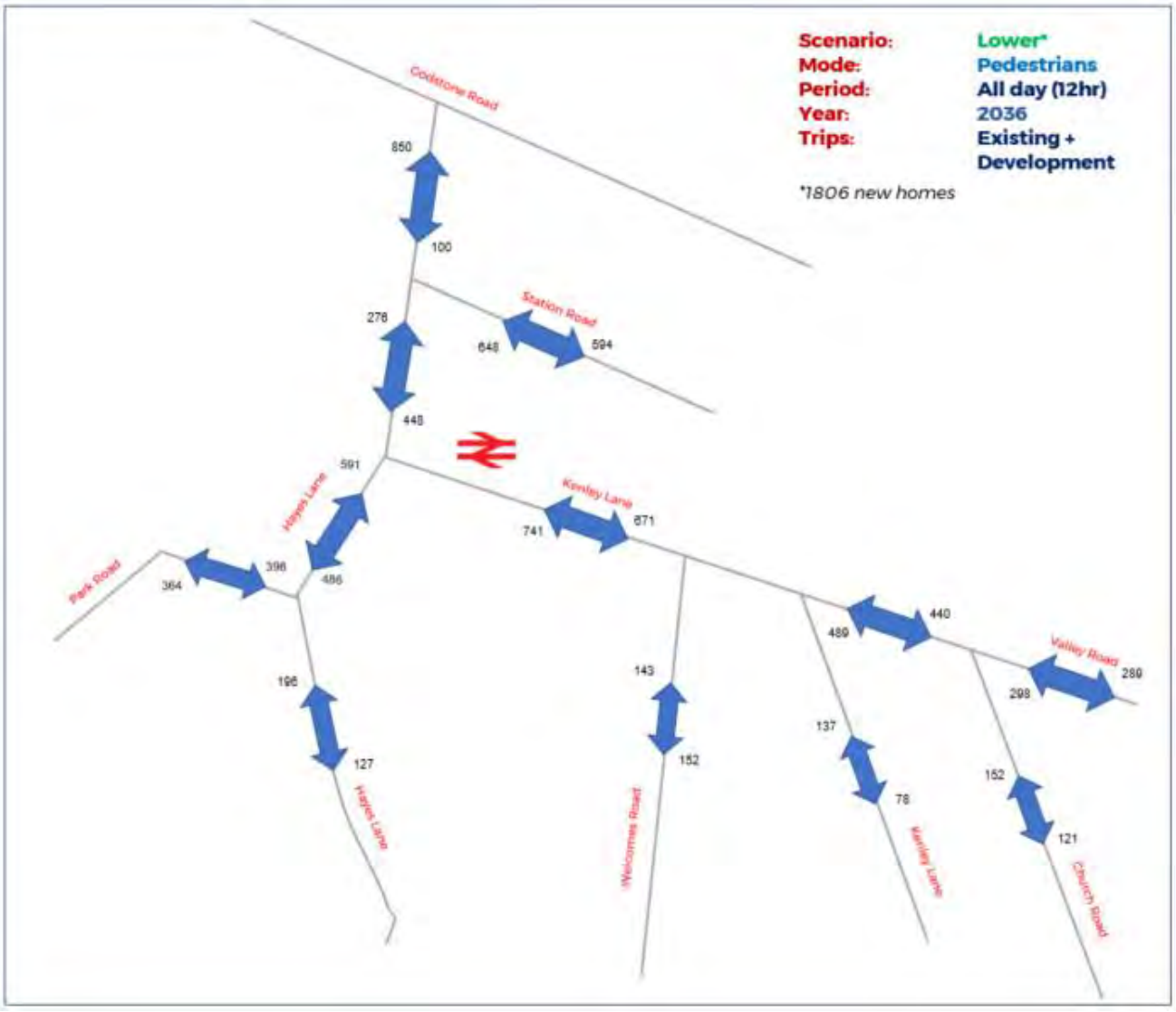


As Figure 6-5 shows, the estimated number of pedestrians walking up or down Hayes Lane south of Park Road in 2036 will be 374 pedestrians in the Upper Scenario, with 228 of these northbound and 146 southbound. In the Lower Scenario there will be 323 pedestrians with 196 travelling northbound and 127 southbound. The greater number of northbound pedestrians is reflective of the results of the 2019 surveys. Over a 12-hour period, this equates to an average of 31 and 27 pedestrians walking along Hayes Lane per hour throughout the day in the Upper and Lower

Scenario respectively. It is expected that the number of pedestrians using the link would be higher in certain hours, such as the AM peak period.

The proposed development would add a further 151 pedestrian trips in the Upper Scenario and 100 in the Lower Scenario along Hayes Lane, over the course of the 12-hour 'day', which although a relatively small number, would mean more pedestrians walking along the narrow carriageway with no footway provision. More pedestrians on this link would increase the risk of conflicts between pedestrians and vehicles due to the safety issues mentioned earlier in the report.

Figure 6-6 - 2036 Estimated Future Pedestrian Flows – All Day – 07:00-19:00 – Lower Scenario



As shown in Figure 6-6 over the 12-hour period, 2,144 pedestrians in the Upper Scenario will walk across the Hayes Lane overbridge, with new housing estimated to add a further 383 northbound and 478 southbound pedestrian trips over the overbridge over the day. The Lower Scenario would lead to an additional 567 additional pedestrian trips on this link. This significant increase, when considered alongside additional vehicles using the bridge, existing safety issues created by the narrowness of the footways on the overbridge are likely to be exacerbated, increasing the risk of a collision between a pedestrian and vehicle.

