Burgess Hill Public Transport Strategy

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Introduction

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1 Introduction

West Sussex County Council (WSCC) have appointed AECOM to prepare a Public Transport Strategy (PTS) to provide a vision for how Burgess Hill can be best served by public transport and how the proposed developments across the town can contribute towards sustainable transportation.

This report outlines the analysis undertaken to provide a first principles evidence base for establishing the existing baseline and future conditions for public transport in Burgess Hill. An understanding of the baseline and future needs has helped to understand the opportunities and challenges facing Burgess Hill. Best practice research has also been considered alongside the vision and objectives of the Burgess Hill Town Wide Strategy (TWS) and policy contained within the emerging District Plan to help determine the objectives of the PTS.

Based upon experience, this PTS will cover a 15-20 year period and aim to set a clear and tangible path to delivering the sustainable public transport vision defined for Burgess Hill within the TWS. It is developed with the objectives of the Burgess Hill TWS, District Plan and West Sussex Transport Plan in mind. Using this evidence to establish target markets for public transport in Burgess Hill, public transport scenarios have been developed and assessed against a set of criteria which aim to meet the PTS objectives. The scenarios provide concept-level strategic guidance for public transport provision in the town, identifying key linkages, corridor, infrastructure and funding requirements.

Methodology

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2 Methodology

To establish a baseline understanding of the current public transport conditions in the town, background policy documents were reviewed (Section 3), an analysis of 2011 Census Travel to Work data was undertaken to determine travel patterns in and out of Burgess Hill, including mode share (Section 4) and a review of existing services provided.

The TRICS trip generation database was interrogated to determine the potential public transport demand of future residential and employment developments across the town (Section 4). This assessment allowed us to determine how transport provision will change as a result of and be integrated with planned future strategic development whilst identifying the most appropriate mode of public transport to be used.

A desktop study of international, European and national UK research has been included (Section 5) to help understand the key challenges facing other similar small towns like Burgess Hill, and the value for money that small public transport interventions can provide.

Section 6 takes the evidence gathered from the previous sections to determine the objectives, criteria and public transport scenarios or concept options. The scenarios are then evaluated against the criteria identified in Section 7.

Section 8 prioritises the measures to take the public transport strategy forward. Key conclusions from the study are presented in Section 9 with suggestions for further work to be undertaken.

Further, the strategy has taken a collaborative approach in considering input from key stakeholders as well as work currently being considered within Burgess Hill. Stakeholders were engaged in the generation of issues, challenges, and opportunities for the PTS, including workshops with:

- West Sussex County Council;
- Metro Bus, a local bus operator; and
- The Northern Arc and town centre developers.

Policy Background

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3 Policy Background

3.1 Introduction

This section provides a review of planning policy at a regional and local level that has been considered in the preparation of the TPS.

3.2 West Sussex Transport Plan

At a County level transport policy and planned improvements to the transport network are outlined within a Local Transport Plan (LTP). Within the 2011 – 2026 West Sussex Transport Plan (WSTP) Burgess Hill is identified as part of an economic sub area referred to as the Gatwick Diamond, consisting of the A23 corridor from Redhill (in Surrey) to Brighton, and including the West Sussex towns of Crawley, Horsham, East Grinstead, Haywards Heath and Burgess Hill. Together, these areas play an important role in supporting the national and regional economy. The WSTP's vision for the Gatwick Diamond is for an area with sustainable economic prosperity, good access between and into the main towns and attractions, but where access by car into the towns is progressively managed to reduce congestion.

There are specific transport related issues which face the Gatwick Diamond in meeting its aspirations for the future:

- Poor rail connectivity between Gatwick and the Thames Valley and areas north of London, and to the east and west;
- Growing congestion on the strategic road network exacerbating unreliability in journey times and affecting the competitiveness and quality of life of the area; and
- Further road traffic leading to increased noise and emissions with resulting health and environmental issues.

The WSTP's aims for the Gatwick Diamond include:

- An enhanced rail service along the Brighton Main Line, including greater utilisation and enhancement of the Arun Valley Line, to take advantage of major investment at Gatwick Station and the Thameslink programme;
- Focus on public transport access to Gatwick Airport, particularly through bus use and rail links;
- Public transport interchange improvements at Crawley, Burgess Hill, East Grinstead, Gatwick Airport, Haywards Heath, Horsham and Three Bridges stations;
- Good access into vibrant town and neighbourhood centres and to railway stations through effective parking restrictions and enforcement activities; and
- Delivery of strategic development areas and associated infrastructure to ensure that the impacts of development are mitigated.

Other aims for Mid Sussex and Burgess Hill identified in the WSTP include:

- Managing on-street parking in Burgess Hill and Haywards Heath; potentially through the introduction of controlled parking zones in the town centres and near to the railway stations;
- Encouraging sustainable travel by improving the existing cycle and pedestrian network through improved signage, connecting routes where appropriate and repairing and maintaining surfaces, particularly on routes identified through the Burgess Hill Green Circle Network;

- Continuing to work with bus operators to improve the capacity and quality of the bus fleet and to improve the way the services are marketed;
- Seeking to reduce traffic congestion by providing a convenient, comfortable, safe and flexible public transport system that offers a real alternative to the private car and encourages sustainable movement, thereby reducing energy consumption and pollution; and
- Working with rail partners to explore opportunities to improve stations and rail service provision throughout the District. This includes redevelopment of Haywards Heath and Burgess Hill railway stations, improvements to station access through the Southern station travel plan project, integration with other modes of transport, and opportunities to improve services through the Thameslink programme.

Overall, the transport network needs to be able to accommodate long and short distance journeys, and through-traffic. Accommodating additional travel and encouraging a switch to sustainable modes will, therefore, be important in delivering growth in Burgess Hill.

3.3 Mid Sussex District Plan

The District Plan is currently in preparation by Mid Sussex District Council (MSDC) and once adopted will be the main planning document used when considering planning applications across the District. It will cover the period to 2031 and will include the strategy, proposed level of development and a number of planning policies. A pre-submission draft of the plan was consulted upon between November 2015 and January 2016 and it is proposed that following a brief period of amendments the Plan will be submitted to government for approval with adoption proposed later in 2016.

The District Plan identifies Burgess Hill under Policy DP7 as a centre for growth within the District where additional housing could be located subject to provision of adequate infrastructure to support it. All development within Burgess Hill is required to support the following general principles that are considered relevant to this study:

- Be designed in a way that integrates it into the existing town providing connectivity with all relevant services and facilities;
- Contribute towards a better, more accessible town centre with a greater range of shops, an expansion of retail floorspace, leisure uses and public realm improvements including a new public square;
- Provide additional, high quality employment opportunities including suitably located Business Park developments accessible by public transport;
- Improve public transport, walking and cycling infrastructure and access to Burgess Hill and Wivelsfield railway stations, including the provision, or contributions to enhancing, of transport interchanges;
- Provide necessary transport improvements that take account of the wider impact of the development on the surrounding area;
- Provide highway improvements in and around Burgess Hill including addressing the limitations of the A2300 link road and its junction with the A23 and east-west traffic movements across Burgess Hill and, where necessary, improvements across the highway authority boundary in East Sussex;
- Provide new and improved community, retail, cultural, educational, health, recreation, play and other facilities to create services and places that help to form strong local communities and encourage healthy lifestyles;

- Provide new and/or improved and well connected sports, recreation and open space in and around Burgess Hill, including the continuation of the existing 'Green Circle' of linked areas of informal open space around the town along with its associated network of multi-functional paths, the Green Circle network, and links into the town centre;
- Support the delivery of a multi-functional route between Burgess Hill and Haywards Heath;
- Provide a Centre for Community Sport in the vicinity of the Triangle Leisure Centre;

Policy DP8 outlines the strategic allocation of development to the east of Burgess Hill at King's Way. Development of the King's Way site is required to provide:

- Up to 480 new homes;
- High quality and accessible informal public open space;
- A local hub serving the site and the wider community;
- Provide infrastructure, as set out in the Burgess Hill Town Wide Strategy (TWS) and identified in technical assessments, implemented before or alongside development to an agreed programme of delivery. This will include financial contributions to the provision of education facilities for all ages;
- Address the limitations of east-west traffic movements across Burgess Hill; and
- Consider other developments in the vicinity to ensure complementary provision of infrastructure and facilities.

Policy DP9 outlines the strategic allocation of development to the north and north-west of Burgess Hill. Development in this location is required to provide:

- Approximately 3,500 additional homes and new neighbourhood centres, including retail, education, health, employment, leisure, recreation and community uses sufficient to meet the day to day needs of the whole of the development and located as far as possible so at least one new neighbourhood centre is within 10 minutes' walk of all new homes;
- 30 hectares of land for use as a high quality business park south of the A2300 and served by public transport;
- Two new primary schools (including co-location of nursery provision and community use facilities as appropriate) and a new secondary school campus, in each case in locations well connected with residential development and neighbourhood centres;
- A Centre for Community Sport in the vicinity of the Triangle Leisure Centre and St Paul's Catholic College;
- Provide infrastructure, as set out in the Council's Infrastructure Delivery Plan, the TWS and identified in technical assessments, implemented before or alongside development to an agreed programme of delivery; and
- Deliver sustainable transport measures and other infrastructure requirements identified in technical assessments of transport impact, including measures to mitigate impacts upon the local and Strategic Road Network in Burgess Hill and the surrounding area.

Policy DP19 (Transport) seeks to deliver the necessary transport infrastructure required to support growth in the District. The Policy identifies the Mid Sussex Transport Study as being prepared to identify how growth could

reasonable be accommodated on the highway network. The Policy states that development will need to support the objectives of the WSTP and will only be permitted where it:

- It is sustainably located to minimise the need for travel;
- It facilitates and promotes the increased use of alternative means of transport to the private car, such as the provision of, and access to, safe and convenient routes for walking, cycling and public transport, and includes suitable facilities for secure and safe cycle parking;
- It does not cause a severe cumulative impact in terms of road safety and increased traffic congestion particularly where such impacts harm the special qualities of the South Downs National Park;
- Is designed to adoptable standards, or other standards as agreed by the Local Planning Authority, including road widths and size of garages;
- It provides adequate car parking for the proposed development in accordance with parking standards as agreed by the local planning authority or in accordance with the relevant neighbourhood plan. Residential development in and close to the town centres which are well served by public transport will normally be expected to make lower parking provision;
- It is supported by a Transport Assessment/Statement and a Travel Plan that is effective and demonstrably deliverable including setting out how schemes will be funded; and
- It provides appropriate mitigation to support new development on the local and Strategic Road Network, , including the transport network outside of the district, secured where necessary through appropriate legal agreements.

3.4 Mid Sussex Infrastructure Delivery Plan

MSDC is currently in the process of preparing an Infrastructure Delivery Plan (IDP) for the District that will support the adopted District Plan. The draft IDP (June 2015) has been used to inform the development of this study and similarly this study will help inform the final version of the IDP.

3.5 Mid Sussex Transport Study

MSDC have prepared a Transport Study to understand the highway impacts of planned growth across the District and the mitigation required to accommodate it. The latest study, the Stage 3 Interim Study, reports on the likely transport impacts of the draft District Plan. Mitigation identified within the Stage 3 Interim Study resulting from development in Burgess Hill has been referenced in this study where appropriate.

3.6 Burgess Hill Town Wide Strategy

In 2011 Burgess Hill Town Council published their TWS. The TWS sets out the following vision and objectives for the Town over the 20 year period to 2031:

Vision

- a fully sustainable 21st century town focussed around a high quality, vibrant and accessible town centre;
- a town that's existing and future population is supported by the necessary community facilities, employment opportunities and access to green open space; and
- a town that functions efficiently and is underpinned by a state of the art transport network and modern supporting infrastructure.

Objectives

- a better town centre with a greater range of shops and a more attractive pedestrian environment;
- improved public transport, walking and cycling links as well as better roads;
- new and improved community and cultural facilities;
- additional high quality and suitably located business park development; and
- new, improved and well connected sports, recreation and open space in and around Burgess Hill.

To facilitate the vision and objectives two main growth locations were identified in the Town where housing was considered to be appropriate:

- Land East of Kings Way – A residential development site located to the east of the town between Kings Way and the B2112. The TWS identifies this area for the delivery of up to 500 dwellings.
- The Northern Sector – The largest growth location identified in Burgess Hill forms an arc around the northern periphery of the town stretching from Gatehouse Lane in the northwest to Maple Drive in the northeast. The Northern Sector (or Arc as it has become known) has been identified for a mixture of residential and employment uses with a new northern link road provided through the site. The TWS identifies this area for the delivery of up to 3500 homes, a new local centre, education facilities including a secondary school and two primary schools and a link road connecting the A2300 to Isaac's Lane.

As part of the two main growth locations identified in the TWS the following applications have come forwards since the TWS was published in 2011 and been approved by Mid Sussex District Council as planning authority:

- Land East of Kings Way – An outline planning consent has been granted for 480 dwellings on this site;
- Fairbridge Way – A residential development site located to the north of the town centre to be accessed via Fairbridge Way and forming part of the TWS Northern Sector. An outline planning consent has been granted for 325 dwellings on the site; and
- The Hub employment site – A site to the west of the town located on land to the south of the A2300 and east of Cuckfield Road. This site forms part of the Northern Sector and is expected to accommodate up to 50,000m2 of B1, B2 and B8 employment land uses. Planning permission was granted in November 2015.

3.7 Burgess Hill Neighbourhood Plan

Neighbourhood Plans establish general planning policies for the development and use of land in a neighbourhood area. A Neighbourhood Plan has been developed by Burgess Hill Town Council with help and comments from stakeholders, residents, community groups and the business community. The Plan provides clarity to communities,

landowners and other interested parties on how the town will improve and transform for the benefit of the existing and future population.

In January 2015, it was sent to MSDC who checked it for legal compliance and conformity with national and local policies. MSDC then carried out a further "pre-examination" public consultation which ran from 12th February 2015 to 26th March 2015. The Plan was subsequently made by MSDC in October 2015.

The Plan was subsequently made by Mid Sussex District Council in October 2015 and forms part of the development plan.

The aims of the Plan are:

- To deliver improved civic and community facilities;
- To protect and enhance existing open spaces; and,
- To improve the residential environment.

The purpose of the Neighbourhood Plan is to focus on community development and to provide the framework to deliver benefits for residents, businesses and visitors. Funding for new community facilities and improvements are likely to come from new housing. The town's housing needs are contained within the strategic sites identified in the TWS.

Several Core Objectives of the plan are related to transport:

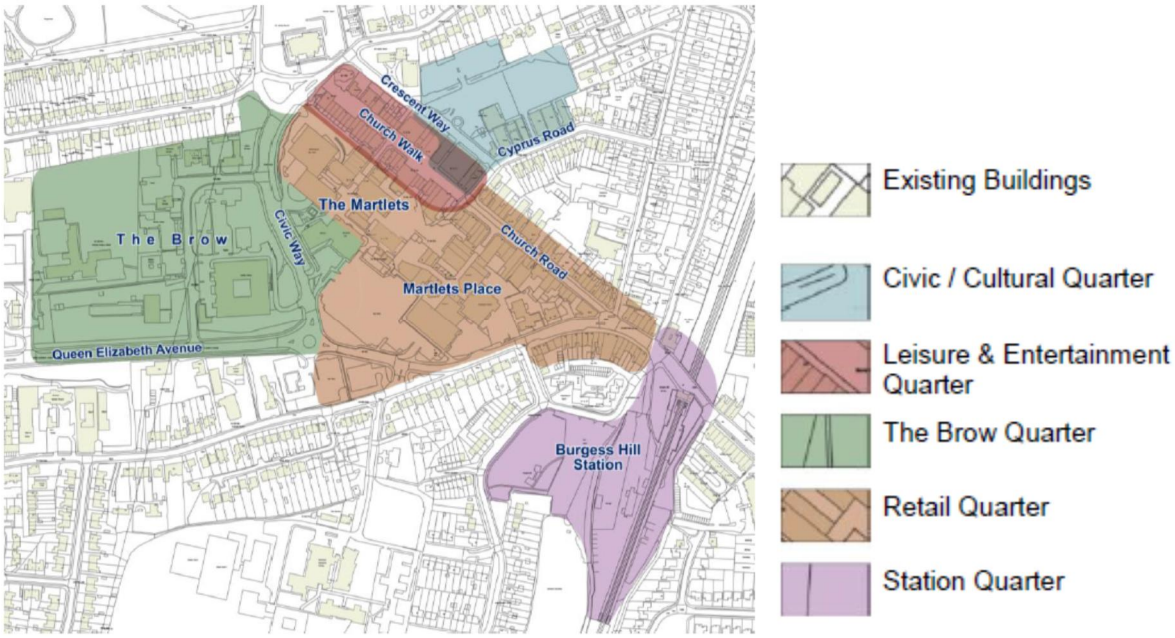
- CO 2. To promote Burgess Hill as a place for businesses to locate to and where existing business can thrive and to enable local people to live and work within the town;
- CO 3. Ensure that all sections of the community in Burgess Hill have appropriate access to community/medical services including retail, formal and informal recreational space and leisure facilities;
- CO 7. Promote the vitality and vibrancy of Burgess Hill town centre and enhance the accessibility and public realm within the town centre;
- CO 9. Ensure adequate parking is provided for all new development; and
- CO10 states that the Neighbourhood Plan will promote use of public/community transport and walking and cycling around the town.

The Neighbourhood Plan also sets out a number of policies for various areas of the town. Burgess Hill town centre is a stand-alone study area due to its importance to the success of the wider Town. It is the main retail and commercial centre, containing a number of community facilities such as the Library and Martlets Hall. The range of shops is limited and the public realm is ‘tired’, community facilities are not sufficient for a growing town, offices are empty, and the general impression does not match the aspirations and relatively high economic profile of the resident base around the town.

