

FINAL



Whittlesford Station Transport Masterplan Addendum



6 January 2020



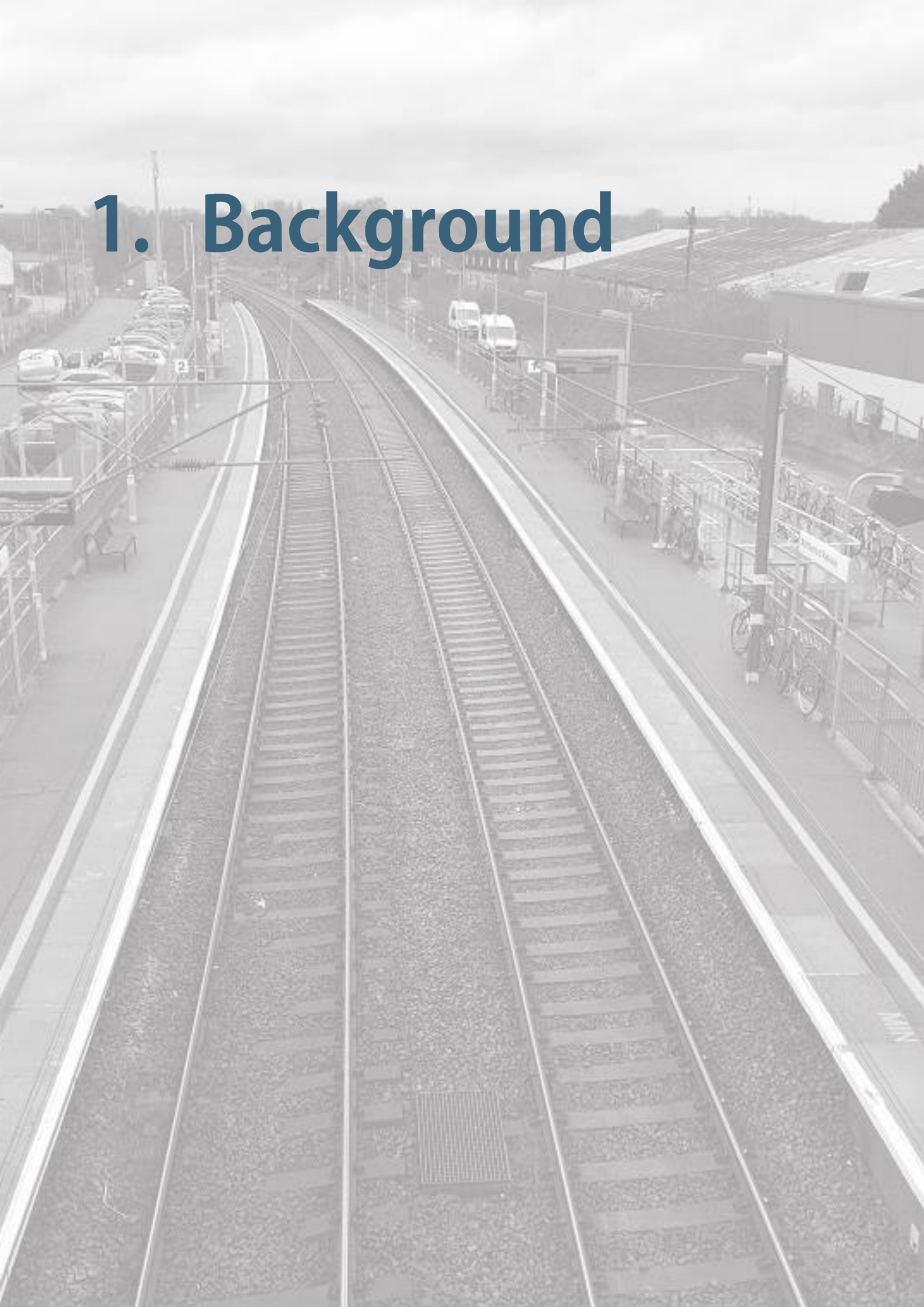


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1. Background



1.0 Background

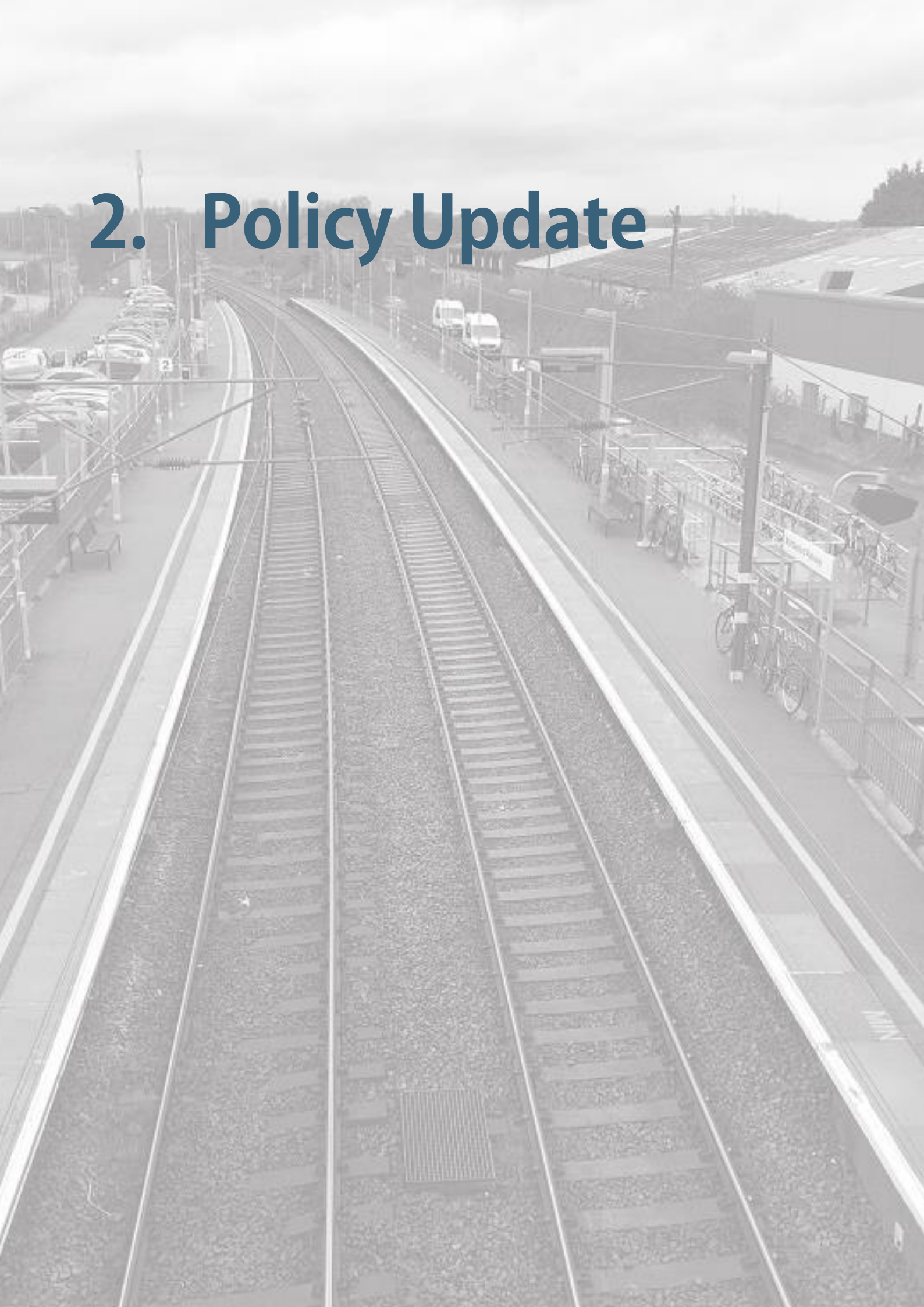
1.1 Overview

- 1.1.1 In April 2018, WYG were commissioned by the Greater Cambridge Partnership (GCP) to produce a masterplan for Whittlesford Station. At the heart of this was the need to enhance the capacity and connectivity of the station to help facilitate sustainable growth in the local area and reduce the impacts of car-based travel into Cambridge.
- 1.1.2 Following the submission of the masterplan to the GCP in December 2018, a round of public consultation was held in the summer of 2019. This identified broad support for the priorities proposed for the various measures within the masterplan. However, as a consequence of the pace of change and level of interest shown by house builders and businesses wishing to expand or locate within the area, the context within which the masterplan sits has evolved.

1.2 Structure of the Document

- 1.2.1 This addendum seeks to update the masterplan to reflect the changes which have occurred during 2019, focusing upon the following:
 - **Policy** – Provides a review of policy changes and updates, and studies which have been undertaken in 2019 and which many have implications for the priority given to the interventions contained within the masterplan.
 - **Perceptions** – Highlights the views of key stakeholders in the area, including transport providers, local authorities and those businesses or developers looking to invest within Whittlesford and its wider catchment.
 - **Proposals** – Quantifies the location, nature, scale, status or development proposals within the area and the implications these may have on changes in demand and patronage at the station, and if the additional capacity identified within the masterplan is sufficient to accommodate the extra trips anticipated.
 - **Projections** – Estimates changes in use of the station in the 15-year period up until 2033, based upon alternative methodologies for calculating increases in patronage.
 - **Bus Services** – Suggests future bus service provision which may complement the infrastructure improvements contained within the masterplan.
- 1.2.2 Due to the medium to long term nature of the masterplan and the timeframes within which to deliver the schemes it contains, it is anticipated that this should form the first of regular updates in seeking to keep the framework for investment it provides, relevant and effective.