The development of new housing will also result in additional pedestrian trips to and from Godstone Road, given the local attractors situated on Godstone Road within the study area. This will result in additional use of the crossings over Hayes Lane south of the junction and over Godstone Road itself. As mentioned earlier in the chapter, housing growth will result in more vehicular turning manoeuvres at a junction which already experiences a high number of right turns, and increased number of turns here will increase risk to pedestrians using crossings identified as insufficient.

7 ISSUES IDENTIFICATION AND APPRAISAL

7.1 INTRODUCTION

This chapter summarises the issues identified from the site visits, desktop review, data analysis, healthy streets audit and road safety review. A multi-criteria assessment has been undertaken to identify how well streets in the study area perform against certain factors. The issues are summarised in Plan 2, the Issues Summary Plan, overleaf. Issues related specifically to parking were summarised previously in Plan 1.

Plan 2 - Issues Summary Plan

- Issues with school drop off activity
- High parking stress

Various problems at junction:
- Heavy right-turn movement into Hayes Lane (circa 300 Vev/hr in peaks) creates conflict and collisions. Minimal right-turn provision
- Lack of crossing point across main road and side road
- Strong desire lines across side road for access to school
- Queues block pedestrian path

Parking on eastern side of Hayes Lane south of Co-op car park exit blocks vehicles turning left out of car park.

- Relatively high speed and vehicle flow through section (circa 700 veh/hr in peaks)
- Narrow footways

- Very narrow footways over bridge
- Difficult in pedestrians passing on eastside footway
- High vehicle flow in this section
- High pedestrian flow (85 peds/hr in AM peak), including school children
- Vehicles overhang footway
- Difficult for two large vehicles to pass

- Relatively high speeds and vehicle flow through section (circa 500 veh/hr in peaks)

- Tight bend at junction
- Poor visibility for pedestrians and vehicles exiting Hayes Lane

- Narrow road (circa. 4m)
- Lack of footways
- Poor lighting
- Lack of runoff drainage
- Relatively high speed and flow of vehicles (circa. 200 veh/hr in peak)
- Blind bends
- Relatively busy route for pedestrians (circa. 50 peds/hr in peaks)
- Steep incline

- High vehicle speeds observed
- High vehicle flow (circa.1300 veh/hr in peaks)
- Poor provision for cyclists with discontinuous cycle lane
- Single red lines only around one side of junction with station road, and no double red lines on north side of Godstone Road between Hayes Lane and Station Road

- Lack of street trees to provide shade. improve look and feel of shopping area and emphasise change in character to modify driver behaviour

- Poor crossing provision at desire line to bus stop and path to Ribblesdown Secondary School
- Refuge island only, which is narrow
- Pinch point on northside footway by crossing

- Poor quality public realm around shopping area. Wide entrance into Co-op and lack of footway in front of parking at hotel

- Wide junction radii encourages higher vehicle speeds and provide poor pedestrian crossing amenity

Parking on double yellow lines on Waterbourne Way

- Station Road is narrow and has narrow footways

- Insufficient cycle parking both side of station: no secure access, on-street

Poor shade and shelter:
- Lack of street trees to provide shade and emphasise change in character to modify driver behaviour around station
- Lack of places to rest (e.g. benches)

- Wide junction radii and poor visibility makes crossing side road difficult and dangerous

- Areas of road prone to flooding (from Metis detailed modelling)

- Narrow road (circa. 3.75m)
- Lack of footways
- Relatively high speed
- Note: low vehicle and pedestrian flow (circa. 80 veh/r & 30 ped/hr in peaks)
- Steep incline & lack of places to rest

- Wide junction radii encourages higher vehicle speeds
- Poor pedestrian crossing amenity due to wide road, relatively high vehicle flow and and poor visibility

- Lack of bus routes serving southern part of study area (>400m walking distance from stops/route)

- Large vehicles were observed using Hayes Lane, despite warning signage and alternative route signage at junction with Hayes Lane

- Wide junction radii encouragse speeding and makes the side road more difficult and dangerous to cross

Little Rocks Road
Hayes Lane
Oaks Way
Codstone Road
Valley Road
Park Road
Hayes Lane
Welcomes Road
Kenley Lane
Abbots Lane

0 m 50 m 100 m 150 m

7.2 PERFORMANCE ASSESSMENT

Figure 7-1 identifies the links and junctions that are included in the assessment table.

Figure 7-1 – Issues Assessment Links and Junctions

Table 7-1 outlines the current performance of streets in the Kenley study area, where red indicates poor performance, amber is average performance and green is good performance. The grey cells are those for which the assessment is not relevant. The purpose of the assessment is to highlight those areas which require most attention and provides a framework to assess the impacts of the proposed solutions.

Table 7-1 – Issues Assessment Table

	Bus delays	Congestion	Air Quality	Pedestrian Environment	Pedestrian Crossing	Cycling Environment	Greening	Public Realm	Road Safety	Access to PT	Parking
Links											
Godstone Road											
Hayes Lane North											
Station Road											
Kenley Lane (north)											
Valley Road											
Church Road											
Kenley Lane (south)											
Welcomes Road											
Abbots Lane											
Hayes Lane (south)											
Park Road											
Oaks Way											
Junctions											
A-Godstone Rd/Hayes La											
B-Godstone Rd/Station Rd											
C-Kenley La/Hayes La											
D-Hayes La/Park Rd											
E-Kenley La/Valley Rd											

The text below refers to the issues by exception, only describing those which received a red performance rating.