The Neighbourhood Plan’s policies for the town centre are about attracting a range of visitors that wish to shop but also eat, drink and visit leisure attractions. Public transport will play an important role in accommodating and facilitating this range of retail and leisure activities.

The town centre is divided into spatial quarters, as depicted below.

Figure 1. Burgess Hill Neighbourhood Plan Town Centre Spatial Quarters



Area -specific policies and issues are summarised as follows:

Leisure and Entertainment Quarter

- This quarter centres along Church Walk and links in with the proposed cinema and retail development. The pedestrian section of Church Walk is identified as being bland. A varied mix of food and drink establishments is encouraged to ensure vitality for the town as the evening economy of the town is limited. A leisure offer that is more orientated to families and older persons is required that consists of a broader range of restaurants, cafes and cultural/recreational activities and could include a new multi-screen cinema, and a new performance venue to replace the outdated Martlets Hall.
- Opportunities to widen the evening economy offer will be supported in this location.

The Station Quarter

- The land around the railway station is identified as capable of accommodating more development. Burgess Hill station currently performs poorly as a transport interchange. Whilst the station is on a high quality rail link the layout of the station building and the area immediately surrounding it compromises its performance. The land around the station is very inefficiently used with large tracts of land used for surface car parking. These could be redeveloped for residential and employment uses. The Mid Sussex Local Plan 2004 supports the redevelopment of the station.
- As discussed in the above section, the TWS also supports improvements around Burgess Hill station.
- The Neighbourhood Plan Policy TC5 supports the redevelopment of Burgess Hill station into a modern, efficient transport interchange and will include proposals to improve facilities, accessibility and the public realm around the station. The Queens Crescent Car Park is allocated for redevelopment to include residential units, retail/employment/hotel and improved parking facilities. The improvement and enhancement of the Queens Crescent open space is also supported.

Wivelsfield Station and Worlds End area

- Worlds End is a self-contained neighbourhood and also an important gateway to the town and transport hub based around Wivelsfield Station. The local community and the Worlds End Association have identified the Neighbourhood Plan process as the opportunity to achieve much needed improvements to transport, public realm improvements community facilities and better access to the countryside.

3.8 Other Growth Locations

In addition to the developments identified in the TWS above the following sites have also come forwards or are being considered for development and have been considered within the PTS. These sites are:

- A planning application was submitted in 2010 for a residential development at the Former Keymer Tiles site. This site lies immediately to the west of Land to the East of Kings Way and an outline permission was granted consent in 2010 for 475 dwellings.
- In the Town Centre, New River Retail have submitted a planning application for redevelopment of the Martlets Shopping Centre. This redevelopment will significantly enhance the retail offer in the town as well as introducing a cinema and new restaurants.
- Initial proposals are being developed for a new business park to the west of Burgess Hill known as the Science Park and forming part of the 'Gatwick Diamond'. The site is not currently allocated but initial observations suggest this site could accommodate 100,000m² of employment space.

The growth locations identified above are illustrated on a plan included as **Appendix A**. The sites form the basis of the developments that could contribute towards the delivery of the vision and objectives of the PTS.

Public Transport Baseline Analysis

04

4 Public Transport Baseline Analysis

This chapter describes the current public transport situation within Burgess Hill, including the existing public transport provision, commuting patterns, modal split, as well as likely future demand for public transport generated by the major growth locations.

4.1 Overall transport context

Burgess Hill is located adjacent to the A23 / M23 trunk road connecting Brighton with the M25 (London); and the London to Brighton / south coast rail line (accessed via Burgess Hill and Wivelsfield Stations), both of which provide strategic north/south connections for the town.

The railway line dissects the urban area with around one third of the town lying to the east of the railway line. Burgess Hill is a compact and 'walkable' town and there are footways on the majority of roads within the built up part of Burgess Hill. The urban area retains many of the historical highway routes for pedestrians, cyclists and equestrians and most of the streets accord with the definition of "quiet routes" suitable for on-road cycling. There are various cycle routes around Burgess Hill, most notably National Cycle Route 20 which broadly follows the alignment of the A23 route west of Burgess Hill.

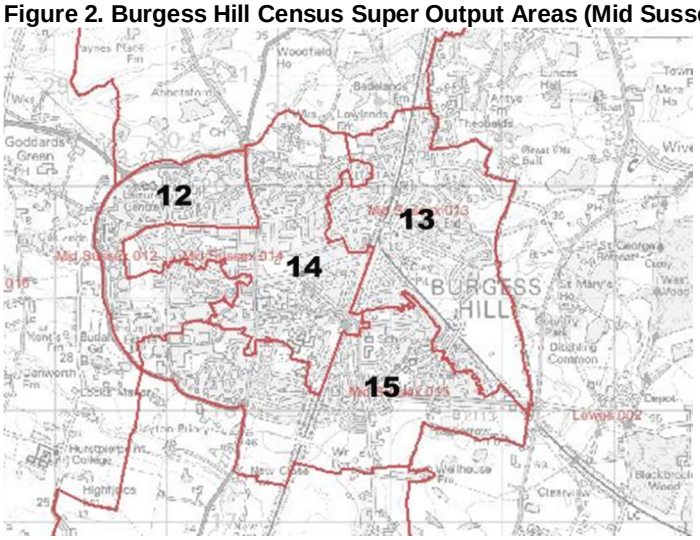
The A2300 is the main road connection between Burgess Hill and the A23. The A273 is the route between Crawley / Haywards Heath to the north (connecting with the A272) and the A23 near Hassocks / Brighton to the south, and takes in Jane Murray Way and Sussex Way to the north and west of the existing town.

The WSTP identifies that Burgess Hill experiences peak period congestion and safety issues associated with current patterns of travel behaviour which are dominated by the private car.

4.2 Journey to Work Patterns

2011 Census Journey to Work (JTW) data was analysed to establish a baseline understanding of the current patterns of travel to work within Burgess Hill, defined as the Super Output Areas (12, 13, 14, and 15) shown within **Figure 2** below.

Figure 2. Burgess Hill Census Super Output Areas (Mid Sussex)



Out-Commuting Destinations

There are over 13,000 commuting trips originating within Burgess Hill, and of these, car travel (driver and passenger) accounts for the majority (69%) of all journey to work trips. A moderate amount of travel is done on foot and by train. **Table 1** below depicts the out-commuting mode share.

Table 1. Out-Commuting Mode Share

	Car Driver	Car Passenger	Bus	Train	Cycle	Walk	Other	TOTAL
Trips	8,431	637	267	1,846	250	1,648	150	13,229
Mode Share	64%	5%	2%	14%	2%	12%	1%	100%

Census data was further analysed to determine the distribution of trips for out-commuting journeys from Burgess Hill. The top ten destinations for work for Burgess Hill residents (in descending order) and their associated mode split are shown in **Table 2**.

Table 2 also demonstrates that the most popular mode of travel to work is the car (both driver and passenger), making up almost 70% of all trips. This is followed by rail and walking, at 14% and 13%, respectively. Bicycle and bus trips are the least preferred methods of travel to work, making up the lowest share of trips, both at 2% each.

Table 2. Top 10 Commuting Destinations from Burgess Hill

Top Destinations	% of JTW Trips	Car Driver	Car Passenger	Bus	Train	Cycle	Walk	Other Modes
Mid Sussex	53%	31%	6%	2%	4%	3%	22%	1%
Crawley	10%	83%	3%	1%	12%	0%	1%	1%
London	9%	19%	1%	1%	78%	0%	1%	0%
Brighton & Hove	9%	63%	4%	5%	26%	0%	0%	2%
Lewes	5%	82%	5%	5%	4%	1%	2%	1%
Horsham	3%	88%	2%	0%	3%	0%	5%	2%
Reigate & Branstead	2%	77%	5%	0%	15%	0%	1%	0%
Wealden	1%	89%	6%	1%	2%	1%	1%	1%
Adur	1%	92%	1%	1%	3%	0%	1%	3%
Worthing	1%	89%	0%	0%	8%	1%	0%	2%
Total		63%	5%	2%	14%	2%	13%	1%

Of the top ten destinations for work, 68% of Burgess Hill commuters stay within the county of West Sussex (including Mid Sussex, Crawley, Horsham, Adur, and Worthing). Mid Sussex is the most popular place of work for Burgess Hill residents, receiving over half (53%) of all the out-commuting trips. This indicates that the district and county area are viable places to live and work, albeit most residents travel by car and not by public transport.

Interestingly, the proportion of trips undertaken on foot (22%) is substantially higher than rail or bus patronage (14% and 2%, respectively) which indicates that walking distances and conditions are favourable enough to support travel by this mode and that people are traveling a relatively short distance to work.

Following Mid Sussex, Crawley, London, and Brighton and Hove receive almost an equal share of commuters from Burgess Hill (10%, 9%, and 9%, respectively). Of these, those travelling to London do so largely by train (78%) via direct rail access from both Burgess Hill and Wivelsfield stations to London Victoria, London Bridge and beyond via Southern rail services and Thameslink.

Despite being located on the Brighton Mainline, Burgess Hill residents predominantly take the car when commuting to Brighton and Hove (69%), compared to 26% who take the train. This suggests that the rail service is poor at attracting a larger share of the market. The TWS identifies that perceived congestion on the rail line is a major barrier to travel by this mode for destinations other than London.

Further breakdown of the commuting trends to key destinations within Mid Sussex shows that the majority of people who live in Burgess Hill also work in Burgess Hill (Table 3 below). Haywards Heath is the second most common destination for work (20%) for Burgess Hill residents who commute within Mid Sussex.

Table 3. Mid Sussex Commute Destinations from Burgess Hill

Origin/Destination	Burgess Hill	Haywards Heath	Cuckfield/Haywards Heath	Hurstpierpoint	Other
Burgess Hill	56%	20%	8%	6%	10%

Table 4. Mode Split for Journey to Work Trips to Burgess Hill & Haywards Heath

Origin	Train	Bus	Taxi	Car Drive	Car Pass	Bicycle	Walk	Other
Burgess Hill	1%	1%	0%	47%	6%	5%	38%	1%
Haywards Heath	13%	2%	0%	75%	7%	1%	2%	1%

Table 4 shows in more detail the mode split for commuters who work in Burgess Hill and Haywards Heath. For both destinations, the car is the preferred method of travel. However, walking makes up over a third of the trips within Burgess Hill. This suggests that there is a mix of residential and employment uses clustered in close enough proximity such that short journeys on foot are viable for commuting.

In-Commuting Trips

There are over 10,000 daily commuting trips into Burgess Hill from various destinations, with over half (54%) coming in from wider Mid Sussex, followed by Brighton and Hove (13%) (see **Table 5)**. Similar to the out-commuting travel behaviour seen above, most of these trips are also taken by car.

Of the commuters into Burgess Hill from within Mid Sussex, **Table 6** shows that the majority (66%) of these commuters live in Burgess Hill. Of these **Table 7** shows that 53% use the car to commute, over a third (38%) walk to work, and only 1% take the bus. Similarly, **Table 7** also demonstrates that work journeys into Burgess Hill from other destinations within Mid Sussex are almost solely by car (driving and as passenger).

Table 5. Top 10 Origins for Commuting into Burgess Hill

Usual Residence (top 10)	All Modes	%
Total	10,877	100%
Mid Sussex (All output areas)	5,912	54%
Brighton & Hove	1,440	13%
Lewes	633	6%
Horsham	475	4%
Crawley	347	3%
Wealden	307	3%
Adur	285	3%
Worthing	268	2%
Arun	99	1%
Eastbourne	86	1%
All other places (combined)	1,025	9%

Table 6. Places of Origin within Mid Sussex

Usual Residence	% to Burgess Hill
Burgess Hill	66%
Haywards Heath	11%
Cuckfield/Haywards Heath	4%
Hurstpierpoint	5%
Other	13%

Table 7. Mode Split In-Commuting to Burgess Hill

Origin	Train	Bus, mini-bus or coach	Taxi	Motorcycle, scooter or moped	Driving a car or van	Passenger in a car or van	Bicycle	On foot	Other method of travel to work
Burgess Hill	1%	1%	0%	1%	47%	6%	5%	38%	0%
Haywards Heath	11%	3%	0%	1%	75%	6%	1%	1%	0%
Cuckfield/ Haywards Heath	5%	3%	2%	1%	77%	8%	1%	3%	0%
Hurstpierpoint	0%	4%	1%	1%	77%	12%	4%	1%	0%
Other	4%	2%	0%	1%	77%	7%	3%	4%	0%

4.3 Bus Provision

The main bus routes in Burgess Hill are Services 33, 134 / 135 (East Burgess Hill Circular), 136 / 137 (West Burgess Hill Circular) and 100, which are operated under contract to West Sussex County Council (source: Town Wide Strategy, 2011). The main bus operators serving Burgess Hill are Metrobus, SussexBus, and Compass Travel.

Table 8 below outlines the buses serving Burgess Hill, their frequencies and hours of operation. It can be observed that currently, the bus public transport offering within Burgess Hill is poor, with infrequent service provision (approx. one bus an hour or one bus every half hour) and limited hours of service. Most of the buses do not operate in the evening past 19:30. With this level of service, it can be interpreted that the bus services are currently accommodating only a small market of riders who are undertaking shopping/retail and school related trips. Commuters are not accommodated by the current bus service provision and this is evidenced by the Census JTW mode split data which showed that bus ridership accounts for only 2% of all commuting trips out of Burgess Hill (see **Table 1**).

This is further evidenced by Metrobus' decision to revise its town bus services in Burgess Hill in April 2014 to operate during the off-peak period on Mondays to Fridays only. Due to very low patronage leading to loss of revenue, Metrobus cut services along Chanctonbury Road, Hammonds Ridge, Tesco, Charles Avenue, York Road, Jane Murray Way and The Triangle routes.

At this stage, patronage has not been established and further dialogue with the local bus operators will be required in due course.

It is understood that WSCC are already speaking to Metrobus about the potential for a multi-modal ticketing system across the County. A new service has recently been introduced which enables bus travel to Gatwick Airport from Bognor Regis and then return via rail demonstrating that technology exists to enable multi-modal ticketing. Apportionment could be an issue but the bus operators use similar technology so there is potential for multi-modal ticketing to work.

Figure 3 illustrates the bus route coverage within Burgess Hill. It is clear from this diagram that the majority of routes operate on a local, looped basis. While this may provide access to a greater number of residents across the

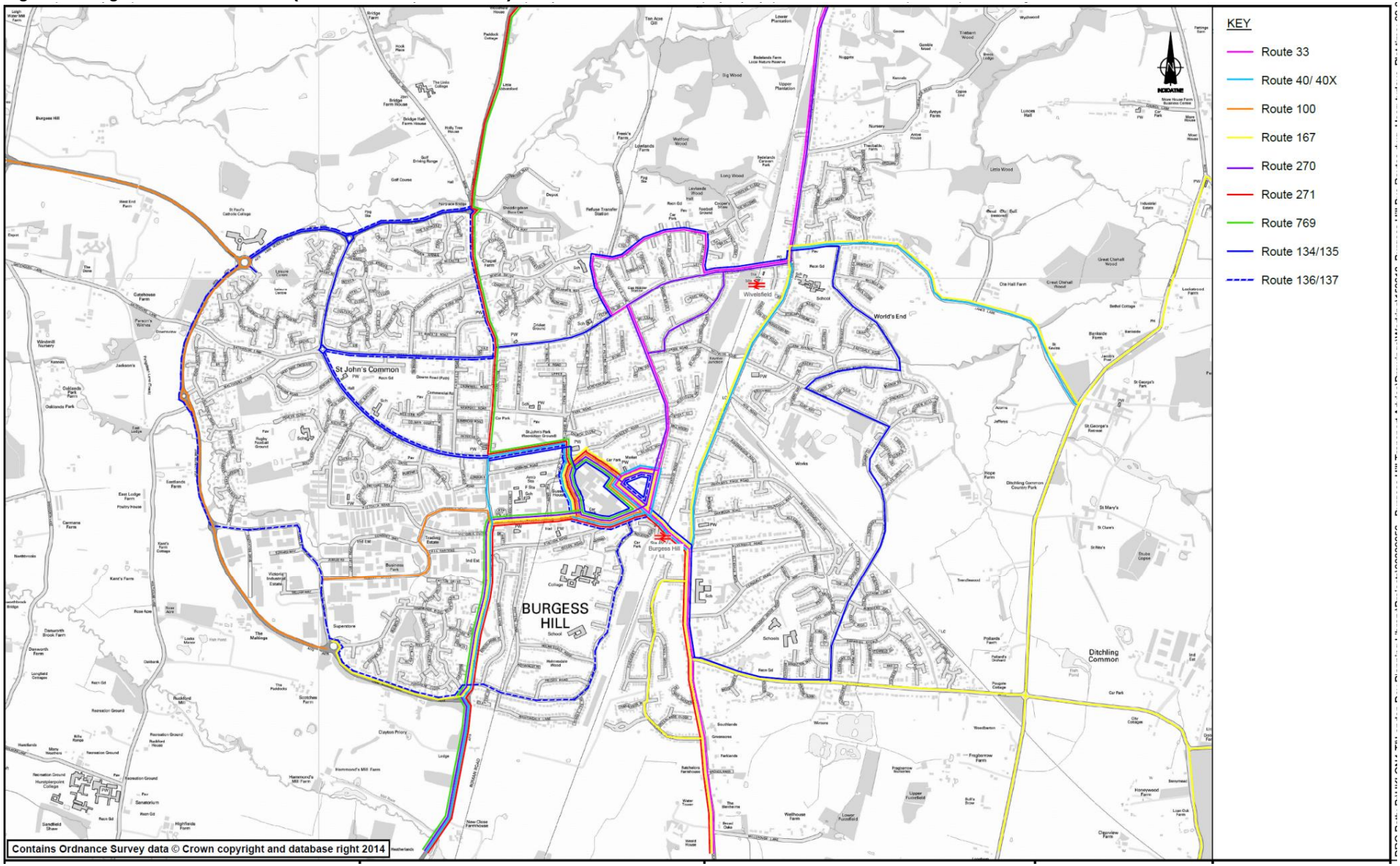
town, the looped nature tends to increase journey times and can make bus travel a less viable / attractive mode choice, especially for commuters where value, convenience and punctuality are key determinants of mode choice.