2. Policy Update



2.0 Policy Update

2.1 Overview

- 2.1.1 This section provides an overview of the policy development and studies which have been published in 2019 and draws out the potential implications for future investment at Whittlesford Station.

2.2 Planning Policy

- 2.2.1 The planning policy context within which the redevelopment of Whittlesford Station must be considered is evolving, with the main changes set out below.

Greater Cambridge Local Plan

- 2.2.2 Work has commenced on the production of a new joint Local Plan between Cambridge City Council and South Cambridgeshire District Council, to replace each authorities respective Local Plans. Consultation has commenced on the Issues and Options stage.
- 2.2.3 A 'call for sites' has been made and this process will highlight all of the potential development locations to be considered for inclusion in the Local Plan. It is anticipated that this process will identify a large number of options in the hinterland of Whittlesford Station, but they are not in the public domain at this stage.
- 2.2.4 It is therefore too early in the process to be able to estimate the future scale of development to be allocated within the area, but the impression is that there is a desire and opportunity to expand both the housing and jobs provision in the direct hinterland of Whittlesford station.

2.3 Transport Policy

- 2.3.1 The following transport policy documents and studies have been produced since the Masterplan for Whittlesford was submitted to the GCP.

The Cambridgeshire and Peterborough Local Transport Plan

- 2.3.2 The first Cambridgeshire and Peterborough Local Transport Plan (LTP) was published in June 2019 by the Combined Authority, following which a 14-week consultation period was held over the summer. The Plan is in two parts – the first sets out the vision, goals, objectives and policies for the area, whilst the second forms a delivery plan for the implementation of schemes up to 2035.
- 2.3.3 The vision of the LTP is to deliver a world class transport network that supports sustainable growth and opportunity for all, with three supporting goals focus on the economy, society and the environment. A series of ten objectives sit under these with a further 101 policies establishing the approach to investment in transport in the coming years.
- 2.3.4 References are included relating to the desire to connect all new and existing communities sustainably and take advantage of the agglomeration benefits to businesses as a result of the life science clusters for example, whilst the needs of rural communities are also drawn out and reflected in the range of policies identified. The need to improve inter-urban bus services, combined with local rail services, at the centre of an integrated rural public transport network is highlighted along with the need for better orbital public transport provision and improvements to the A505.

- 2.3.5 A large number of policies within the Plan are relevant to investment at Whittlesford including improving the accessibility and connectivity of public transport links, and delivering sustainable transport connectivity to tourist destinations in rural areas (IWM for example).
- 2.3.6 The LTP recognises the need for a more integrated network, and the reference to Rural Travel Hubs in the Delivery Plan provides some assurances that investment at Whittlesford is a realistic possibility.

Cambridge Corridor Study: Railway Investment Choices

- 2.3.7 The Cambridge Corridor Study was produced by Network Rail with support of the CPCA, GCP and CCC, in February 2019. It assessed the potential levels of demand at Cambridge Station in both 2033 and 2043 forecast years, and the infrastructure required to accommodate the anticipated increase in demand. East-West Rail and growth in the Newmarket, Ipswich and Ely corridors will all have an impact in this regard.
- 2.3.8 Elsewhere in the Cambridge area it is recognised that proposals are in place for a new Cambridge South Station. This would require the four-tracking of the line up to Cambridge Station to enable the four platforms required to be provided.
- 2.3.9 In 2020 there will be significant timetable changes on the Greater Anglia network and will result in 15 trains per hour (tph) in the peak period at Cambridge Station. This is expected to rise to 21 tph once East-West Rail is in place.
- 2.3.10 The Study states that ease of access to rail stations will be a key driver of growth in the future, although it makes no direct reference to Whittlesford station.

Bus Service Review (SYSTRA)

- 2.3.11 In December 2019, consultants SYSTRA are set to report back their findings and recommendations for the future shape and operation of the bus network across Cambridgeshire following an extensive study undertaken of existing provision.
- 2.3.12 Whilst the full details of the study are not available at the time of writing, initial outputs suggest that the standardisation of the network will be proposed, together with enhancements to the core network and new rural connections.
- 2.3.13 Whilst there appears to be no direct reference to Whittlesford in the recommendations, or buses which may serve the station, the development of the Cambridge Autonomous Metro concept, including a line south of the city to Granta Park, could have implications for the future demand to use to the station for some.