Godstone Road

Godstone is a focus of activity in the area due to the local shops, hotel and nearby school and as it is where bus route 407 stops. Godstone Road also provides access to a path which connects to Riddlesdown Secondary School.

This section of the road functions poorly in terms of **crossing provision** across Godstone Road and across

Hayes Lane. Pedestrians often have to cross through queuing traffic on Hayes Lane to travel towards Harris Academy.

The quality of the **public realm** is poor and the amenity for pedestrians is substandard in terms of footway provision and surface quality. There is a lack of trees to provide shade and shelter and there is nowhere to sit and rest.

The section of Godstone Road between Hayes Lane and Station Road has experienced a relatively high number of **collisions**, one of which involved a pedestrian. From site observations, the vehicle speed appears to be high for the context and conditions and this may have contributed to the collisions.

The Godstone Road/ Hayes Lane junction is **heavily trafficked** with a high right turning movement into Hayes Lane. Given the high vehicle flow in general on Godstone Road and Hayes Lane, and the pedestrian activity in the area, this creates a risk of conflict with other vehicles and with pedestrians.

Godstone Road has a short section of advisory **cycle lane** by the shopping area but otherwise there are no cycle lanes or cycle priority measures. The mix and volume of vehicles is likely to mean that the road would probably not be deemed suitable for cyclists to share with traffic according to the TfL Cycle Route Quality Criteria.

Hayes Lane North

The northern section of Hayes Lane is between Godstone Road and Park Road. It has **narrow footways**, particularly on the east side over the rail bridge. Pedestrians often find it difficult to pass one another, especially if they have buggies or are in a wheelchair. The carriageway is narrow so larger vehicles occasionally overhang the footway. Larger vehicles may need to stop to pass one another.

The peak hour Pedestrian Comfort Level for the east side footway is level 'F' which is the lowest score in the A-F range. To bring the score back up to what TfL considers to be an acceptable level 'B+' the footway would need to almost double its current width at 1.9m

The **junction** with **Kenley Lane** is **difficult** to **cross** due to the wide kerb radii and poor visibility back to southbound vehicles travelling over the bridge. The crossing distance is long, despite the presence of a refuge island.

There are also issues with **parking** south of the junction with Godstone Road, with vehicles parking outside of bays on the eastern side, south of the exit from the Co-Op car park. This creates a road safety issue and is related to the Co-Op car park being overused.

Station Road

Station Road is very narrow with **poor footway provision**. On the north-south section leading to Godstone Road there are no footways and only single yellow lines. This means that vehicles park on the road which exacerbates the issues for pedestrians.

The **junction** with **Hayes Lane North** is **particularly wide**. The road is exit only from Godstone Road which means that a relatively high number of vehicles turn across the pedestrian path from Hayes Lane North. The issues are compounded by the fact the footway is narrow and has a pinch-point where the bridge ends at the southside of the junction.

Analysis of parking survey data suggested demand for parking on Station Road regularly exceeded capacity, leading to vehicles being **parked illegally** on the street.

Kenley Lane South

Kenley Lane is very narrow (circa 3.75m), is **very steep** and **does not have any footways**. It has a dense tree canopy cover which creates a dark and imposing environment for pedestrians. The vehicle flow is relatively light (circa. 80 vehs/hr in the peaks) and the road has a low pedestrian footfall (circa. 30 peds/hr in the peaks). There are few places to sit and rest, which is even more important given it is a long road on a steep hill. The junction with Valley Road is overly wide which encourages high vehicle speeds.

Abbots Lane

Along with Hayes Lane South and sections of several other streets in the study area, Abbots Lane suffers from a **lack of accessibility** to **bus stops** and **services**. Most of the road is more than 400m (5 minutes' walk) from the nearest bus route which is Route 434.

Hayes Lane South

Like Kenley Lane South, Hayes Lane South is also on a steep hill, **does not have footways** and has a dense tree canopy. However, Hayes Lane South has around **three times** the **volume of traffic** (circa. 200 veh/hr in the peaks) and **twice** the **number** of **pedestrians** (circa 50 peds/hr). Hayes Lane South has more bends than Kenley Lane which creates further issues. Site observations shows that vehicle queues often build up while one vehicle has to reverse to less the other pass. Vehicles speeds are too high for the context and conditions.

At the **junction** with **Park Road** the **visibility** is very **poor** for vehicles and vehicles exiting Hayes Lane and for pedestrians passing across the junction. Vehicle speeds around the bend on Park Road are relatively high.

8 IDENTIFIED IMPROVEMENTS AND APPRAISAL

8.1 INTRODUCTION

This chapter summarises the proposals that have been identified to address the issues discussed in Chapter 7. An indicative cost range has been identified for each of the measures together with timescales and a risk rating. The factors in the multi-criteria assessment have been used to assess the impact of the proposal. The impacts, costs, risks and timescales have helped in assigning priority levels to the measures.

8.2 IMPACT OF DEVELOPMENT

The solutions identified are required to address the existing issues, which are significant for certain areas of Kenley. Additional trips will exacerbate the issues; however the extent of the impact is heavily dependent on the specific area in which the development is located. For example, with appropriate parking controls in place (e.g. a Controlled Parking Zone), the area surrounding the station allows for high density and car free development due to the proximity to amenities and access to public transport. Whilst on certain streets, further from the station where there is a lack of pedestrian facilities, development may result in an increase in trips made by motorised vehicles.