One benefit of the current routing is that all services serve the town centre. This means that the bus offers a viable alternative for access to the town centre.

Table 8. Burgess Hill Bus Services and Frequency

Bus Service	Bus Route	Weekday		Saturday		Sunday	
		Frequency per day	Operating Times	Frequency per day	Operating times	Frequency per day	Operating times
33	Brighton - Haywards Heath	13	07:00 - 19:00	10	08:00 - 18:30		
40 / 40X	Royal Sussex Hospital - Cuckfield	33	05:30 - 23:00	16	07:00 - 19:30	5	09:00 - 19:00
100	Burgess Hill - Horsham	13	06:30 - 19:00	11	07:30 - 19:00		
134/ 135	Burgess Hill via Leylands Park	10	07:00 - 18:00	10	08:00 - 18:00		
136/ 137	Burgess Hill via Tesco and The Triangle	6	09:30 - 14:30				
167	Burgess Hill - Lewes	6	08:00 - 16:30				
270	Brighton - East Grinstead	12	07:00 - 19:00	11	07:30 - 18:00		
271	Brighton - Crawley	8	07:00 - 19:00	6	08:00 - 19:30	3	09:00 - 19:00
769	Sheffield Park - Brighton					1	10:00 - 11:00 17:00 - 18:00

Figure 3. Burgess Hill Bus Network (60339856-M001-SKE-0004)



4.4 Rail Provision

Burgess Hill is situated on the Brighton Main Line with access from two stations, Burgess Hill and Wivelsfield, and, therefore, serves partly as a commuter town. However, it is also home to the largest business and commercial sector in Mid Sussex, attracting workers in from the surrounding area, as demonstrated by the travel to work data.

Train services at both stations are provided by Southern Railway between London Victoria and Brighton, and Thameslink between Bedford and Brighton (via Gatwick). Wivelsfield Station is located just north of Keymer Junction, where the East Coastway Line towards Lewes and Eastbourne diverges from the Brighton Main Line and Thameslink (see **Figure 4** below). Train frequencies for both stations are shown in **Table 9** and **Table 10** below.

Network Rail's Sussex Area Route Study (SARS) was published in draft earlier in the year. One of the key infrastructure projects identified for Burgess Hill was the grade separation of Keymer Junction. However, Network Rail is currently re-visiting the SARS with a view to pushing back improvements such as Keymer Junction grade separation to the next plan period (CP7).

According to the WSTP, short distance commuting by rail is not popular – as is reflected in the Census data analysis – due partly to a perception of overcrowding. In addition, the railway stations, suffer from problems with access to platforms, inadequate waiting facilities, and poor integration with bus services (WSTP, 2011).

Furthermore, there is only a small amount of parking available at or near the rail stations, limiting commuters' ability to access the rail station to park and ride. Burgess Hill station features approximately 68 parking spaces whilst Wivelsfield currently does not have any parking. Within five minutes' walk of Burgess Hill station are the town centre car parks but the current tariffs restrict commuter parking and there is a plentiful supply of unrestricted on-street parking. In the long term, as demand for rail increases commuter parking will increase and demand for parking could restrain rejuvenation of the high street if a long term solution is not delivered.

Table 9

Destination	Peak Frequency (per hour)		Approx. Journey Time (mins)
	AM (08:00 – 09:00)	PM (17:00 – 18:00)	
Brighton	5	5	15
London Victoria	2	1	53
Littlehampton	0	2	55
Bedford*	3	2	135

Table 10. Direct Trains from Wivelsfield Station

Destination	Peak Frequency (per hour)		Approx. Duration (mins)
	AM (08:00 – 09:00)	PM (17:00 – 18:00)	
Eastbourne	1	2	40
Bedford*	1	1	130
Brighton	4	5	15
London Victoria	2	1	55
Hastings	1	1	130

** From 5 January 2015, for three years until January 2018, no Bedford to Brighton Thameslink trains will call at London Bridge station. A reduced service will run between Brighton and London Bridge in the off-peak and a very limited service will run in the peak. Thameslink services will continue to operate between Bedford, Three Bridges and Brighton. However, they will be diverted via an alternative route between London Blackfriars and East Croydon and will not call at London Bridge. Some services will call at Elephant & Castle.*

The Thameslink programme (expected to be completed by 2018) will increase capacity into and across central London between destinations north and south of the capital, including to and from West Sussex. Despite these proposed measures, the need for additional capacity is likely to remain an issue, and major interventions and Government investment are likely to be required to resolve this issue. The SARS identifies that a further six trains per hour would be required to meet 2043 demand.

4.5 Amenities

The key public amenities in Burgess Hill are shown in **Figure 5** below, including employment zones, institutional, leisure and recreational places, each of which could be better served by public transport through the PTS.

Figure 4. Rail Network Burgess Hill

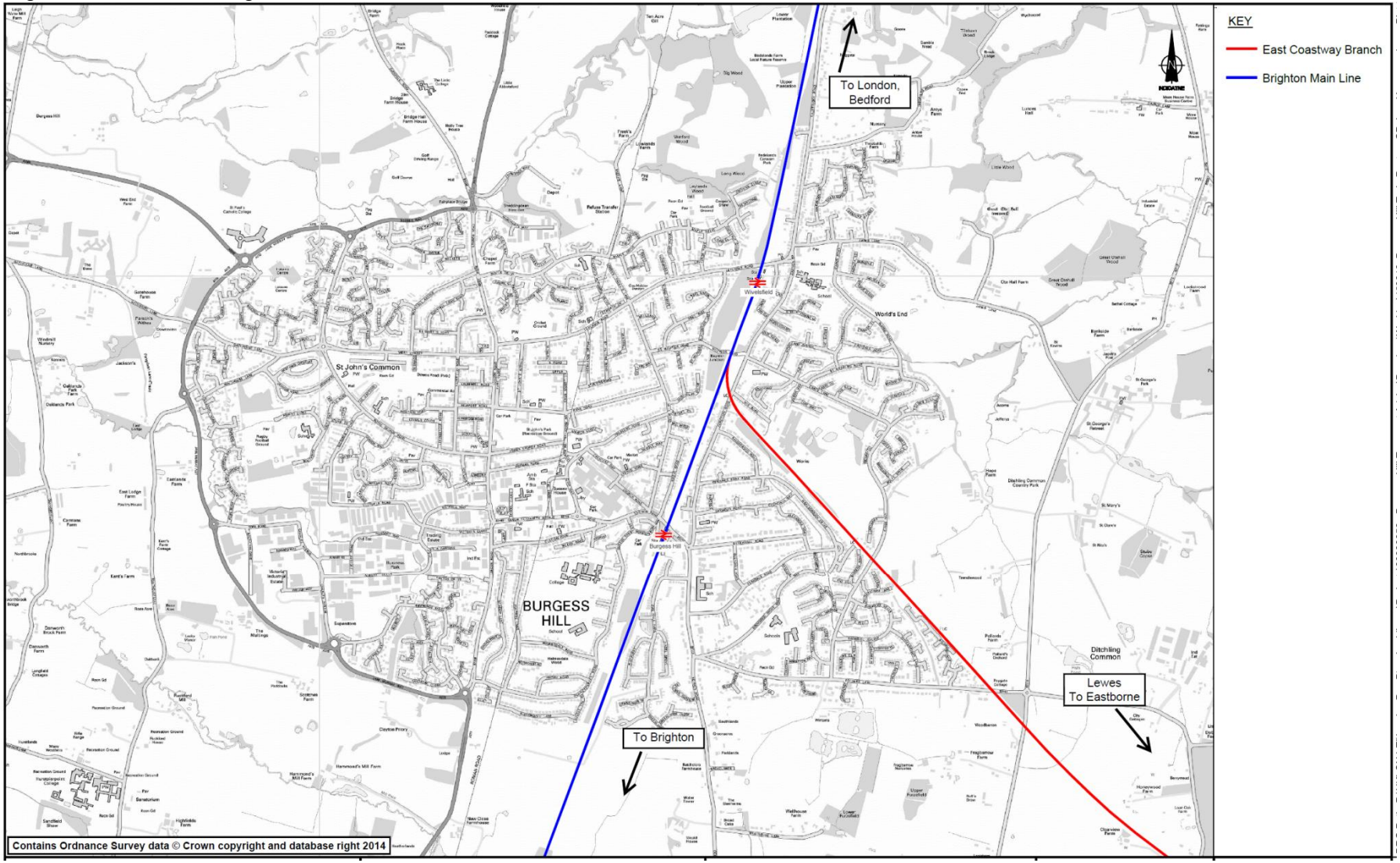
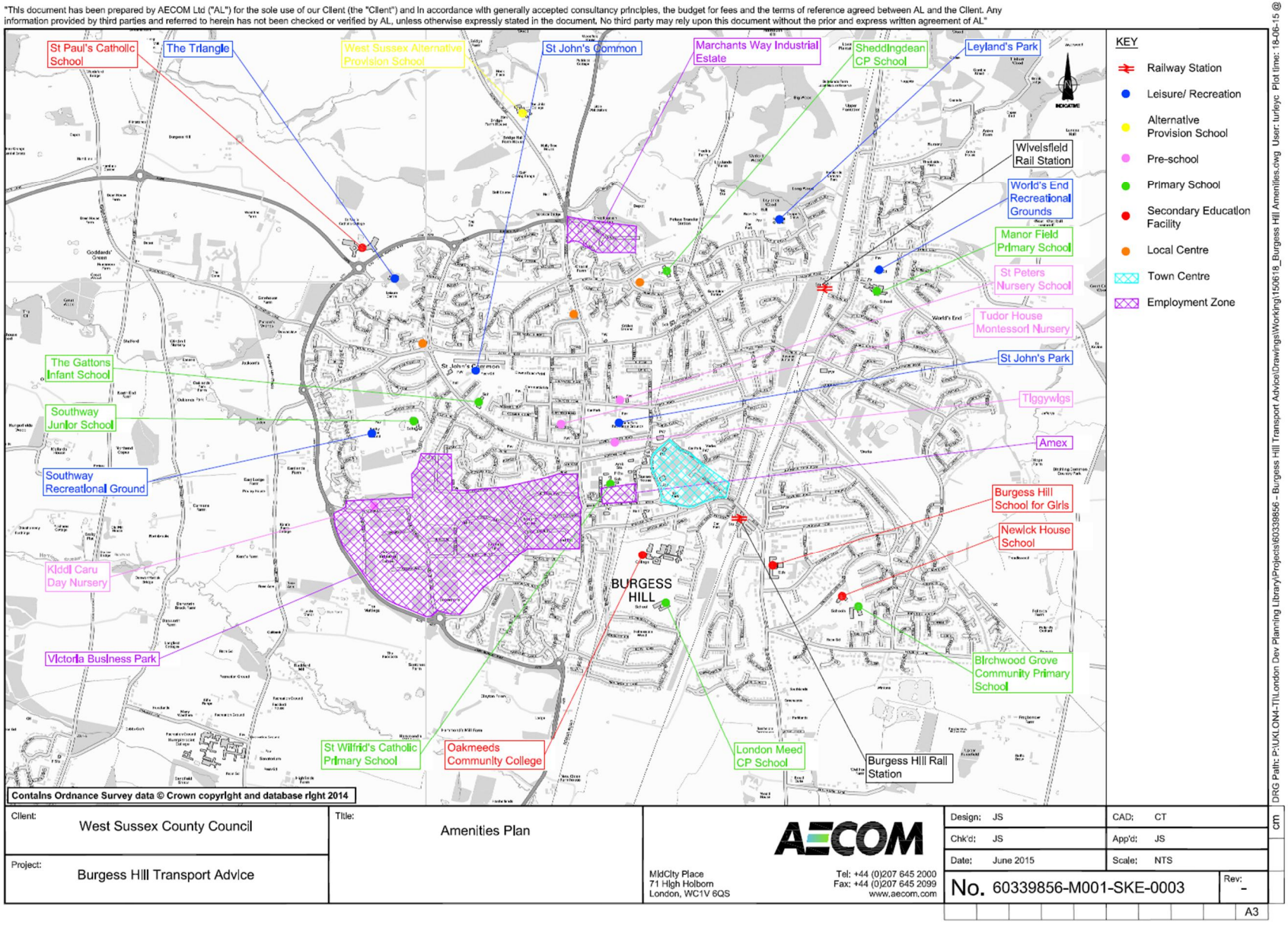


Figure 5. Key Amenities in Burgess Hill (60339856-M001-SKE-0003)



4.6 Future Demand

4.6.1 Future Residential Development

In the future, additional new housing is expected to increase the population of the Town. This will have a major impact upon the current highway network and public transport services, in terms of capacity, air quality and parking. The impact of this growth will need to be mitigated, and this PTS focuses on measures that will support growth and encourage a change in travel behaviour of residents and visitors to the town.

The key strategic housing development sites in Burgess Hill are proposed to contribute 4,780 new homes and include the following locations (also shown in **Figure 9**):

- The Northern Arc Central, East and West sites;
- Fairbridge Way;
- Land east of Kingsway;
- Former Keymer Tileworks.

Table 11 below shows the forecasted public transport demand for these sites during the morning and evening traditional network peak periods (8AM – 9AM; 5PM – 6PM) as well as across the day. Person trip rates at full build out were derived from TRICS for residential developments of similar sizes in neighbourhood centre, suburban area, and edge of town locations. A bus mode share of 7,5%, corresponding to 4% of trips made only by bus and 3,5% of rail based trips completed by a bus jouney, was then applied to this rate and used to determine the trip generation based on the total residential units planned for each development site.

It can be seen from **Table 11** that public transport demand will be highest in the morning peak (385 two-way person trips) to accommodate out-commuting trips, and that the Northern Arc West site will generate the highest public transport travel demand overall (130 person trips in the AM peak; and 106 person trips in the PM peak).

It should be noted that both Motion and iTransport, the transport consultants working on behalf of the developers of the Northern Arc are developing proposals for public transport strategies to serve their elements of the Northern Arc. At a workshop held in June 2015 this work was shared with the developer consultants and a number of recommendations were made including liaising with the local bus operators about our emerging PTS.

Table 11. Future Public Transport (PT) Trip Generation – New Residential Sites

		AM			PM			Daily		
		Arr.	Dep.	Two Way	Arr.	Dep.	Two Way	Arr.	Dep.	Two Way
	Person Trip Rates	0.19	0.93	1.12	0.58	0.33	0.91	3.86	4.14	8.00
	Mode Share PT (7,5%)	0.014	0.070	0.084	0.044	0.025	0.068	0.289	0.311	0.600
Central Site	Total Res. Units *	1500								
	Trip Gen PT	22	105	126	65	37	102	434	466	900
West Site	Total Res. Units	1550								
	Trip Gen PT	22	108	130	68	38	106	449	482	930
East Site	Total Res. Units	450								
	Trip Gen PT	6	31	38	20	11	31	130	140	270
Land east of Kingsway	Total Res. Units	480								
	Trip Gen PT	7	33	40	21	12	33	139	149	288
Fairbridge Way	Total Res. Units	325								
	Trip Gen PT	5	23	27	14	8	22	94	101	195
Former Keymer Tileworks	Total Res. Units	475								
	Trip Gen PT	7	33	40	21	12	32	137	148	285
Total Trip Gen PT		**69**	**333**	**402**	**209**	**118**	**327**	**1,383**	**1,485**	**2,868**

* indicative housing split based upon 3500 units across Northern Arc development

4.6.2 Future Employment Development

There are over 10,000 daily commuting trips into Burgess Hill from various destinations, with over half (54%) coming in from wider Mid Sussex, followed by Brighton and Hove (13%) (as shown in **Table 5**).

In addition to the housing sites, it will be important for public transport to effectively serve both existing and new places of work. The following new employment areas are planned for development in Burgess Hill:

- **The Hub Employment Area**, a business park of up to 50,000 m^2 of employment floor space (B1(B), B1(B), B2, and B8) with ancillary offices, which has been granted planning consent on the land to the west of Burgess Hill;
- **Northern Arc West Site** – up to 50,000 m^2 of employment floorspace is envisaged as part of the Northern Arc West planning application; and
- **The Science and Technology Park** – an aspirational scheme to develop a high tech research and development park with potential for 100,000 m^2 of floorspace creating 2,500 new jobs as part of the Gatwick Diamond employment zone.

Together, these sites will offer an alternative to established centres such as Brighton and Crawley, providing approximately 200,000 m^2 of potential additional employment floorspace in Burgess Hill.

As part of the emerging employment proposals, there is an aspiration to move some business out of the Victoria Way industrial area to the employment space on the edge of town to enable regeneration of the town and reduce the un-neighbourly uses which generate HGV traffic currently taking place in the rest of the town.