8.3 KEY MEASURES

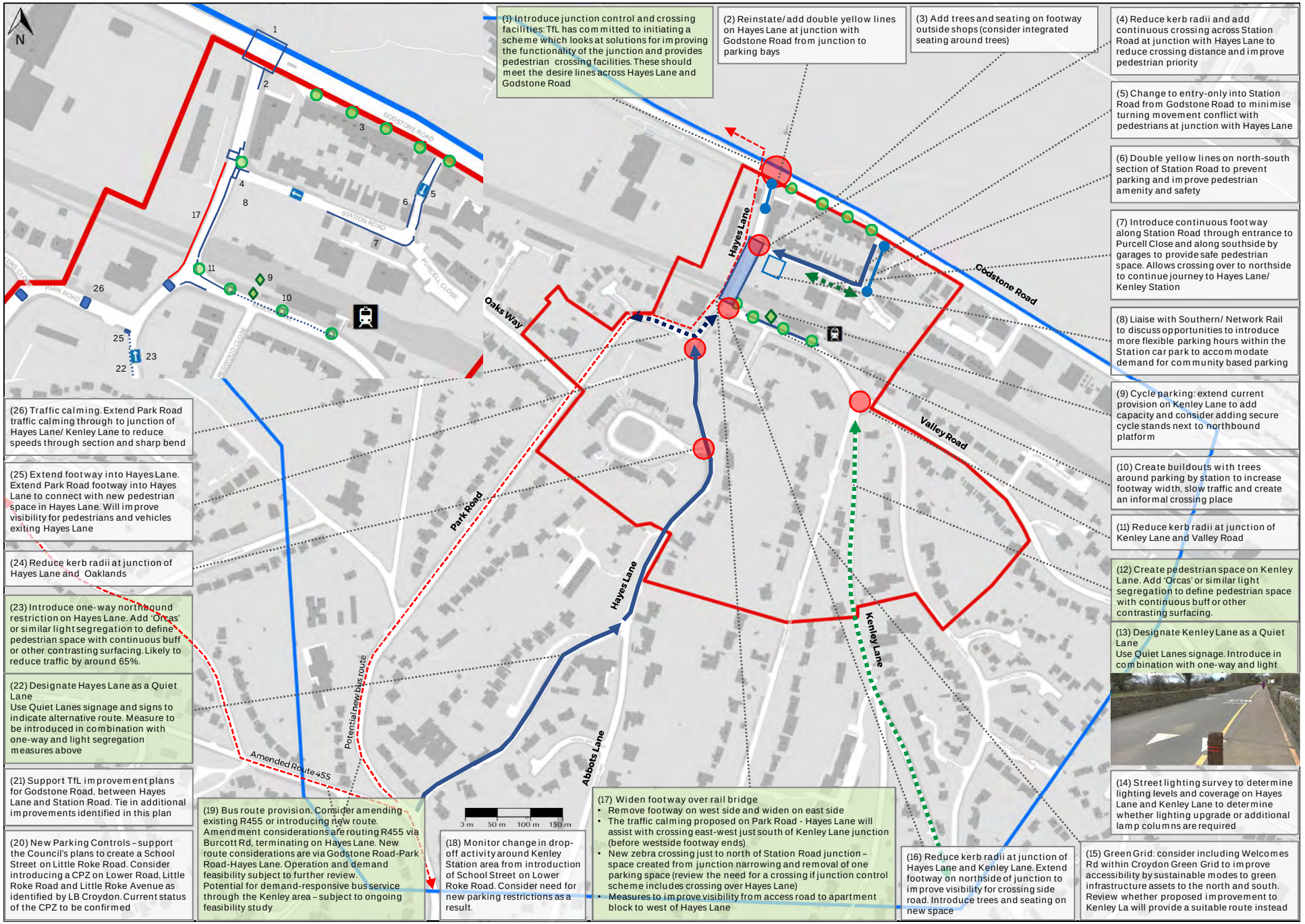
All measures are summarised overleaf in Figure 8, the Solutions Summary Plan, with commentary on some of the key measures provided in the following pages. Measures related specifically to parking are included in Plan 3.

The underlying principles of the key measures relate to reducing the volume of through traffic on unsuitable roads, promoting active travel, reducing unnecessary private vehicle trips and reducing the need to travel/reducing trip distance by improving accessibility to amenities and services.

In addition to the measures outlined in this section, WSP recommend that sustainable development is promoted.

For instance, the area surrounding the station allows for car free development due to the proximity to amenities and access to public transport. Whilst further from the station where there is a lack of public transport, LBC should ensure there are services and amenities in place to support any new development to reduce the need to travel.