Table 12. Future Employment Public Transport (PT) Trip Generation

		AM			PM			Daily		
		Arr.	Dep.	Two Way	Arr.	Dep.	Two Way	Arr.	Dep.	Two Way
	Person Trip Rates (per 100 sqm)	0.41	0.21	0.61	0.14	0.33	0.47	3.13	3.25	6.38
	Mode Share PT (7,5%)	0.03	0.02	0.05	0.01	0.02	0.03	0.23	0.24	0.48
West Site	Total Emp. Floor Space (sqm)	50,000								
	Trip Gen PT	15	8	23	5	12	17	117	122	239
The Hub	Total Emp. Floor Space (sqm)	50,000								
	Trip Gen PT	15	8	23	5	12	17	117	122	239
Science Park	Total Emp. Floor Space (sqm)	100,000								
	Trip Gen PT	31	15	46	10	25	35	235	244	478
	Total Trip Gen PT	**61**	**31**	**92**	**20**	**49**	**70**	**470**	**487**	**957**

Table 12 shows the forecasted public transport demand for the three planned employment areas in Burgess Hill. As before, a bus mode share of 7,5% was applied to the TRICS person trip rates. This was then applied to the total employment floorspace for each development to derive the future public transport demand (person trips). Note that the TRICS rates were derived for other industrial estate sites of a similar range of floorspace in other suburban and edge of town areas.

This analysis shows that the highest number of person trips generated is during the morning peak period, in particular for journeys to the Science Park.

It is further acknowledged that starting in 2015 and by 2016 American Express (AMEX) will be relocating Technology and Staff groups back from their Brighton office into Sussex House in Burgess Hill, the company's iconic building off Civic Way following refurbishment. It is anticipated that the building will achieve an average 1,000 occupancy during the working week (Monday to Friday, broadly 8am to 6pm) and will be used as a data centre. Post refurbishment works there will be a total of 253 secure on-site car parking spaces provided plus 66 cycle bays and 10 motorbike bays. 91 off-site car parking spaces will also be provided (providing a total of 344 parking spaces).

AMEX anticipates that the majority of employees migrating to Burgess Hill will be the same business functions that occupied the space prior to refurbishment. A high level analysis of home locations by AMEX in **Table 12** shows that almost half of the employees live in Brighton and that 9% already live in Burgess Hill. Over a third are anticipated to live around 30 minutes to an hour away

Table 13. AMEX Employees Place of Residence

Employee home location	% employees
Brighton	46%
Burgess Hill	9%
Haywards Heath	5%
Other (c30mins to 1 hour away)*	35%
Long Distance (+1hour)*	5%
Total	100%

**It is not stated whether the time indicated is based on a specific travel mode. AMEX states that many of the journeys classified as 'Other' and 'Long Distance' are complex cross country journeys.*

It is unclear from the analysis presented by AMEX in **Table 13** whether this includes all AMEX employees or just those relocating back to Burgess Hill.

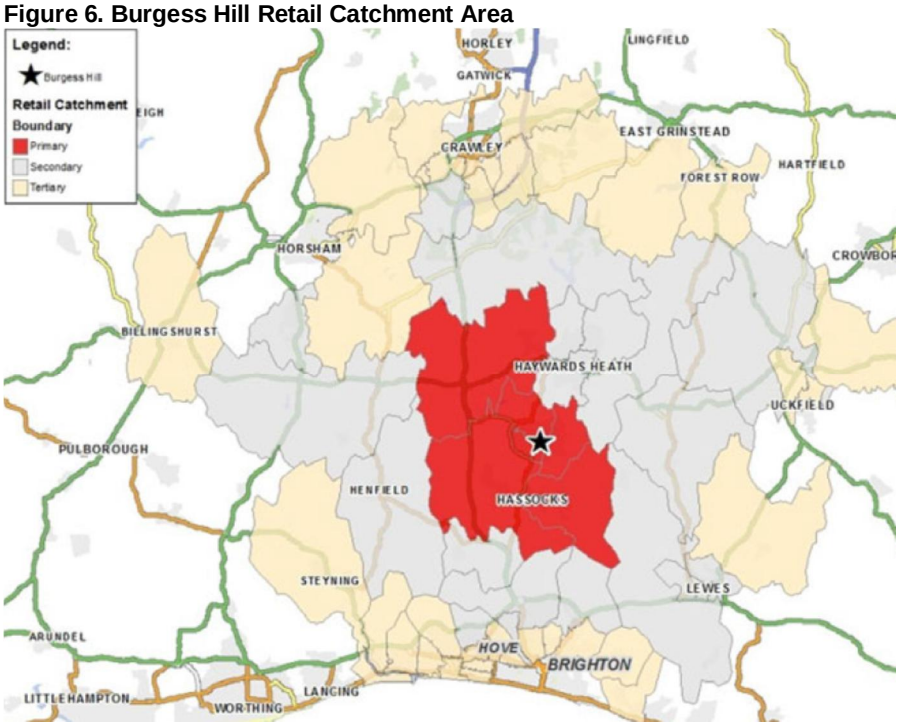
AMEX are planning on conducting an employee travel survey in 2016 once all staff have migrated to the building. WSCC may wish to coordinate with AMEX to understand any public transport implications from this survey.

Town Centre Redevelopment

The town centre redevelopment will provide a new retail offering in Burgess Hill and includes the provision of a cinema, hotel restaurant and shops. This change in retail further aims to create a vibrant evening economy which the PTS should respond to. Proposals for the Martlets also include expanding the Waitrose car park from 340 to approximately 500 spaces and demolition of the existing multi-storey car park.

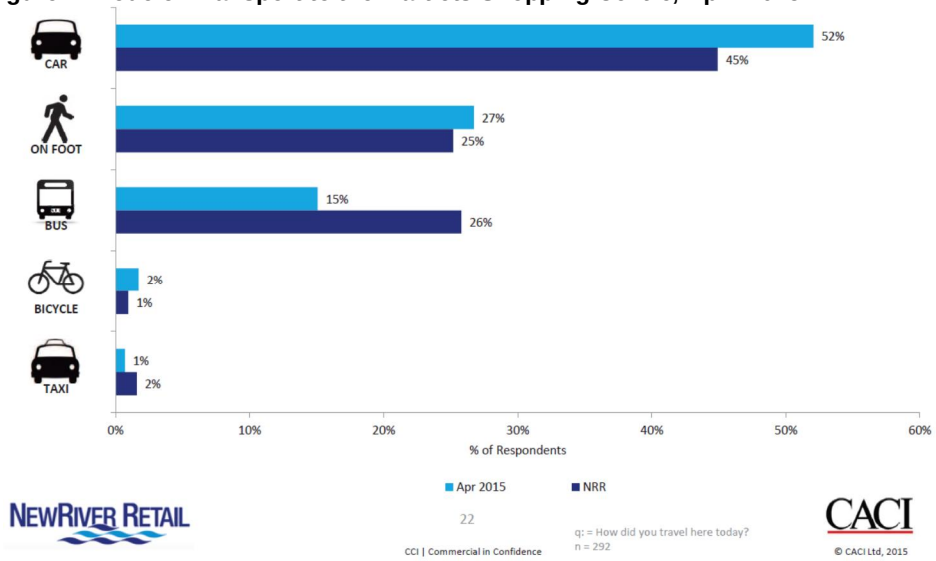
NewRiver Retail carried out a customer survey of 350 shoppers of the Martlets in April 2015. The results indicated an average drive time of customers to the Centre of 10 minutes with 77% of shoppers coming from the 'primary' catchment area as shown in the red area of **Figure 6**. It was also found that 52% of customers drove to the Martlets, 27% walked, and 15% took the bus. Only 2% cycled while 1% travelled by taxi. The results of the survey are shown in **Figure 7**. This survey also compares the Martlets' mode split with NewRiver Retail's average portfolio of other properties. This data shows that there is opportunity to increase the share of customers who travel to the shopping centre by public transport, especially as the majority of bus routes in Burgess Hill currently serve the town centre. However, as was seen in Section 4.3, the frequency and hours of operation of current bus service provision are limited, especially during the evenings and weekends.

Figure 6. Burgess Hill Retail Catchment Area



Source: NewRiver Retail. 2011. A vision for Burgess Hill Presentation. Available at <http://www.nrr.co.uk/wp-content/uploads/2011/11/Burgess-Hill-Investors-Presentation-Final-LR1.pdf>.

Figure 7. Mode of Transport to the Martlets Shopping Centre, April 2015



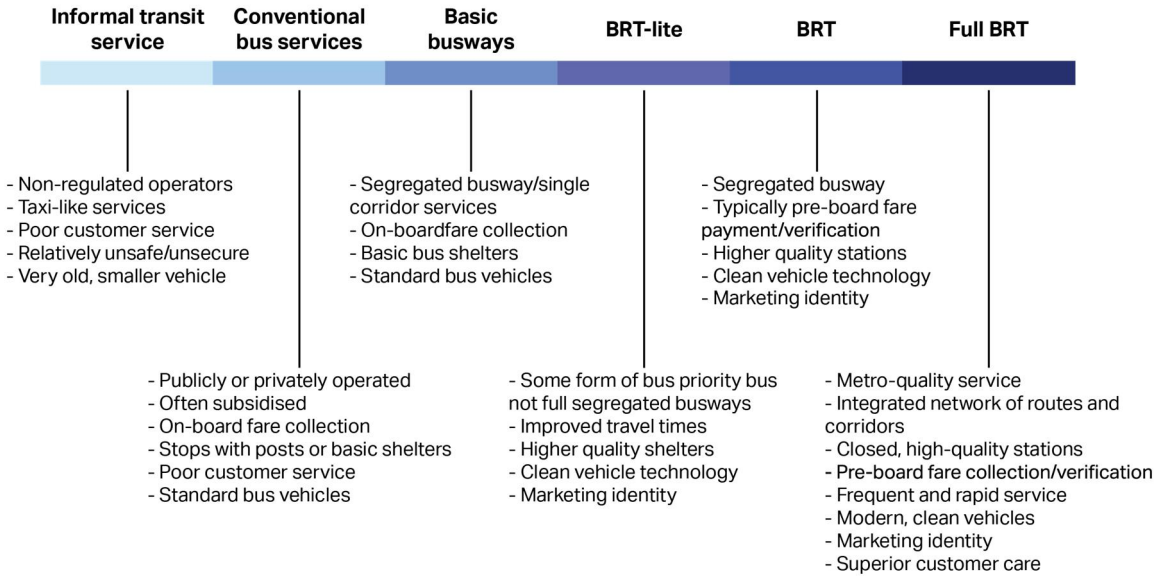
Source: NewRiver Retail. 2015. Customer Travel Survey. April 2015.

4.7 Mode Options

Given the relatively low demand for public transport as demonstrated in the previous section, the mode most likely to be viable to carry forward the PTS is bus or Bus Rapid Transit (BRT). However, to make public transport attractive and effective, effort would be required to maximise the ease of access to services relative to other modes of transport, particularly the private vehicle. For that, bus service must be convenient to find/access and interchange with, comfortable, operate at desirable times of the day and night, and at a priority over other modes.

The diagram below summarises the spectrum and differences of various bus-based modes.

Figure 8. Key Characteristics of Standard Bus and BRT services



A key feature of high quality bus based public transport is an ability to cater for higher levels of demand than a conventional bus operation. The conventional assumption is that BRT systems typically have capacity ranging between 2,000 and 6,000 PPDPH (passengers per direction per hour) depending on the level of segregation from other road users. It can be considered as a new, separate system with its own specific field of application but there can be an overlap zone between the higher end of BRT capacity and the lower end of Light Rapid Transit (LRT) capacity. However, appropriately designed, it can offer capacity and quality on a par with or exceeding that of tram or LRT. In some cases, it is capable of achieving capacity comparable to full Metro.

Challenges and Opportunities

05

5 Challenges and Opportunities

5.1 Typical Challenges for Small Towns

According to European-based research (Perssen, 2003), small towns, typically with a population of under 40,000, experience similar conditions and challenges in the implementation of successful public transport systems. These are summarised here and have been considered in the development of the PTS for Burgess Hill.

Population densities in smaller towns are often too low to justify significant investment in public transport infrastructure / services. However, because the travel distances in small towns are typically shorter, walking and cycling are more attractive (up to 2km) compared to going by bus.

It was observed from the census data analysis for Burgess Hill that there is a large internal market for work trips within the town and that over a third of these journeys are taken on foot. As walking and cycling are the most environmentally friendly means of transport, the aim should not be to get pedestrians and cyclists to take the bus or other modes.

Furthermore, the connectivity between destinations is often limited (e.g. due to dispersed development patterns), making it a challenge to operate any public transport service between them.

Where public transport exists, typically one mode (bus) has to cover all markets, and ends up not covering any market particularly well. There is a need to understand the markets better in order to target services and increase chances of patronage.

In many of the towns observed by Perssen (2003), the bus routes were designed as loops, something that in most cases lead to long travel times. If the loop is always operated in the same direction, passengers living in the beginning or the end of the loop have to travel all the way around in one of the directions, making the service a less attractive means of travel. This looped network can be observed of the network in Burgess Hill as previously discussed and may be a contributing factor to the existing low bus mode share.

The research also found that there is a big difference in how attractive the public transport network is for work trips. Public transport was seen to be used for commuting more regularly in bigger towns. This is true for Burgess Hill as evidenced by the very low share of bus and train patronage for most work trips.

From Perssen's analysis, there are five factors which people in small towns consider fundamental for public transport services:

- Simplicity;
- Times of departures;
- Sensitivity to complaints;
- Design of bus routes; and
- Travel speed.

Thus it is important to keep the following in mind when designing a public transport system for Burgess Hill:

- Keep it simple, frequent, speedy and reliable;
- Loops lead to long travel times and should be minimised;
- The creation of clear nodes where services come together to create easy interchange opportunities encourages public transport usage; and
- Market-led solutions cater better for likely demand.

5.2 Burgess Hill Specific Challenges

From the baseline review of the current public transport situation in Burgess Hill the following main challenges have been identified for the PTS:

- Overcoming car dominant travel and encouraging a shift to public transport;

- Making public transport attractive to existing and future residents;
- Creating public transport options for employment areas and commuters;
- Supporting the town centre, encouraging an evening economy;
- Connecting the services and amenities;
- Making current bus services more attractive:
    - Buses presently operate at limited hours and at very low frequencies;
    - There is a lack of bus services to serve commuters in Burgess Hill;
- Making rail services more attractive and accessible:
    - Overcrowding on rail makes it unattractive.

5.3 Opportunities

Recent evidence from the UK by PTEG (2015) demonstrates how small public transport schemes can deliver big value for money when they provide solutions to targeted problems and markets. Case studies from across the UK show that smaller schemes are easier to implement and can therefore be used to respond quickly to emerging problems and opportunities. Smaller schemes can also be more effectively targeted at key bottlenecks and focus on quick wins. Larger projects, in contrast, tend to address problems across wider areas in a more strategic way. A mix of spending on large and small schemes is necessary to address the range of challenges facing local transport networks.

Key findings from the PTEG study of strategies to encourage public transport ridership include:

- Make public transport access an integral part of the planning for employment centres (e.g. business parks);
- Coordinate bus service with train times;
- Target bus routes to employment areas and match service to working patterns (i.e. more frequent service and earlier and later departure times);
- Provide direct, express services between employment centres and city centres; and
- Integrate public transport and traffic management strategies,

The following highlights key case study examples of small schemes from the study that deliver high value for money, and how their ideas could be translated in the context of Burgess Hill.

i54 Business Park, Wolverhampton

A case study of the new i54 business park in South Staffordshire (West Midlands) shows how providing high quality public transport as part of the business park strategy can make it an attractive location for employees. The strategy offered new and enhanced opportunities for people without a car to take jobs at i54 and the surrounding Enterprise Zone. From the outset, local authorities in Staffordshire, Wolverhampton City Council, Centro (West Midlands Passenger Transport Executive), and employers formed a steering group to help deliver attractive alternatives to car travel. The partners worked together with National Express to ensure bus services to i54 from Wolverhampton's residential areas were progressively introduced as the number of new jobs increased.

More than 20 buses per hour now serve the park. The new Service 54 express bus takes just 17 minutes to reach i54 from Wolverhampton city centre. Journeys are up to 8 minutes faster than the service it replaced. Patronage on Service 54 has continued to grow strongly, and three months after its launch was 30% up on the service it replaced. It is anticipated that the service will be operated on a full commercial basis without the need for local authority subsidy within one to two years.

A similar strategy where public transport is considered from the outset of business park development should be considered for the new employment sites in Burgess Hill (e.g. at the Hub), proving important in changing behaviour of commuters and participating in the town's modal shift.

Local Link, Greater Manchester

Limited early morning and late night public transport can present significant issues for business and employees, particularly if working shift patterns.

Transport for Greater Manchester's Local Link bus scheme provides a great example of targeted bus service provision which filled in missing connections in existing public transport networks, ensuring that workers in deprived neighbourhoods could reach previously inaccessible places of employment. Transport for Greater Manchester worked with 'Local Link' community transport operators to provide door-to-door travel to work at times when public transport is unavailable or restricted. These demand responsive services are operated with mini buses, and passengers book in advance.

The principal element of the project involved increasing capacity and providing additional early morning, late night and weekend services. A similar strategy could be adopted in Burgess Hill to fill in the existing gap of public transport service early morning and at night. This kind of service would therefore provide a greater accessibility and flexibility for all users without requiring the operation of traditional buses on the same hours.

Salford Quayslink, Greater Manchester

The Salford Quayslink scheme created a new high frequency bus link in 2011 from housing areas and existing rail/bus transport hubs to MediaCityUK, a new purpose built site for creative and digital businesses, including BBC and Salford University.

The service maximised access from within Salford and other areas of Manchester by providing interchange with other public transport services at a large number of locations. Initially, the service was run by a local bus company under a gross cost contract with four new hybrid vehicles obtained through funding from DfT. The remainder of the funding, including vehicle maintenance and operating expenditure, was provided by the partners from their own resources.

Patronage rose by 77% within the first 12 months of the service. This growth demonstrated that the new bus link offered a viable commercial proposition and 14 months after it began, the service was taken over by Stagecoach, providing a permanent and enhanced link.

Similarly to the i54 business park bus service implemented in Wolverhampton, this example shows the importance of connecting business parks usually located at the edge of town with a dedicated bus service, and from the outset, linking it to the main local hubs such as rail stations, town centre and main residential areas. This kind of service should be highly considered in the case of Burgess Hill.

Jobconnector buses, South Yorkshire

'Jobconnector' buses in South Yorkshire improved access to employment and training by increasing the coverage and frequency of bus service, enabling employers to reach a wider labour market. Patronage on the bus rose 62% following an increase in service frequency from hourly to half hourly.

5.4 Identifying Markets for Burgess Hill

Based on evidence from existing research and census data analysis, **Table 14** below identifies the public transport market segments observed within Burgess Hill and the potential interventions to increase ridership.

The markets are segmented by trip purpose (journey to work, leisure and retail) as well as trip distance (trips within Burgess Hill, within the wider Mid Sussex area, and to longer distances, e.g. Brighton and London).:

Table 14. Potential Public Transport Markets

Trip Purpose	Trip Distance		
	Within Burgess Hill (BH)	Within Mid Sussex (MS)	Longer Distances (e.g. Brighton, London)
Journey to Work	• Predominant market for all work trips in/out of BH. • Currently most people take the car, but a large share walk. • Should aim to divert car trips to public transport; not to take away from walk trips. • Aim to create connections to/between new and existing employment sites. • Bus-based modes may be most competitive for this segment.	• The rail market for this segment could be grown further to divert the currently dominant car based travel to public transport. • Based on current observed movements (census journey to work data), only the Burgess Hill – Haywards Heath link is likely to merit targeted investment for public transport improvements. • Southern and Thameslink trains from both Burgess Hill and Wivelsfield stations currently serve Haywards Heath station, however at a low average frequency of 2 trains per hour during the peak period. • Train frequencies would need to increase to make rail travel more attractive, alongside improved connections between train stations and residential/employment centres. This may be through bus shuttles or improved parking (park and ride) capacity at trains stations.	• Trips to London from Burgess Hill are predominantly taken via train (78%). 20% of commuters still use the car. • Despite fairly frequent rail service from Burgess Hill and Wivelsfield stations to Brighton, the majority of Burgess Hill commuters still drive. This may be partly due to poor connections to places of work in Brighton from the train station. • There may be a market to provide public transport alternatives to rail from Burgess Hill direct to employment areas in Brighton/Haywards Heath/London. E.g. prioritised rapid bus corridor along the A23. A route may be via Haywards Heath, Burgess Hill, including business parks and Northern Arc sites, and Brighton. • There is also likely a strong market for improved access to rail stations in Burgess Hill from residential areas (e.g. bus services that coincide with train times) to further encourage train ridership.
Leisure	• Key markets for public transport service for leisure activities within Burgess Hill include connections to The Triangle, St. John's Common, Leyland's Park, and other recreational grounds (see the Amenities Map Figure 5).	• Likely not a large market.	• The market segment for leisure activities in Brighton could be served by the existing rail service from Burgess Hill.
Retail	• Improved connections to the NewRiver Retail shopping centre in Burgess Hill will be a key market for public transport investment. • This will help give Burgess Hill the opportunity to become the retail heart and key shopping destination in the area.	• Haywards Heath is a competing market for retail activity in Burgess Hill.[1]	• Brighton and Crawley are the key competing markets for retail activity in Burgess Hill.[2] • More direct buses to retail centres in Brighton and Crawley could help serve this demand until a better retail offering is available in Burgess Hill.

[1] NewRiver Retail. 2011. A vision for Burgess Hill Presentation. Available at <http://www.nrr.co.uk/wp-content/uploads/2011/11/Burgess-Hill-Investors-Presentation-Final-LR1.pdf>.

[2] *ibid*

The public transport strategy aims to target the key markets as identified above. Public transport routes that can combine and serve more than one market while maintaining desirable journey times, where viable, will offer greater efficiencies and benefits.

Figure 9 and **10** illustrate conceptually the linkages that serve the internal Burgess Hill markets, including connections between new and existing key residential and employment development sites, rail stations, and the town centre.

Figure 9 shows the employment and education based markets, which links existing and future key places of work including the Science Park, the Hub, the Northern Arc West site, and the town centre (including AMEX), as well as places of education including the planned primary and secondary schools in the Northern Arc development.

Figure 10 shows the connections between the new strategic development sites as well as connections outside of Burgess Hill towards Haywards Heath and Brighton.

Figure 9. Employment and Education Based Markets

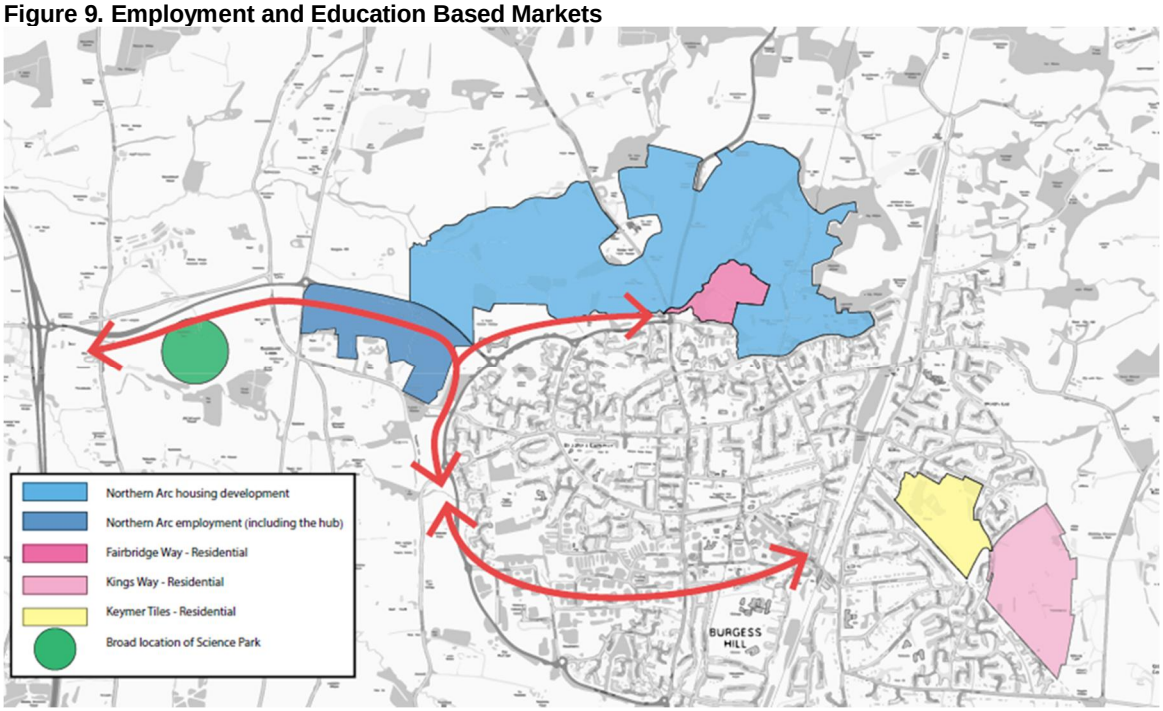
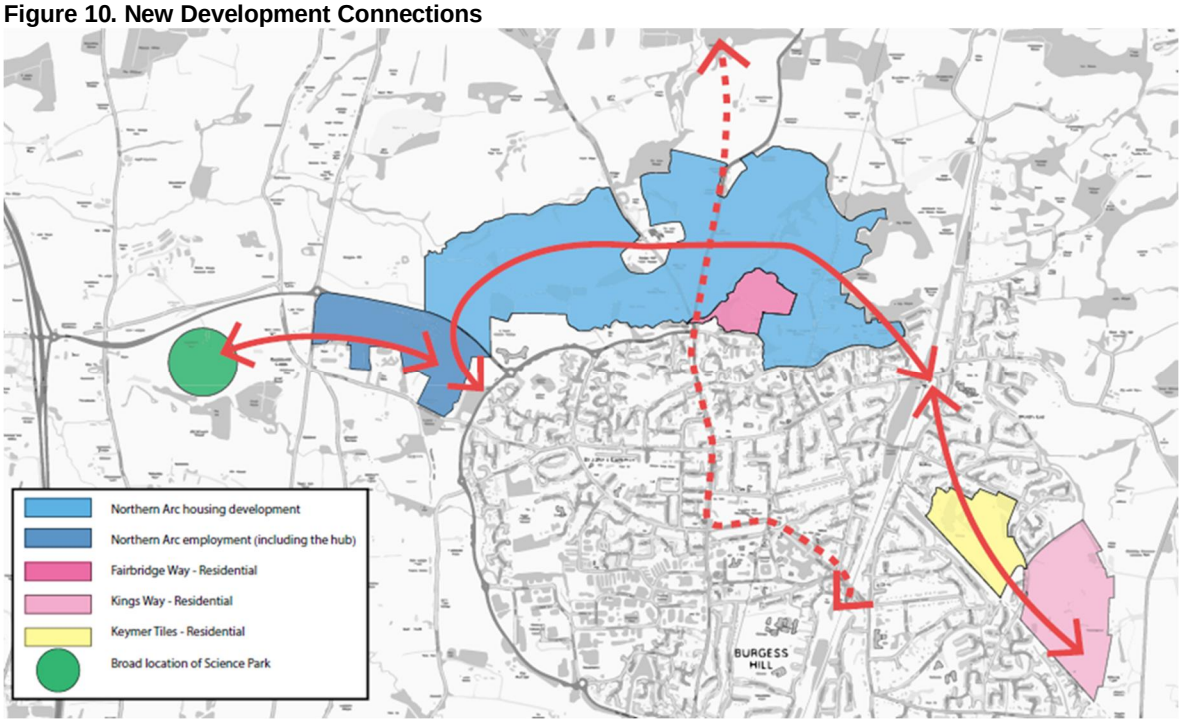


Figure 10. New Development Connections



Public Transport Strategy

06

6 Public Transport Strategy

6.1 PTS Objectives

Delivering a PTS for Burgess Hill will be a long term project. Based upon experience, this PTS will cover a 15-20 year period and aim to set a clear and tangible path to delivering the sustainable public transport vision defined for Burgess Hill within the TWS and District Plan. The PTS has been developed with the objectives of the Burgess Hill TWS, Burgess Hill District Plan and West Sussex Transport Plan in mind and aims to go further by:

- Enabling housing growth and supporting new jobs which will in turn drive economic growth in the region;
- Supporting the expansion of future major development areas;
- Ensuring that new development is both linked to the existing Burgess Hill and key public transport modes such as bus and rail;
- Connecting housing growth in Burgess Hill to the existing town centre, key amenities and destinations;
- Increasing travel choice and encouraging less reliance on the car through the identification of key market segments to target public transport investment;
- Contributing to the reduction of negative impacts of traffic volumes on the environment;
- Providing market-led strategies; and
- Creating clear nodes where services come together.

6.2 Key Criteria

The following criteria or key principles help to assess options and scenarios for the PTS and their ability to:

1. Enhance bus service provision within the town wider transport network;
2. Provide/justify frequent service, at a minimum of 15 min headways at peak hours;
3. Create connections between new developments, rail stations, and town centre;
4. Support identified key markets;
5. Support enhanced evening leisure/retail activity in the town centre;
6. Create clear nodes where services come together to create convenient interchange opportunities;
7. Deliver direct, speedy service;
8. Improve accessibility to and within the town to make it a more attractive place to live, work, and visit; and
9. Encourage modal shift away from private car journeys by making public transport and alternative, sustainable travel (e.g. walking and cycling) favourable.

6.3 Scenarios

6.3.1 Scenario 1: Independent Development

In this scenario, the status quo will be maintained where development sites continue to develop their own public transport solutions to serve individual site needs/demands, independent of the wider network. For instance, the Northern Arc development may support public transport services which link directly to the town centre but do not connect to other key sites.

The advantage of this approach is that there is potential to provide faster, more direct services from each development site to a key destination. Existing public transport services and routes may be used or amended to serve each new development.

However, the disadvantage of this approach is that patronage on each of the independent services may be limited and thus commercially less viable (unless the route could 'piggy back' onto an existing service).

This scenario is the current direction of public transport provision in Burgess Hill.

6.3.2 Scenario 2: Integrated Development

The second scenario presents the ability to knit together a more integrated public transport network as multiple development sites (new and existing) and destinations are connected together. The benefit of this approach is that it offers the potential to make a service more viable as higher demand from a wider number of sites contribute to higher patronage.

The key to making this scenario successful is to link together sites into a simple, logical route that does not compromise service reliability or frequency. Transit priority measures could be integrated to further enhance this option. This may include the provision of public transport only lanes and gates which allow public transport vehicles to move more freely and restrict regular traffic movement.

Figure 11 below is reflective of the type of integrated network envisioned for this scenario. It shows the key corridors that could be served by public transport and begins to suggest interchange areas/transport hubs where corridors converge, including the centre of the Northern Arc development, the Triangle Leisure Centre, town centre, Burgess Hill rail station, and Wivelsfield railway station.

6.3.3 Scenario 3: Integrated Development + Demand Management

Lastly, the third scenario develops Scenario 2 further by introducing travel and parking demand management measures to complement and enhance an integrated public transport network. Clearly the current levels of public transport usage, particularly that of bus only trips, reflect the ease of car use and availability of parking. To achieve higher public transport mode share at peak times and throughout the day will require a carrot and stick approach to firstly make bus and rail use as convenient and seamless as driving and secondly to restrict and control access to key destinations by car to promote alternative modes for the intended journey.

These may include, but not limited to:

Travel Demand Management

- Increasing/improving walking and cycling amenities, particularly in the town centre and at key destinations (e.g. shopping and community centres), including increasing secure cycle parking supply, providing benches at bus stops or in public spaces;
- Improving footpaths, pavements, crossings, and cycle paths;
- Introducing cycle sharing or car sharing schemes;
- Improving or enhancing wayfinding for pedestrians, cyclists and public transport users; and
- Working with employers to incentive alternative forms for transport, e.g. ride matching programmes, shuttle services, cycle promotion activities.
- Travel incentives for companies and potential promotion of a Burgess Hill card or similar App, that could be used for local services as well as parking and Town Bus services.
- Local reduced or free travel services at certain times of the day or days of the week.

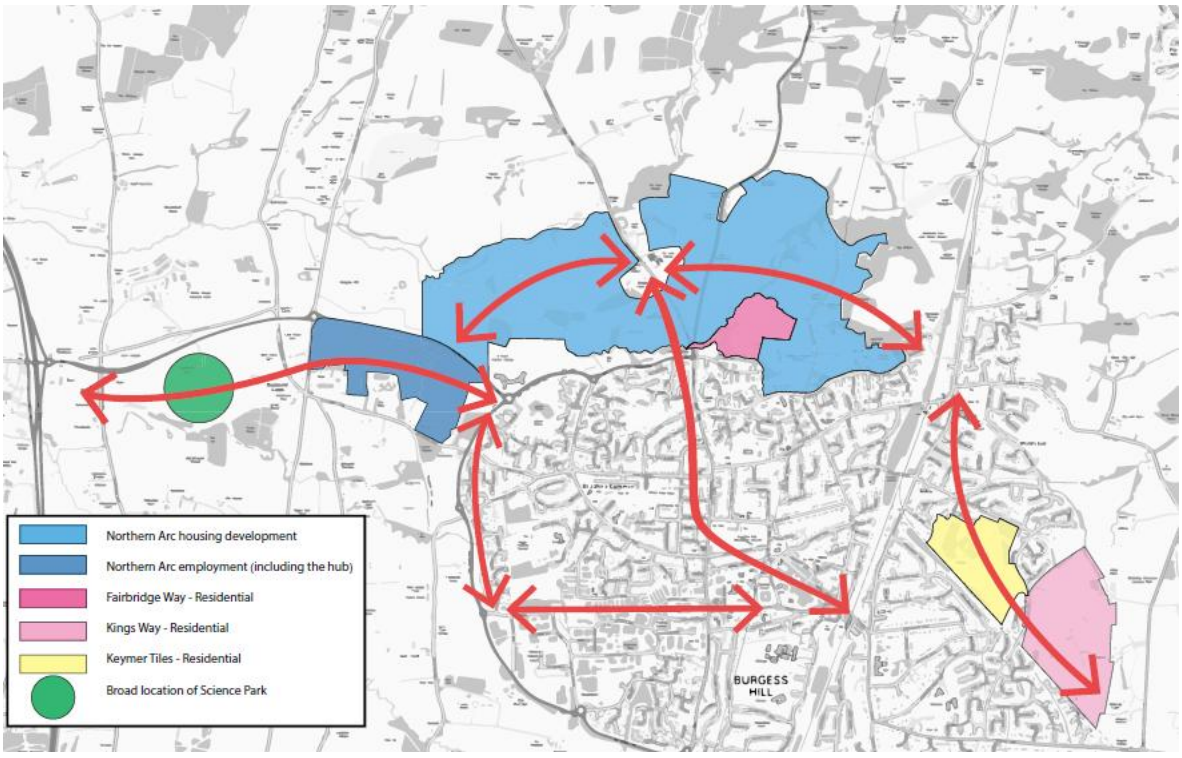
Parking Demand Management

- Restricting parking by implementing parking maximums;

- Managing on-street parking in Burgess Hill, particularly in the town centre and near railway stations through the introduction of controlled parking zones;
- Finding opportunities for shared parking schemes between complementary uses;
- Improving user information on parking availability and pricing around town (e.g. real-time displays, maps, signs, applications, websites) to avoid unnecessary circling and congestion and improve user satisfaction;
- Creating park and ride facilities at urban fringes and near public transport nodes/interchanges.