Plan 3 - Solutions Summary Plan



Godstone Road: Junction Control

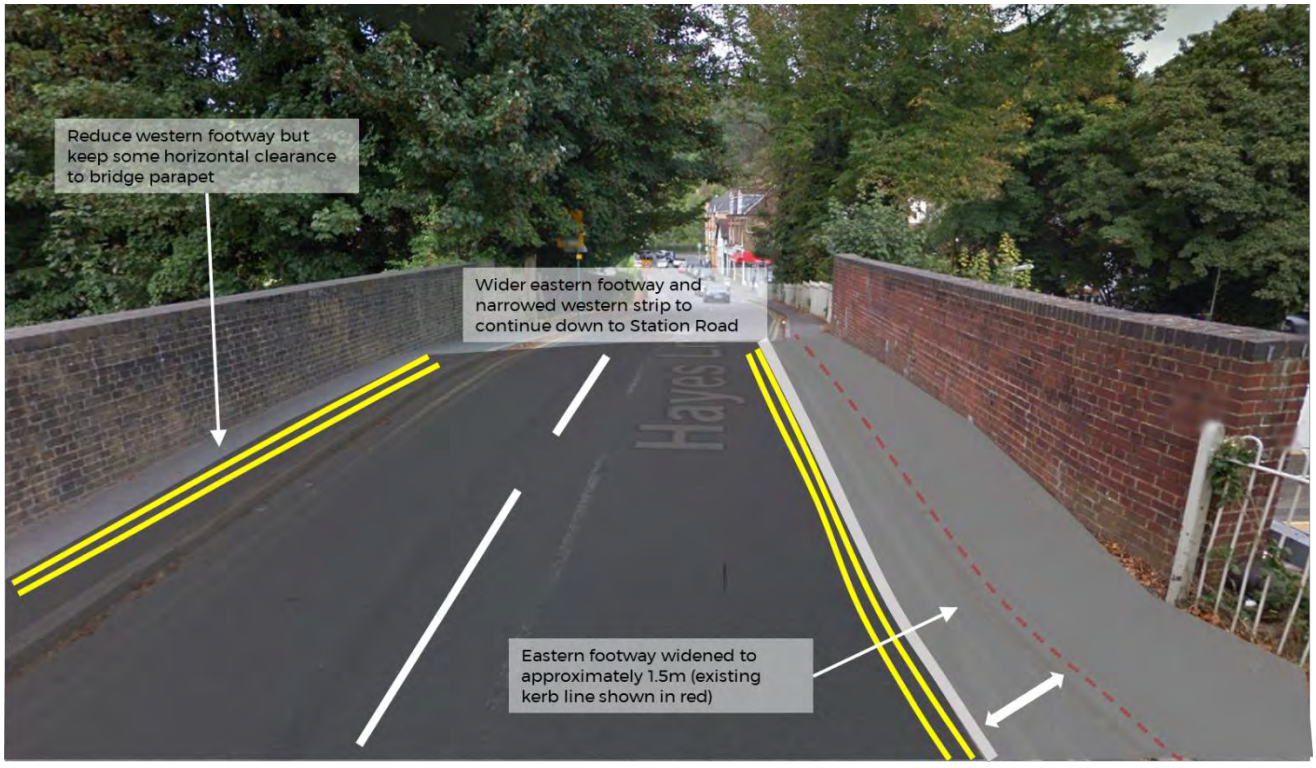
Some form of junction control is needed at Godstone Road to address the collision issues, problems with pedestrian crossing facilities and to better manage the high right turn movement into Hayes Lane.

Options include introducing junction signalisation. This will enable pedestrian crossings to be incorporated which will increase safety and reduce delays for pedestrians. The measure may be difficult to accommodate within the existing highway space, depending on the lane configuration require to achieve the acceptable junction capacity. As Godstone Road is a TfL road, permission will not be easy to obtain.

Hayes Lane: Footway Widening over Rail Bridge

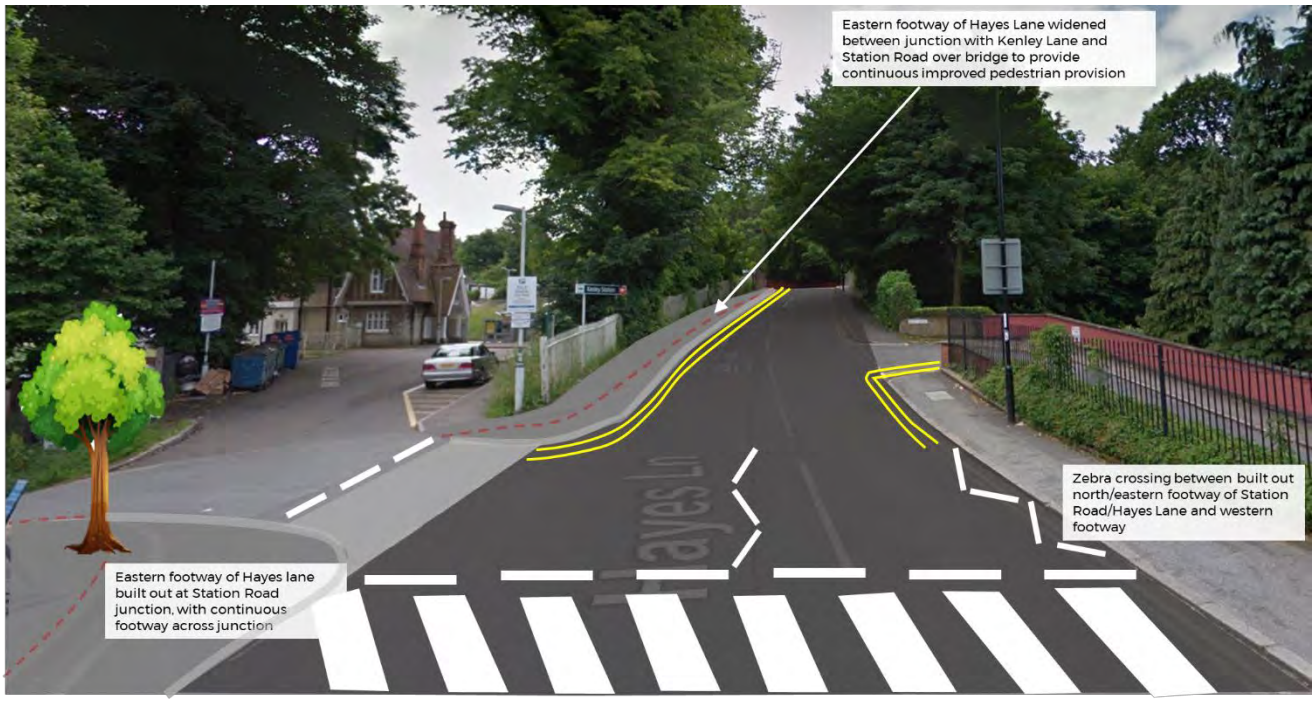
The proposal is based on removing the westside footway (albeit a narrow strip would remain for safety reasons) and widening the east side footway. The footway would need to be approximately 1.9m wide to give a Pedestrian Comfort Level of 'B+' which is what TfL considers to be an acceptable score for most situations. The downside is that pedestrians approaching from the south on the westside footway would need to cross to the east, and possibly back again if they were travelling to the school. Figure 8-1 shows a mock-up of a footway widening on Hayes Lane overbridge.