This scenario thus provides an opportunity to incorporate and consider public transport with other sustainable modes of and initiatives, such as the Green Circle Network around Burgess Hill.

Figure 11. Strategic Burgess Hill Key Corridors



Scenario Assessment

07

7 Scenario Assessment

The following table offers a qualitative, high level assessment of the scenarios against the PTS criteria as identified in sections 6.2 and 6.3. The performance of the scenarios is discussed in relation to one another under each criterion. Each scenario is awarded one out of three check marks (✓) for how well it meets the criterion, where three check marks signify that the scenario meets the criterion the best of all the scenarios. Where a question mark (?) is given, it is unclear or undetermined whether the scenario can satisfy the criterion. Further study and testing would provide a more quantitative assessment of these scenarios but this has not been undertaken within this strategy.

Table 15. Scenario Assessment against Criteria

Criteria	Scenario 1 Independent Development	Scenario 2 Integrated Development	Scenario 3 Integrated Development + Demand Management
Enhance bus service provision within the town wider transport network	✓	✓✓	✓✓✓
	• Potential to provide direct, independent PT linkages to each new development site	• Links new and existing development sites with key destinations providing a more enhanced town wide PT offering	• Same as Scenario 2 but the PT network is further enhanced with demand management measures introduced
Provide/justify frequent service, at a minimum of 15 min headways	?	✓✓	✓✓✓
	• Less likely to be able to justify a higher frequency service given patronage for individual sites may be too low to make PT commercially viable	• More likely to be able to justify a higher frequency service as patronage can be increased if multiple sites are linked together into a logical route	• Even more likely to be able to justify a higher frequency service as with Scenario 2, with the added demand management measures to make PT travel more attractive
Create connections between new developments, rail stations, and town centre	✓	✓✓	✓✓✓
	• Possibility of providing direct shuttles between individual new developments and other key destinations	• Possibility of providing services between multiple new developments and other key destinations	• Connections between new developments and other key destinations around town could be further supported with demand management measures that restrict private vehicle movements and enhance sustainable mode connections to PT services
Support identified key markets	?	✓✓	✓✓✓
	• May or may not be able to support some key markets as this scenario would not necessarily focus on improving the wider transport network, and instead supporting new passenger demand from new developments	• Greater possibility of supporting internal Burgess Hill work, leisure and retail markets as multiple developments and destinations are linked together	• Same as Scenario 2 plus benefits of demand management to enhance PT service
Support enhanced evening leisure/retail activity in the town centre	✓	✓✓	✓✓✓
	• Less likely to be able to attract enough patronage on any single, new service to support an a new, evening service, unless an existing viable service can be modified and extended	• More likely to be able to attract higher patronage if multiple sites are linked together into a logical route in order to commercially justify extended or new evening services	• Most likely to be able to support an enhanced evening service to support evening town centre activities
Create clear nodes where services come together to create convenient interchange opportunities	✓	✓✓	✓✓✓
	• Less opportunity to create clear nodes where services come together if solutions are developed independently of one another	• More opportunity to create clear nodes where services come together if solutions are developed with the wider network in mind	• Same as Scenario 2 plus opportunities to enhance passenger experience at nodes/interchanges through demand management measures, e.g. accommodating other modes of transport at nodes
Deliver direct, speedy	✓✓✓	✓✓	✓✓

service	• High potential for delivering direct, express services if only connecting individual sites to key destinations; however patronage may be an issue, particularly before full build out of development	• Good potential for delivering direct and speedy service but will require careful consideration of how service fits with entire network	• Same as Scenario 2
Improve accessibility to and within the town to make it a more attractive place to live, work, and visit	✓	✓✓	✓✓✓
	• Can improve accessibility if all new sites are connected to the town centre and rail stations	• More likely to improve accessibility from the outset if services are knitted together (with new or existing services), linking development sites together and with the town centre and rail stations	• Same as Scenario 2, with enhanced accessibility provided through connections between PT and other modes through demand management strategies
Encourage modal shift away from private car journeys by making public transport and alternative, sustainable travel (e.g. walking and cycling) favourable	✓	✓✓	✓✓✓
	• Least potential of the three scenarios to truly encourage mode shift due to low potential of providing high frequency and attractive public transport services	• More likely to encourage a shift away from private cars as a more integrated network is knitted together	• Same as Scenario 2 but would have greater potential to encourage mode shift away from private car through demand management measures

7.1 Recommended Scenario

Overall, Scenario 3 received the most checkmarks of all three scenarios and appears to perform the best against the determined criteria. Thus, Scenario 3 is the recommended option for the Burgess Hill PTS. It is recognised that implementing Scenario 3 fully will require more time than each of the other two scenarios given the integration and coordination needed with demand management programmes. Yet it is also the scenario that will prove the most efficient in tackling Burgess Hill challenges regarding public transport and mode share. It also has the potential to act as a model for other similar towns.

Therefore, Scenario 3 should be adopted and developers should contribute towards it. New developments should be required to consider and support public transport solutions which not only considers mitigation of impacts for their individual sites but rather to provide comprehensive solutions that considers impacts on the entire network in tandem with other potential new or existing developments. This may in turn require WSCC to play a facilitative role between developers and bus operators.

In the long-term, Scenario 3 will have a greater impact as public transport services increase in patronage and commercial viability alongside further phases of development buildout and occupancy and demand management programmes will be considered and implemented to further enhance the PT offering.

7.2 Proposed Public Transport Network

Figure 12 and 13 displays the principles of five proposed new (or modified) bus services which will serve the key corridors suggested as part of Scenario 3 and the key markets as discussed in Section 5, connecting the main residential and employment developments, rail stations and town centre within Burgess Hill as well as further destinations including Haywards Heath, Crawley and Brighton. Table 16 summarizes the key features of each route such as distance, key destinations, frequencies and hours of operation.

Further discussion with the bus operators would be required to understand how each of these proposed routes could be delivered (including cost implications and operation). Certain links of the proposed route could perhaps be served via extensions or modifications to existing services. Likewise the longer distance services to other parts Mid Sussex also have benefits and effects to other areas of West Sussex.

Express services: Haywards Heath – Burgess Hill – Brighton / Burgess Hill - Crawley

As discussed in Section 5.4, Crawley, Haywards Heath and Brighton are recognised as key markets for journeys to work to/from Burgess Hill. Currently, there are no high frequency bus services that serve Brighton and Haywards Heath via Burgess Hill, and the existing bus 271 connecting Burgess Hill to Crawley is a long multi-stop service at a very low frequency of 8 buses per day between 7.00 and 19.00.

Metrobus currently runs a few services between Burgess Hill, Brighton and Haywards Heath. Route 33 serves these destinations although as seen in **Table 8**, at a very low frequency of 13 buses per day between 07:00 – 19:00, or approximately one bus every 55 minutes. The best practice evidence presented in Section 5.3 and the criteria/objectives determined for the Burgess Hill PTS support a service frequency of at least 4 buses per hour at peak time (i.e. a bus every 15 minutes).

While its hours of operation are long (05:30 to 23:00), route 40/40X is a hospital centred service, running between Haywards Heath Princess Royal Hospital and Brighton Royal Sussex County Hospital, via Burgess Hill with one bus per hour. It does not necessarily cater to commuters or employment areas.

Route 769 run by Compass Travel operates only on Sundays between Sheffield Park and Brighton, only stopping in Burgess Hill once in the morning, and once in the evening on its way to/from Brighton. Otherwise, Route 769 shuttles between Sheffield Park and Haywards Heath with one bus every 75 minutes (approximately between 10:00 to 18:00).

An express, limited stop service is thus proposed between both Brighton and Haywards Heath via Burgess Hill Town Centre/station and Burgess Hill and Crawley that is focused on accommodating journeys to work, connecting residential and key employment areas. These express routes can either be an entirely new service or a modification of existing Metrobus services described above, with adjusted routes, improved frequencies and hours of operation and limited stops to better serve workers.

Regarding the route, it is proposed to follow a similar route through Burgess Hill as Route 271, which follows the A273 north and south of Burgess Hill and London Road, passing through the Northern Arc development at the western edge of the Fairbridge Way development, connecting future residents to the town centre and Burgess Hill rail station.

Key features of these routes are detailed in **Table 16**, and aim to:

- Providing frequent, reliable and limited-stops services between Burgess Hill and the existing significant journey to work destinations in Sussex, currently reliant on car travel identified to better serve workers and impact their commuting behaviour;
- Provide an alternative direct connection between new development and key employment areas not directly within rail catchments ;

The two proposed routes also have the potential of serving other non-commuter markets which could be accommodated during the inter-peak.

- Retail and leisure trips to Brighton, Haywards Heath and Crawley;
- Hospital journeys in Brighton, Haywards Heath and Crawley;

Route A: Science Park - Northern Arc-Victoria Business Park

The second proposed route is a local bus route that aims to connect the Science Park (when completed) and the Northern Arc development with Burgess Hill Town Centre and rail station in a quick and direct way. Within the Northern Arc residential and employment areas, the route follows the proposed Link Road alignment across the site and also links to the Triangle leisure centre, which could be served only during inter- and non-peak hours if necessary in order to facilitate a speedier commuter service. It then goes along London Road on the same route as the Express service to serve the Town Centre and railway station, before serving Victoria Industrial Park via London Road and Jane Murray Way as shown in **Figure 13.**

This route is currently partially covered by Metrobus route 136/137 between Royal George Road and Victoria Industrial Estate which connects the town centre, Burgess Hill station, Tesco Superstore and Victoria business park. Metrobus may consider a modification/extension of this existing service to accommodate Route A.

Whether this is a modified existing service or entirely new service, the key features of Route A are detailed in **Table 16** and aim at:

- Providing a frequent multi-stop service with a minimum 15 minute headway during morning and evening peak commuting periods (07:00 to 0:900 and 17:00 to 19:00) to serve commuters living in the new residential areas of the Northern Arc and workers of the Science Park, the Hub and Victoria Business park, and impact their commuting behaviour by offering a new reliable commuting alternative ;
- Connecting to Burgess Hill station to provide rail connections to further destinations, and if possible coincides with rail schedules; and

- Running on extended hours, starting at 6.00 and finishing at 22.00.to help facilitate more evening activities, particularly in Burgess Hill's town centre.

Route B: Northern Arc Service

The third proposed route is a local bus route that aims at connecting the Northern Arc development with Burgess Hill and Wivelsfield rail stations, the town centre, and key employment sites including the Northern Arc Employment Area, the Hub Employment Area, as well as the Former Keymer Tiles and Land East of Kings Way residential developments.

Within the Northern Arc residential and employment areas, the route follows the proposed Link Road alignment across the site and also links to the Triangle leisure centre, which could be served only during inter- and non-peak hours if necessary in order to facilitate a speedier commuter service.

Route B targets the internal commuter market segment within Burgess Hill. However, the connection to both rail stations enables work journeys to other markets including Brighton, Crawley, Haywards Heath, and other areas of Mid Sussex and London. Additionally, the internal Burgess Hill leisure market is partially served with the connection to the Triangle.

Currently, the eastern part of this proposed route is served by Metrobus service 134/135 which connects Wivelsfield station, Keymer Tiles, Land East of Kings Way, and Burgess Hill station. Metrobus may consider a modification/extension of this existing service to accommodate Route B.

Whether this is a modified existing service or entirely new service, the key features of Route B are detailed in **Table 16** and aim to:

- Providing a frequent multi-stop service with 15 minute headway during morning and evening peak commuting periods (07:00 to 0:900 and 17:00 to 19:00) to serve commuters living in the new residential areas of the Northern Arc and workers of the Hub, the town centre or further job markets, and impact their commuting behaviour by offering a new reliable commuting alternative ;
- Connecting to Burgess Hill station to provide rail connections to further destinations, and if possible coincides with rail schedules; and
- Running on extended hours, starting at 6.00 and finishing at 22.00.to help facilitate more evening activities, particularly in Burgess Hill's town centre.

Route C: Employment Centres Service

Route C route is a local bus route that is focused on connecting existing and planned places of work in Burgess Hill, including the Science Park, the Hub, Northern Arc Employment Area, and American Express, to the town centre and Burgess Hill station. It would pick up any Burgess Hill residents that work at any of these employment areas and who live in close proximity to the town centre and Royal George Road. The route also passes through the Triangle Leisure Centre, and is therefore able to accommodate leisure centre staff and visitors.

With the exception of the new development sites (Northern Arc Employment Area, the Hub, and Science Park), Route C is already partially accommodated by existing Metrobus service 134/135 between the Triangle and Burgess Hill station. Route C would complement existing services 100 and 136/137 which currently serve the employment areas around Victoria Way.

Whether this is a modified existing service or entirely new service, the key features of Route C are detailed in **Table 16** and aim to:

- Providing a frequent multi-stop service with 15 minute headway during morning and evening peak commuting periods (07:00 to 0:900 and 17:00 to 19:00) to serve workers and impact their commuting behaviour by offering a new reliable commuting alternative ; and
- Operating a limited service during the inter-peak and on the weekends due to the largely employment market focus of this route.

Interchanges

Together with the existing network, the proposed PTS public transport routes will enable more comprehensive travel within Burgess Hill, providing greater route choice across the town and connecting residents, visitors, and workers from and to new and existing destinations. Several interchanges are proposed where new and existing routes come together to allow passengers to move freely across the town. These include, the town centre, the Triangle, and within the centre of the Northern Arc development where the A273 intersects with the proposed link road.

The town centre will provide the greatest point of interchange across all routes as well as with Burgess Hill Rail Station. The Triangle leisure centre will become a major interchange point to/from the leisure centre, Northern Arc residential areas, the town centre, and several places of work including the Hub and Science Park, AMEX, and Victoria Way industrial area. The Northern Arc interchange will facilitate movements north outside of Burgess Hill towards Haywards Heath and Crawley, and south towards the town centre and Brighton (via new the Brighton Express route or other existing routes). It will also accommodate east-west movements via proposed Route B across the Northern Arc area and east towards Wivelsfield Station or west towards the Triangle; and via route C east towards Kings Way or west towards the Triangle, the Hub and the Science Park via the town centre.

7.2.1 Phasing

Error! Reference source not found.**14 to 16** show the proposed public transport network against the phasing of the strategic development sites as currently understood. The majority of the sites will be developed during the first period between 2015 – 2020, with the exception of the Hub and parts of the Northern Arc Central and East sites coming on between 2020 and 2025. As the Science Park is an aspirational scheme, it is estimated for completion between 2025 and 2030.

Phase 1 (2015-2020)

The first phase of Burgess Hill transport strategy happens in relation with the completion of certain development sites.
Therefore, large sections of local routes A, B and C will be delivered in this first phase:

- Route A will run from the Hub along Sussex Way and then through Northern Arc then along London Road to the Town Centre and Railway station and finishing at Victoria Business Park.
- Route B will run from East of Northern Arc Central to Wivelsfield station via a temporary route along Maple Drive whilst Northern Arc East is developed and the infrastructure needed for this route are available. It then goes along through Keymer Tiles site and back to Burgess Hill station via Kings Way and Folders lane.
- Route C will run from the Hub to the Triangle before heading to the town centre and rail station via Royal George road. It will then head to Land East of Kings way via the same route as bus route B.
- The Express service Brighton/Haywards Heath/ Crawley will be fully developed during this first phase, efficiently connecting key employment areas in Brighton to Haywards Heath via Burgess Hill, and Burgess Hill to Crawley.

This first phase of public transport development will also be supported by quality walking and cycling connections to bus stops along the routes, and parking demand management incentives positively impacting the attractiveness and use of public transport.

This phasing will allow the newly developed sites to be served by bus routes and connected to the main local destinations that are the two stations and town centre of Burgess Hill from the outset, being the best way to impact changing behaviour and work towards a modal shift.

It will also create 2 different bus hubs facilitating interchange between all the local and long distance routes proposed:

- East of Northern Arc Central for route A, B and the long-distance buses to Crawley, Haywards Heath and Brighton
- The Town Centre and Rail station where all routes proposed are converging.

Phase 2 (2020-2025)

The second phase of the PTS aims to connect the newly developed Northern Arc West and East to the proposed network.

Therefore, it will take route B back onto its original intended route assuming the completion of the infrastructures needed to run it through Northern Arc West and East.

It will then continue on the same route as route A, serving Northern Arc Central and East to the Hub where it terminates.

This second phase will also require additional qualitaty walking and cycling connections to bus stops along the route extension, in addition with the ongoing implementation of parking demand management programmes.

This extension will lead to an additional bus interchange in the Hub, allowing commuters to access 3 different services serving local development areas and town centre/rail station for further destinations.

Phase 3 (2025-2030)

The third and last phase of the PTS focuses on extending Routes A and C to the Science Park assuming the completion of this strategic development.

Like the previous phases, this phase will also require additional quality walking and cycling connections to bus stops along the route and complementary, parking demand measures positively affecting the attractiveness of the existing and proposed public transport network.

This last phase will complete the proposed PTS.