Figure 8-1 – Indicative Drawing of Footway Widening on Hayes Lane Overbridge



Therefore, crossing provision would need to be improved as part of this proposal. Measures for this include a new zebra crossing just north of Station Road (shown in Figure 8-2). Space would be created for this by narrowing the Station Road junction entry and removing one parking space. The need for this crossing would need to be reviewed if junction control was introduced at Godstone Road.

Figure 8-2 – Indicative Drawing of New Crossing Provision North of Hayes Lane Overbridge



The proposed traffic calming will help pedestrians to cross south of Kenley Lane, particularly if a raised table was introduced.

Several options were considered for providing adequate footway space. These are described below together with the reasons they were discounted.

- Signalisation with one-way traffic movement over bridge: likely to create unacceptable queues/ technical constraints installing on a bridge/ very costly.
- Narrowing, with shuttle working prioritisation over bridge: likely to create unacceptable queues/ possible road safety issues as humpback bridge so poor visibility
- One-way movement only permitted: unacceptable additional journey time for diversionary routes/ knock on impact of additional traffic on diversionary routes
- Using the pedestrian footbridge over the platforms within Kenley Station: this does not provide step-free access, is indirect and, whilst there are no ticket barriers at present, these could be introduced in future and if so would only permit access for station users.

Another option was considered which is to provide a new pedestrian bridge alongside the existing rail bridge. This is likely to be high cost due to the large bridge span and challenging topography, possibly in the order of £1m-£3m based on comparable schemes. However, an estimate of cost and the feasibility of constructing the bridge would be subject to a more detailed study.

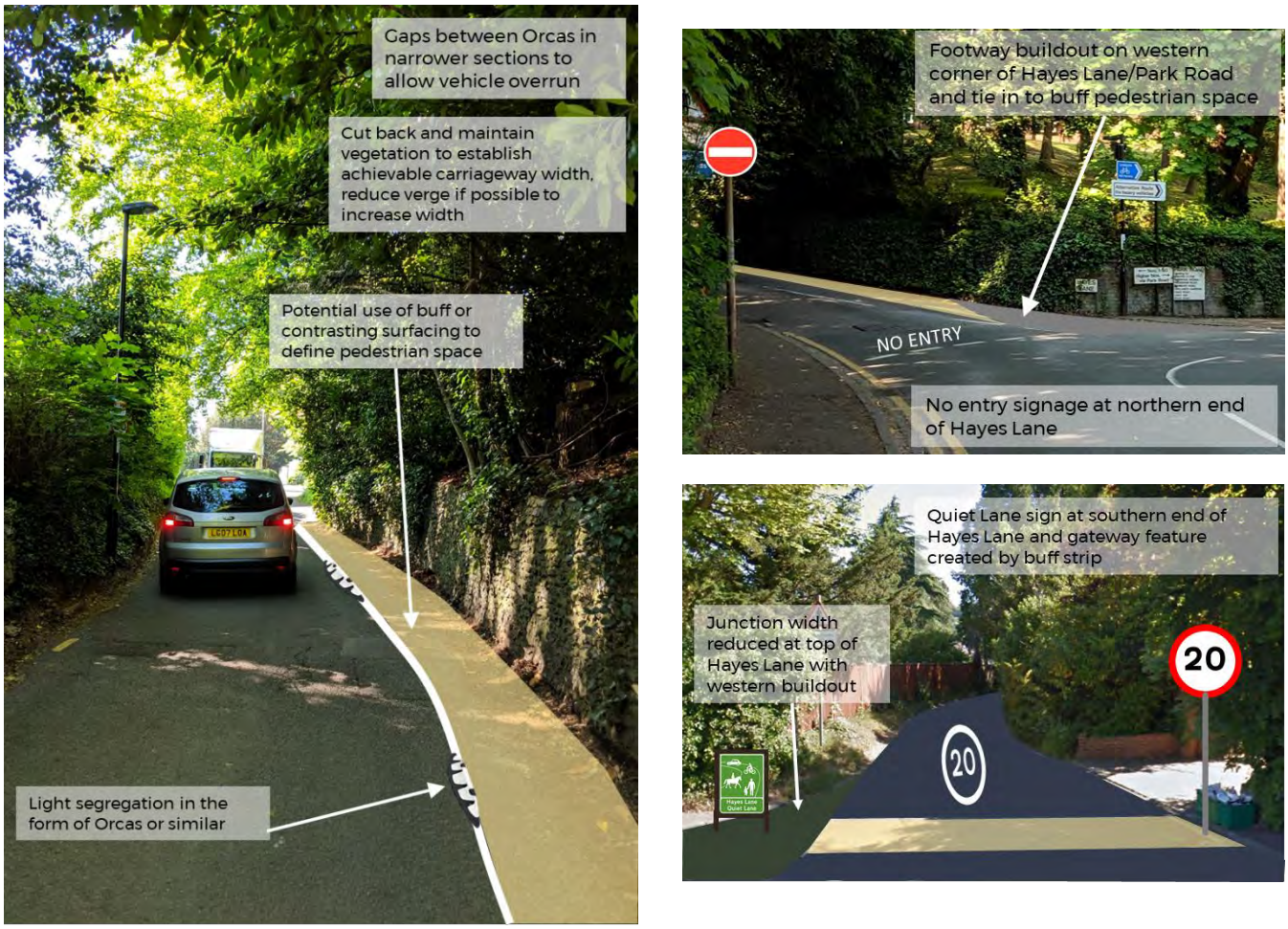
Hayes Lane South and Kenley Lane South: New Pedestrian Space and Quiet Lanes