7.3 Possible Modifications to Existing Public Transport Services

As depicted in **Table 8**, bus services in Burgess Hill currently do not operate into the late evening/night time. With the current retail offering in Burgess Hill, particularly within the town centre, it is difficult to justify extending existing bus service hours further into the night as there is a limited evening or late night economy. Retail shops tend to close around 18:00 between Mondays and Saturdays, and earlier on Sundays. Only restaurants and pubs – of which there are limited numbers – remain open later into the evening.

WSCC may consider supporting extending the hours of operation of at least one existing route into the late evening as a way of incentivising (i.e. priming) more evening activity in Burgess Hill. It is here proposed to extend both routes A and B to 22.00 on weekdays and Saturdays to address the lack of public transport after the PM peak time in the first instance. Other possible options to increase later services and support an evening/night economy in Burgess Hill would be to run one of these proposed routes after 22.00, or run a more frequent service on the existing 40/40x route which is the only service that presently runs till 23:00.

The modified bus service should also make sure that it operates in tandem with the new NewRiver Retail shopping centre's hours of operation during the weekdays and weekends. The new shopping centre is a pivotal part to Burgess Hill's town centre regeneration and enhancement of a retail and leisure and entertainment quarters with bars, restaurants and multiplex cinema significantly improving the nigh time economy (as identified within the Burgess Hill Neighbourhood Plan). A public transport network/service that fully allows patrons from within and outside of Burgess Hill (i.e. within the primary catchment area) to conveniently access the shopping centre is essential to shifting the current trend of driving.

The Triangle is another key node for leisure/entertainment in Burgess Hill which stays open until 23:00 on weekdays and 21:00 on weekends. With the addition to the existing network of proposed PTS Routes A, B and C, public transport access to the Triangle will be increased. WSCC may also consider supporting extending the hours of operation for one of the routes that serve the Triangle to operate later in the night in order to accommodate leisure centre users.

7.4 Concept Network for Burgess Hill

The concept behind the proposed public transport network for Burgess Hill is to provide the key linkages from the new development areas to the Town centre station as shown in **Figure 12** below.

The routes proposed are as follows and shown in **Figure 13.**

Figure 12. Principles for proposed PTS Bus Routes

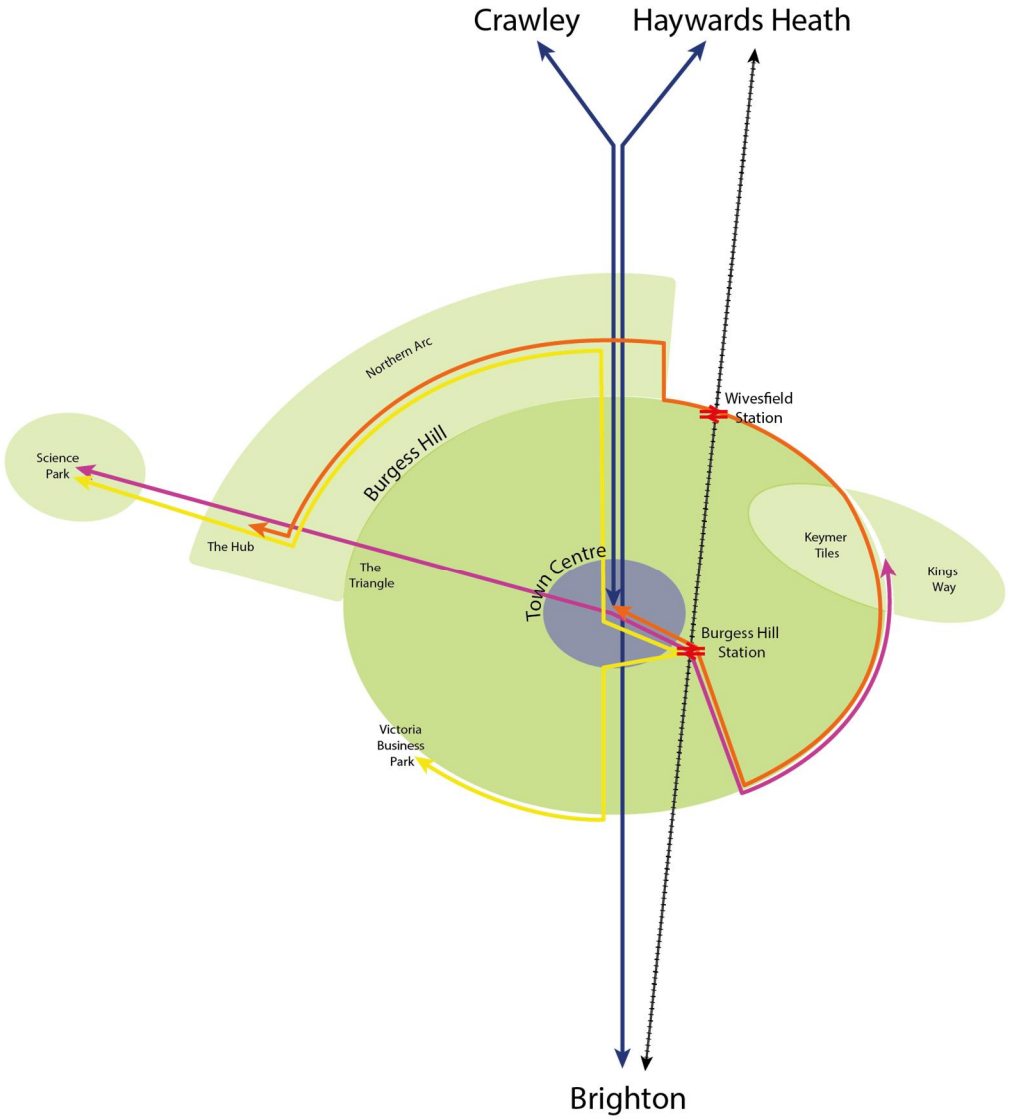


Figure 13. Proposed PTS Routes

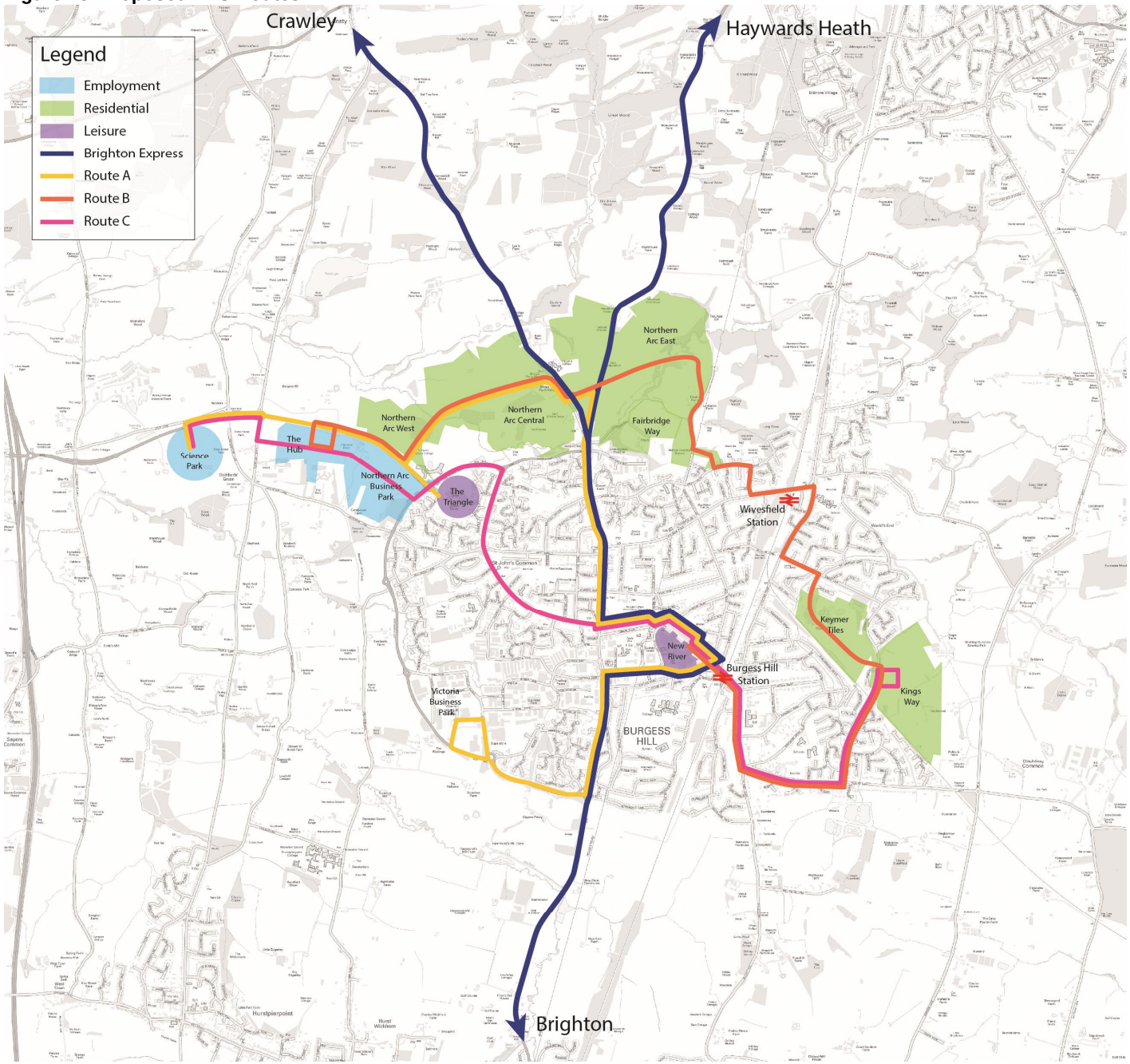


Table 16. Key features of the Proposed PTS routes

		Long-distance Express	Route A	Route B	Route C
Full distance		Burgess Hill to Crawley: 16 miles Brighton to Haywards Heath: 15 miles	Up to the Hub : 5miles Total route up to science park : 6 miles	Northern Arc Central to Town Centre: 4 miles Total route: 5.3miles	The Hub to Kings Way : 4.2 miles Total route to Science park: 5 miles
Hours		7:00 to 19:00 Monday to Friday 8:00 to 19:00 Saturdays No service on Sundays	Starting early morning (6:00) and finishing at 22:00. 8:00 to 22:00 on Saturdays 8:00 to 19:00 on Sundays	Starting early morning (6:00) and finishing at 22:00. 8:00 to 22:00 on Saturdays 8:00 to 19:00 on Sundays	Starting early morning (6:00) and finishing at 19:00 (end of PM peak hour) No service on weekends
Frequencies Mon-Fri	6:00 to 7:00	No service	Every 30 minutes	Every 30 minutes	Every 30 minutes
	7:00 to 9:00	Every 20 minutes	Every 15 minutes	Every 15 minutes	Every 15 minutes
	9:00 to 15:00	Every 30 minutes	Every 20 minutes	Every 20 minutes	Every 20 minutes
	15:00 to 19:00	Every 20 minutes	Every 15 minutes	Every 15 minutes	Every 15 minutes
	19:00 to 22:00	No service	Every 20 minutes	Every 20 minutes	No service
Frequencies Saturday	6:00 to 7:00	No service	No service	No service	No service
	7:00 to 8:00	No service	No service	No service	No service
	8:00 to 15:00	Every 30 minutes	Every 20 minutes	Every 20 minutes	No service
	15:00 to 19:00	Every 20 minutes	Every 20 minutes	Every 20 minutes	No service
	19:00 to 22:00	No service	Every 20 minutes	Every 20 minutes	No service
Frequencies Sunday	6:00 to 7:00	No service	No service	No service	No service
	7:00 to 8:00	No service	No service	No service	No service
	8:00 to 15:00	No service	Every 20 minutes	Every 20 minutes	No service
	15:00 to 19:00	No service	Every 20 minutes	Every 20 minutes	No service
	19:00 to 22:00	No service	No service	No service	No service
Phasing (see phasing table and map for more details)		All the long distance express route will be operational in Phase 1 (before 2020)	Route A will be mostly delivered during phase 1 from the Hub to Victoria Business Park. It will be extended in Phase 3 (2025-2030) to the Science Park once it is completed.	Route B will be delivered through phase 1 from East of Northern Arc to Burgess Hill Town centre, using a diversion route whilst the Northern Arc East development is being built. It will then be extended to Northern Arc West and use its original route through Northern arc east through Phase 2 (2020-2025).	Route C will mostly be delivered through phase 1 at the exception of the section serving the hub to the science park, which will be delivered in Phase 3 once the Science Park is completed.