Pedestrian amenity and safety on both roads is poor. However, the roads are very constrained in term so of their width and incline. This limits options for improvement. Hayes Lane is busier with traffic and pedestrians than Kenley Lane so a slightly different approach is needed.

For both roads it is proposed to create light segregation using 'Orcas' or similar features and where possible new segregated footways. Light segregation will create a safe pedestrian space just over a metre wide. This space can be enhanced by adding coloured surfacing. Gaps in the segregation

would be needed to provide passing places. An idea of how these measures would look is presented in Figure 8-3. This is indicative only and is subject to change following further feasibility work.

Figure 8-3 – Indicative Quiet Lane Features on Hayes Lane



Quiet Lanes would be created to reinforce the message to drivers that driving behaviour should be modified in these streets and to deter larger vehicles and through traffic. This approach was pioneered in Jersey and has been used on many rural roads in the UK. The legislation was introduced in 2006 as part of the Home Zone legislation. Quiet Lane signs would be installed at the entry and exit points.

On Hayes Lane South we are proposing to create a one-way restriction which allows northbound traffic only. This is likely to reduce the traffic volume by around 65%. Introducing a southbound one-way is likely to lead to a reduction in traffic speed because vehicles will be going uphill. However, the issues with pollution and noise from motor vehicles will be worst with a southbound one-way, therefore on balance the northbound one-way option is preferred. Creating one-way sections of street may enable segregated footways to be introduced instead of light segregation. The impact of the quiet-lane measure on traffic speeds should be monitored.

Continuous Footway along Station Road

Station Road is currently narrow, with narrow footway along the northern side and intermittent footway along the southern.

One measure would be to introduce a continuous footway along Station Road through the entrance to Purcell Close and along the southern side by the garages, which will create a safe pedestrian space. This will also make it easier for a pedestrian to cross over to the northern side to continue their journey to Hayes Lane or Kenley Station. An indicative mock-up of what the continuous footway could look like is shown in Figure 8-4.

Figure 8-4 – Indicative Continuous Footway along Station Road

Bus Services in the Kenley Area

There are two primary bus routes serving the Kenley FIZ, which are routes 407 and 434. A third route, the 455, is situated near Kenley but a considerable distance from the FIZ. As Figure 5-6 shows, only part of the study area is within 400m of the nearest stop/route. The walking distance does not consider the steep incline to the south which may add extra walking time, particularly for less able pedestrians. The occupancy of all bus services in the Kenley area is low.

As part of a review of bus services in the borough, TfL has looked at the Kenley area. The study identified that there may be potential for a new route along Godstone Road-Park Road-Hayes Lane, and scope for re-routing R434 along Higher Drive and Cullesden Road. This would significantly increase the catchment and provide access to the southern section of Hayes Lane, near to Hayes Primary School, which currently has poor public transport access. With an increase in demand from development the services may be more viable, particularly if development in nearby parts of the borough (e.g. Purley) generates further demand for the route/s.

The feasibility of the routes would be subject to a service operation and demand assessment. A route test has been undertaken and indicated that the new sections of the route are wide enough to accommodate buses subject to slight changes to the routing.

London Borough of Croydon is undertaking a review of the feasibility and business case for a demand responsive bus service in the Kenley area. This has the potential to serve areas of Kenley

that cannot be served by a new or rerouted TfL service. An assessment of the physical constraints and turnaround space will also need to be undertaken for a demand responsive service.

8.4 PERFORMANCE ASSESSMENT

Table 8-1 identifies the expected impact of the proposals for the main roads and junctions within the study area.

Table 8-1 – Impact Assessment and Prioritisation of Proposals

Proposed Measure	Assessment criteria: Benefit/disbenefit (-2 to +2)												Priority (1-5, 1=high)	Timescales	Risks			
	Bus delays	Vehicle journey time	Air Quality	Pedestrian Environment	Pedestrian Crossing	Cycling Environment	Greening	Public Realm	Road Safety	Access to PT	Parking	Total Score			Political acceptability	Public acceptability	Ext. Stakeholder Acceptability	Technical feasibility
Junction Improvements																		
Introduce junction control at Godstone Road/Hayes Lane junction	-1	-1		2	2	1			2			5	1	Long Term				
Reduce kerb radii at Kenley Lane/Hayes Lane junction				2	2	1	1	1	2			9	2	Medium Term				
Build out footway at Hayes Lane/Park Road junction					1	1			2			4	2	Medium Term				
Reduce kerb radii at Kenley Lane/Valley Road junction					1	1			1			3	2	Medium Term				
Reduce kerb radii at Hayes Lane/Station Road junction				2	2	2	1	1	1		-1	8	1	Medium Term				
Reduce kerb radii at Hayes Lane/Oaklands junction					2	1			1			4	4	Medium Term				
Pedestrian Improvements																		
Zebra crossing on Godstone Road	-1	-1			2				2	2		4	1	Medium Term				
Continuous footway along Station Road				2	2							4	3	Medium Term				
Public Realm Improvements																		
Trees and Seating on Godstone Road			-1	1			2					2	3	Medium Term				
Build outs with new trees on northern side of Kenley Lane			1	1	1		2	1			-1	5	4	Medium Term				
Public Transport																		
Consider bus route provision along Abbots Lane			1							2		3	2	TBC				
Traffic Calming																		
Raised tables on Godstone Road					1	1			2			4	3	Medium Term				
Extend traffic calming along Park Road					1	1			2			4	3	Medium Term				
Create pedestrian space and Quiet Lane on Hayes Lane and make one-way		-1	1	2	1	1			2			6	1	Medium Term				
Create pedestrian space and Quiet Lane on Kenley Lane				2	1	1			2			6	1	Medium Term				
Traffic Management, Signing and Lining																		
Reinstate double yellow lines on Hayes Lane north		1	1	1		1			1			5	3	Quick Win				
Double yellow lines on Station Road		1		2	1	1			1		-1	5	3	Medium Term				
Changing Station Road to entry-only from Godstone Road					2	1			1			4	1	Medium Term				
Other Improvements																		
Improvements to cycle parking on Kenley Lane						1						1	4	Quick Win				
Widen footway over bridge (and new crossings)		1	1	2	2	1			2			9	1	Long Term				
New pedestrian footbridge over railway line			1	2	2				2			7	3	Long Term				

Benefit/disbenefit		Indicative Cost	Timescales
2	Major benefit	£0-10k	Quick Win
1	Minor benefit	£10k - £50k	Medium Term
0	Neutral	£50k - £100k	Long Term
-1	Minor disbenefit	£100k - £500k	
-2	Major disbenefit	£500k+	

Risks	Acceptance*	Tech Deliverability
	Strong support	Very easy
	Some support	Easy
	Neutral	Average
	Some opposition	Hard
	Strong opposition	Very hard

**Likely acceptance rather than actual*

9 CONCLUSION

As reported in the study, there are existing issues within Kenley, which particularly affect pedestrians or reduce the potential for an increase in walking trips. Solutions proposed in the study are required to address these existing issues, which are significant for certain areas of Kenley.

Additional trips will exacerbate the existing issues in Kenley. The Sensitivity Assessment concluded that the increase in housing is likely to cause significant issues, especially on Hayes Lane, due to the increase of pedestrian-vehicle interactions brought about by additional traffic and pedestrians using Hayes Lane, which has no consistent footway along its length. This increase in interactions would also increase the risk of collisions, a risk present with current levels of traffic and pedestrians.

It must be noted that the impacts are heavily dependent on the type and location of the development. For instance, the area surrounding the station allows for high density and car free development due to the proximity to amenities and access to public transport. Whilst on certain streets further from the station where there are a lack of pedestrian facilities, development is likely to result in an increase in trips made by car.

LBC should promote sustainable development within Kenley to minimise the impact of this growth. A key focus should be on the reducing the need to travel by car; this can be achieved by ensuring there are services and amenities in place to support new development and enhancing and promoting the use of infrastructure for walking, cycling and using public transport. Section 106 contributions can now be pooled and used to fund these improvements in order to mitigate the exacerbation of existing issues caused by new development.

Due to the varying transport provision throughout Kenley, tailored transport solutions have been proposed for each area. The solutions include building out footways, quiet lanes and introducing new bus routes. Further work is required to assess the potential impacts of the proposed solutions.

10 RECOMMENDATIONS AND NEXT STEPS

This Transport Study aimed to report on the existing transport-related issues in Kenley to identify what measures can be introduced to address these and to contextualise where improvements/ infrastructure would be required alongside of the planned intensification and growth of housing in the area. It should be noted that the increase in traffic flow on the highway junctions has not yet been modelled therefore the impacts and potential mitigation has not been quantified.

There is a need to implement recommended improvements as early as possible to improve existing conditions and accommodate growth already permitted, however funding for implementation is still to be identified and secured.

At this point in time, it is unknown whether the proposed solutions are adequate to accommodate the anticipated growth in Kenley. Further work should be undertaken to assess the impact of the proposed solutions.

WSP recommends that, due to the high car ownership levels within the Kenley area, LBC should focus on promoting active travel to encourage mode shift and to place emphasis on the need for sustainable development.

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