Figure 14. Development Phasing and Proposed PTS Routes

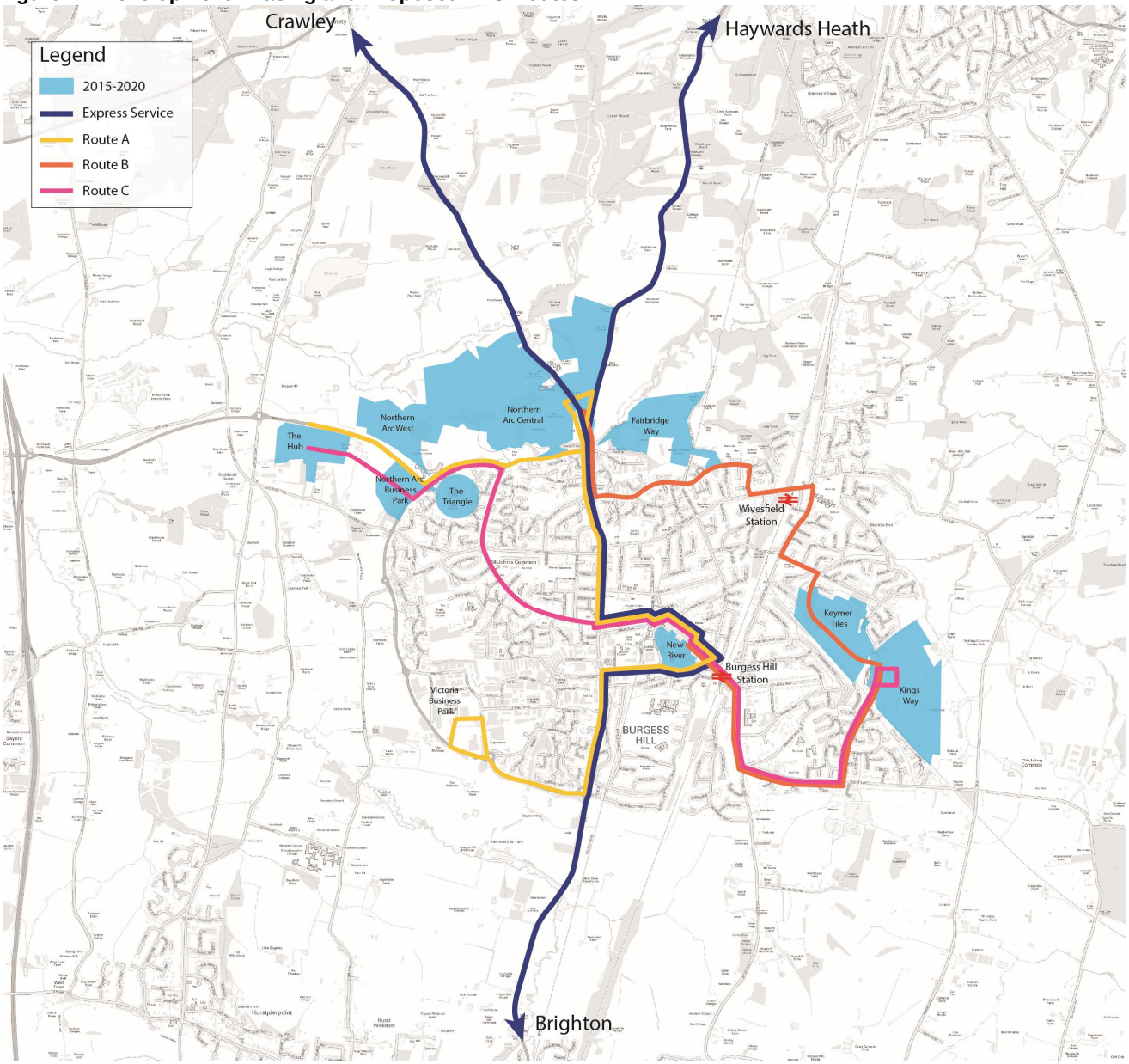


Figure 15. Development Phasing and Proposed PTS Routes

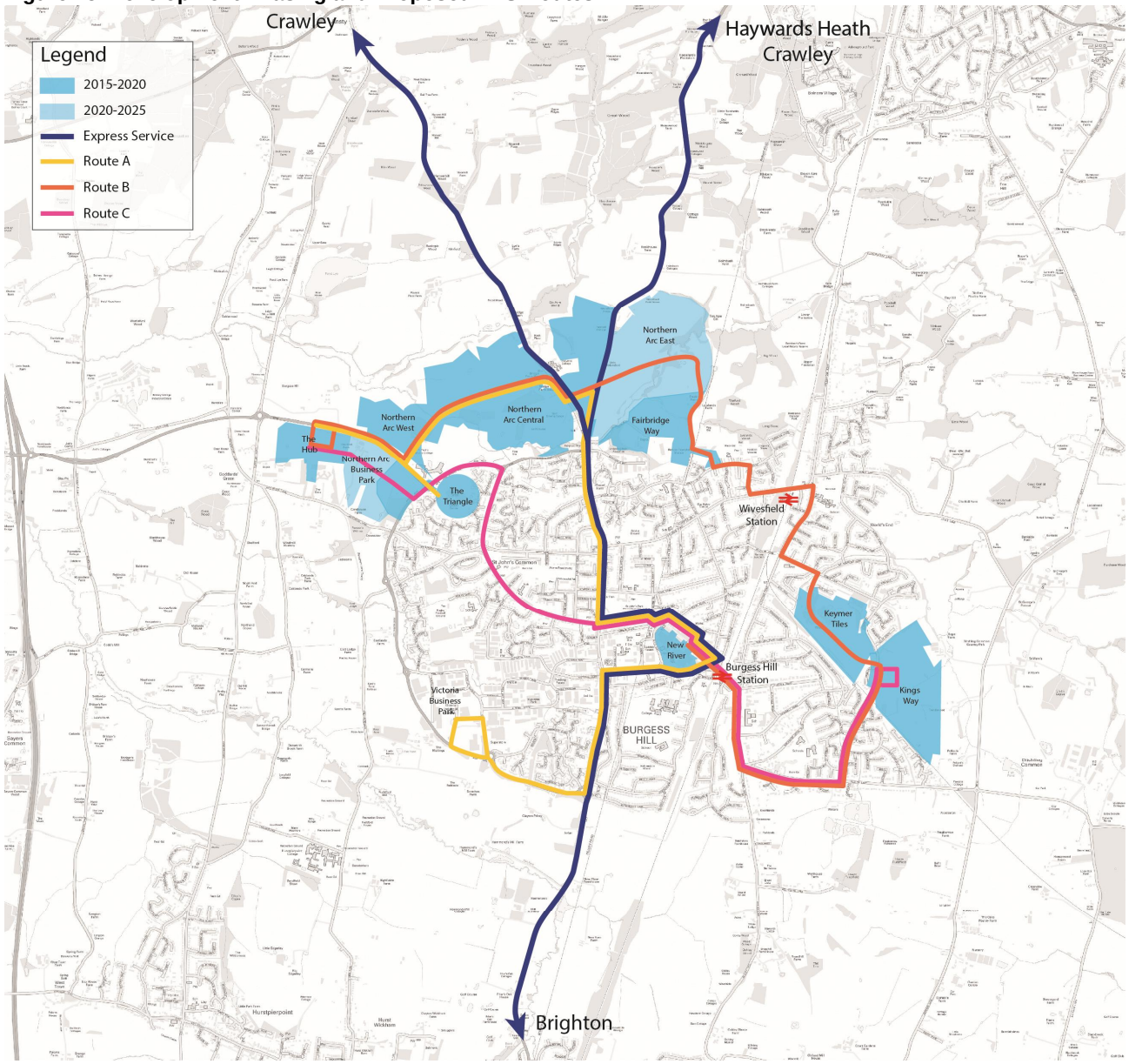
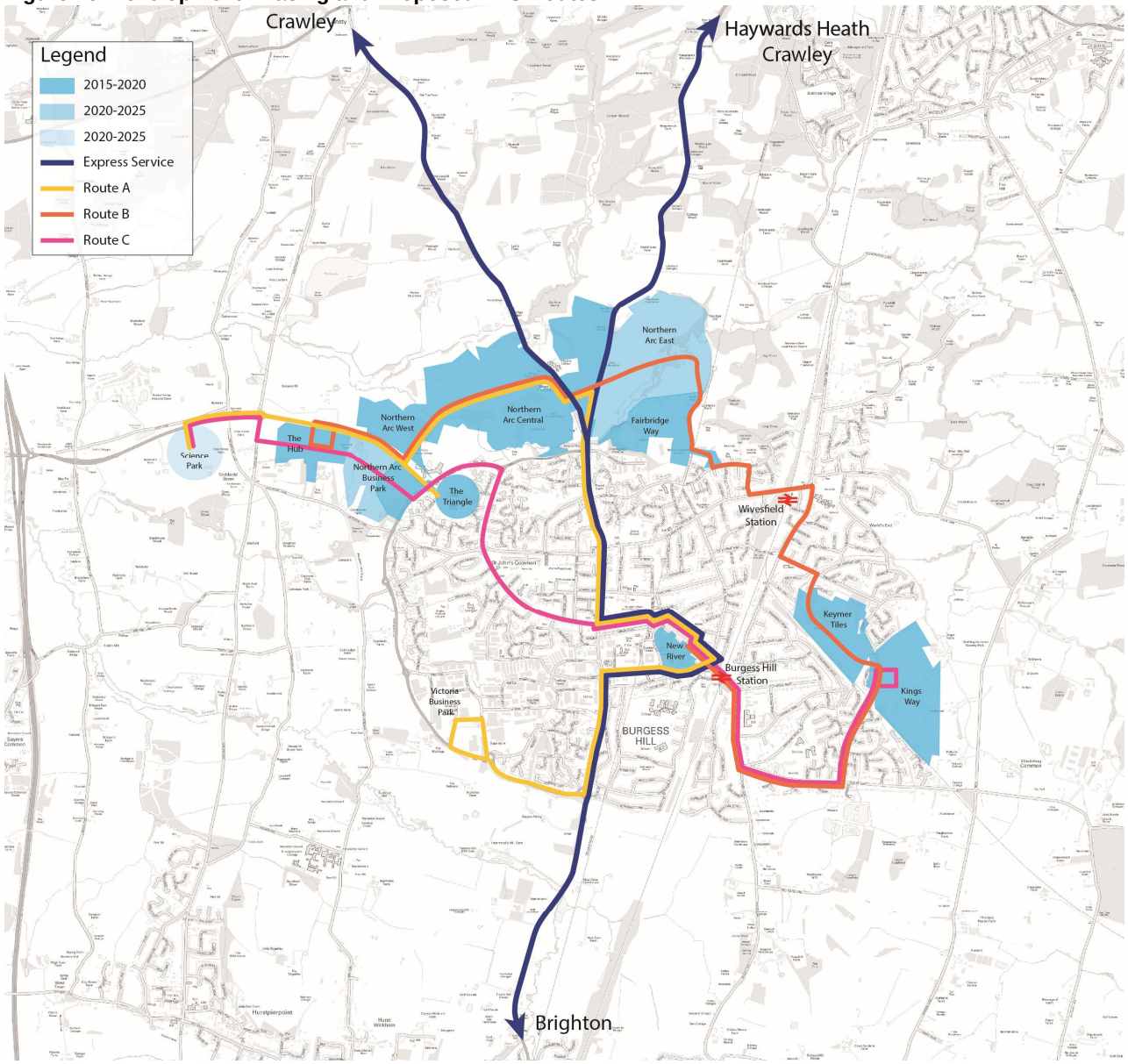


Figure 16. Development Phasing and Proposed PTS Routes



Priorities/Measures

08

8 Priorities/Measures

Burgess Hill Public Transport Strategy put forward a set of services which we believe will have an impact on sustainable travel and shift in mode for the key sites. The proposed network reinforces the role of the town centre and the rail stations. It connects these to the new proposed and potential development sites in the Northern Arc and across the town.

We have been ambitious in the provision of the network identified in order to illustrate a step change in provision. But new services alone will not engender a shift to public transport without complimentary demand management measures to make the bus network attractive to new residents and employees.

Based on the evidence shown and the assessment conducted, the following markets are suggested for prioritisation:

- Access to rail for longer distances (e.g. London, Brighton), including:
    - Improving multi-modal connections to Burgess Hill and Wivelsfield rail stations
    - Frequent and timely bus connections that coincide with rail schedule;
    - Limited access to parking or pick-up/drop-off at stations; and
    - Improved walking and cycling amenities linking to and at the stations.
- Access to the town centre to sustain redevelopment, which will rely on:
    - Provision of improved bus services to accommodate retail and leisure activities (e.g. to access the NewRiver Retail shopping centre);
    - Provision of bus services with evening, nightly and weekend hours of service;
    - Higher frequency morning and evening bus services between residential areas and the town centre to accommodate commuting trips and hours of work. This is to encourage a shift away from driving commuting trips within Burgess Hill.
- Access to new development to ensure sustainable travel from the outset:
    - The distance between the Northern Arc developments and the town centre means that a bus-based public transport connection is likely to be the most appropriate mode supported by walking and cycling as the main modes of travel;
    - Given its proximity to the Northern Arc sites, relative to Burgess Hill station, Wivelsfield station may be the more logical connection to prioritise;
    - As evidenced in Section 4, **Table 11** (Future PT demand from new residential sites) the highest demand for public transport is 402 person trips to/from the residential areas in the AM peak. This roughly equates to 8 or 9 buses per peak hour (assuming a 50 passenger bus capacity), which would theoretically justify a high frequency 10 minute headway service serving these sites. Further dialogue with bus operators would help determine ways of implementing such a service.
    - Similarly, as seen in Section 4, **Table 12** (Future PT demand from employment sites), the highest demand for public transport is in the AM for 104 person trips to/from the employment sites, which would equate to approximately 2 to 3 buses (assuming a 50 passenger bus capacity) during the peak hour. This however does not translate into a high enough patronage to warrant a 15 minute headway service. Discussions with bus operators would help to determine ways of making a service more viable and attractive. This may perhaps involve linking these sites to other destinations to establish higher patronage in such a way that does not compromise service reliability and speed.
- Access to other areas in Mid Sussex (Haywards Heath)

In order to implement or target the identified priority areas above, there are two main areas of measures for consideration:

- Enhancing or modifying existing bus service to target priority markets and new demand. This could involve:
    - Rerouting existing routes;
    - Modifying hours of service;
    - Improving frequency of service;
    - Implementing bus priority measures to improve reliability, frequency, and journey times. This may include the introduction of: segregated bus priority lanes, bus gates, signal priority systems, contra flow bus lanes;
    - Improving customer experience with real time passenger information systems and service upgrades such as smart card ticketing;
    - Providing a free bus service within the town centre during certain periods of the day; and
    - Initiating a local travel plus other services card for Burgess Hill to encourage use of public transport services.
- Developing attractive, reliable and high frequency new bus services to target priority markets and service new demand; or
- A combination of existing and new services.

8.1 Infrastructure Requirements

Infrastructure improvements are required to deliver the proposed PTS and measures discussed above. These are described below and in **Table 17**:

- Burgess Hill and Wivelsfield Rail Station Improvements including new bus stops featuring real time passenger information, cycle and car parking, enhanced interchange and waiting areas;
- 20mph zones outside Burgess Hill and Wivelsfield Stations;
- Controlled Parking Zone (CPZ) in the town centre and around Wivelsfield Station to discourage travel to the rail station by private car except for trips that require this mode and ease access for buses in these areas;
- New bus stops on Cants Lane;
- Traffic Management on Cants Lane to facilitate a high frequency bus service to operate; and
- Northern Arc Link Road, bridge link between Central and East sites and River Adur bridge on the link road.
- Providing a vehicular link between the Northern Arc employment zone and The Hub to enhance public transport connectivity

8.2 Evaluated costs

8.2.1 Operating costs

Operating costs have been sourced through discussions with Metrobus. For the purposes of this PTS, the costs have been presented as annual gross operating costs. These costs take no account of fare receipts or the ability to utilise exsiting routes to establish the PTS. The costs should therefore be viewed as worst case and treated with caution. These costs are outlined in **Table 17** below.

For the Town Services (Routes A, B and C), clearly the cost running these services will be significant and on the basis of current mode share in the town, it is likely that there will be a significant shortfall in revenue to cover operating costs in the early days of operation. We have identified where there are overlaps with current services and the scope exists to hold further discussions with the operators to establish whether savings could be made to their implementation without diluting the principles behind the network.

For the longer distance services their contribution to retaining the existing mode share to bus and translating that to new residents should not be underestimated. It is recognised that to provide the frequencies indicated would be costly for the likely level of patronage. However, peak frequencies would be essential on the long distance services These services should therefore be further discussed by the county as a part of a wider opportunity for the area.

8.2.2 Infrastructure costs

The ability to make bus services attractive for users and to provide them with an advantage over car journeys and potential congestion will require bus priority infrastructure in the town. Likewise the ease of access to the Town Centre and to the interchange with rail at both stations will also require investment. Finally travel demand management measures including parking controls and local incentives will be necessary to reinforce the package of measures to create a step change in public transport for the Town.

Table 18 below outlines the measures identified, their indicative costs and their timing in relation to the Phasing of development.

Table 17. PTS gross operating cost per route

Routes	Long-distance Brighton-Haywards Heath	Long-distance Burgess Hill- Crawley	Route A	Route B	Route C
Destinations	Fast and direct subregional bus service connecting : - Key employment sites in Brighton - Burgess Hill railway station and Town centre - East of Northern Arc - Haywards Heath	Fast and direct subregional bus service connecting : - Burgess Hill railway station and Town centre - East of Northern Arc - Crawley	Local bus service connecting : - The science park - The hub and Northern Arc employment area and West of Northern Arc residential area - Burgess Hill Town centre and Railway station - Victoria Business Park where it terminates	Local bus service connecting : - The hub and Northern Arc employment area - All through Northern Arc - East of Fairbridge way - Wivelsfield railway station - Keymer Tiles and Kings Way development sites - Burgess Hill railway station and Town centre where it terminates	Local bus service connecting: - The Science Park - The hub and Northern Arc employment site - The triangle - Burgess Hill Town Centre and Railway station - Keymer Tiles and Kings Way development sites where it terminates
Evaluated Annual Gross Operating Cost	£2.8 million 12 buses peak time 8 buses off-peak time	-	£1 million 4 buses peak time 3 buses off-peak time	£1 million 4 buses peak time 3 buses off-peak time	£700,000 3 buses peak time 2 buses off-peak time
Phasing (see maps and table for additional details)	Route developed through Phase 1 (2015-2020)	Route developed through Phase 1 (2015-2020)	Route developed through Phase 1 (2015-2020) and Phase 3 (2025-2030) for the Science Park	Route developed through Phase 1 (2015-2020) and Phase 2 (2020-2025)	Route developed through Phase 1 (2015-2020) and Phase 3 (2025-2030) for the Science Park

Note :

The evaluated annual gross operating costs stated above are based upon the assumptions of entirely new routes and are not taking any account of fares. Considering the fares of each trip and the potential arrangements with existing routes by the bus operators, the actual cost of operation of each route will be affected.

Table 18. PTS capital cost and phasing per infrastructure needed

Infrastructure	Capital cost	Phasing	Route corresponding
Controlled parking zone in the town centre	£700,000	Phase 2 (2020-2025)	All routes
Controlled parking zone at Wivelsfield station	£100,000	Phase 2 (2020-2025)	Route B
Wivelsfield and Burgess Hill stations interchange improvement	£500,000	**Phase 1 (2015-2020)**	Route B and C
20mph zones out of Wivelsfield and Burgess Hill stations	£100,000	Phase 2 (2020-2025)	Route B and C
New bus stops (Cants Lane)	£30,000	**Phase 1 (2015-2020)**	Route B
Cants Lane traffic management	£50,000	**Phase 1 (2015-2020)**	Route B
Northern Arc Access road	£11,8 million	**Phase 1 (2015-2020)**	Route A and B
Bridge over river Adur	£3,3 million	**Phase 1 (2015-2020)**	Route A and B
Northern Arc Central to Eastern Site Bridge	£2,7 million	Phase 2 (2020-2025)	Route B
Northern Arc Eastern Site Bus Gate	£50,000	**Phase 1 (2015-2020)**	Route B

Conclusions

9

9 Conclusions

The Burgess Hill Public Transport Strategy has been developed to provide a vision for how the town can be best served by public transport and how the proposed developments across the town can contribute towards sustainable transportation.

An analysis was undertaken to provide a first principles evidence base for establishing the existing baseline and future conditions for public transport in Burgess Hill. This involved a review of background policy, an analysis of 2011 Census Travel to Work data, and a review of existing public transport services provided. The potential public transport demand from future residential and employment developments across the town was also considered.

Using this evidence to establish target markets for public transport in Burgess Hill, public transport scenarios were developed and assessed against established criteria. The target market analysis demonstrated a high potential for:

- Diverting the large share of car trips taken to commute within Burgess Hill to public transport;
- Accommodating improved public transport access for longer distance trips between Burgess Hill and other areas of Mid Sussex (such as Haywards Heath and Crawley), London, and Brighton; and
- Ensuring access to new developments within Burgess Hill via sustainable modes from the outset to encourage a mode shift away from car journeys.

It will thus be critical to ensure that:

- Public transport services are easily accessed from and connected to these new developments;
- The services are linked/routed in such a way that it is commercially viable for operators;
- The services serve new and existing demand; and
- There is enough patronage to commercially justify shorter headways to make the service more attractive.

Our analysis also found that the most favourable public transport scenario for Burgess Hill would be to encourage an integrated public transport network that knits together multiple development sites and which is in the longer term complemented by parking and transport demand management strategies.

A new public transport network has been proposed for the PTS which introduces three new local routes to connect new and existing development sites, the town centre, rail stations, and allow for interchange with the existing network, providing enhanced connectivity for residents, workers, and visitors. A fourth route will provid longer distance journeys to Brighton, Crawley and Haywards Heath identified as the key markets for Burgess Hill, and connecting with an improved interchange within the local town centre.

9.1 Next Steps / Further Work

The following steps would help to continue to provide a stronger evidence base and case for the PTS and to further refine the measures necessary to achieve the PTS objectives:

- Discussions with bus operators to understand:
  - Current patronage and operation of existing services, challenges and opportunities;
  - Strategies to accommodate future demand; and
  - Refinement of costs and phasing for implementing improvements ;
- Conducting a more detailed parking study for the Burgess Hill town centre to understand existing and future capacity and demand for parking in the town centre in order to determine appropriate demand management measures that will enhance public transport and other sustainable transport offerings. This would help to further develop Scenario 3.

- Identification of potential funding sources for infrastructure improvements required to take forward the PTS; and
- Further development of other public transport incentives (e.g. the Burgess Hill card, smart ticketing, town centre free bus service, etc.).

Sources

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