2.4 Implications for Whittlesford Station

- 2.4.1 The commencement of the process to produce a new Local Plan for the South Cambridgeshire area, with a current focus on the Call for Sites stage of proceedings, provides some uncertainty as to the level of growth which is likely to be permitted within the station's hinterland in the long term.
- 2.4.2 Increasing the travel choices to the station which the masterplan seeks to achieve however, forms the most effective way of future proofing the station to changes in demand.

3. Perceptions



3.0 Perceptions

3.1 Overview

- 3.1.1 A series of discussions have been held with local businesses, developers, transport providers and local authorities through which to establish the latest thoughts on the plans for the station, and how these may need to evolve to reflect recent decisions on planning applications in and around Whittlesford. These thoughts are summarised below.

3.2 Landowners

- 3.2.1 Two of the largest local landowners in the area around the Station and A505 are Gonville and Caius College, which forms part of Cambridge University, and the Pampisford Estate, part of the James Binney Will Trust.
- 3.2.2 The College owns several pieces of land along the A505 corridor and are in the final stages of preparing additional materials to support their 'Call for Sites' document which proposes an aviation technology park to the south of the A505 coupled with a residential extension of Duxford.
- 3.2.3 The Pampisford Estate also have considerable land holdings in close proximity to Whittlesford Station. They are keen to play an increasing role as the Masterplan proposals begin to gain traction and are keeping an open mind about land take requirements which may facilitate both the measures within the masterplan to come forward, and associated development opportunities it may offer.
- 3.2.4 The Trust have a range of interests, including ownership of Duxford Chapel which has been leased to English Heritage in a long-term deal, and they are conscious of the need to balance these interests with the opportunities which arise.
- 3.2.5 Both of these large landowners have expressed a willingness to work with the GCP to explore the delivery of the Masterplan and find integrated solutions which cater for all of the development opportunities emerging within the A505 corridor.

3.3 Transport Providers

- 3.3.1 Stagecoach, Greater Anglia and Network Rail are the main providers of transport services and infrastructure in and around Whittlesford Station. All have previously, and continue, to express support for the Masterplan and investment at the station.
- 3.3.2 Greater Anglia, in particular, have expressed a desire to be at the heart of the delivery process, based upon a desire to capitalise upon the revenue generating opportunities created through the extension of the existing car park. The train operator is working with the GCP at other stations across the city region and would hope to facilitate similar joint working arrangements to secure the delivery of this key piece of infrastructure within the Masterplan.
- 3.3.3 With regard to Stagecoach, it seeks to create a more open and engaging approach to network enhancements, and as such will look at ways the station could be better served. The realities of the rural context were highlighted however, in that the large fluctuations in demand during the day (between the peak and off-peak) meant, commercially viable bus services would be hard to provide.

3.4 Businesses

3.4.1 Many of the large businesses and business parks within close proximity to Whittlesford Station have plans to grow and expand in the coming years. The plans are at various stages of development, but each show a commitment to the area and emphasise the importance of the station, and access to the station, in making these plans become a reality.

- **Imperial War Museum (IWM)** – The IWM have plans in place to increase the number of visitors to the site and recognise that access via Whittlesford Station will help to achieve this objective. There is a desire to ensure that access to the site is more sustainable in the future, focusing attention on prioritising walking, cycling and bus links to the museum, as opposed to increase the existing car park provision.
- **Babraham Campus** – The Babraham Campus houses a large number of relatively small and start-up businesses, none of which individually or collectively, have the resources to subsidise their own transport provision from Whittlesford Station, in the way both Granta Park and the Wellcome Trust are able to provide.

As such there is a desire to see an integrated approach to service provision adopted which reflects the existing (and future) demand to travel within the broad corridor, and provides east-west connectivity via the station, which links in with the linear north-south provision offered by the train, the Cambridge Autonomous Metro (in the future) and more established bus links.

- **Wellcome Trust** – The Trust are keen to continue working closely with the GCP and other partners to deliver the Station Masterplan. Elements of the Masterplan (junction improvements at both the McDonald's roundabout and Moorfield Road) were included within the recently approved planning application for the extension of the Wellcome Trust site. The Trust recognise that the successful creation of an interchange at the station will be important in the success of the campus in being able to attract the best talent from outside of the region, and are keen to support the GCP in the delivery process.
- **Granta Park** – The Campus' subsidised commuter bus service to the Station remains very popular and the expectation is that demand will continue to growth as a result of the increasing number of employees based on the site. The re-let and refurbishment of a number of units is expected to see an additional 500 staff based on the site in the next few years.

The Campus management company recognise the importance of the Station in maintaining this growth and fully support the proposals contained within the Masterplan. The company providing the bus services has seen the increasing popularity of the station and the wider geography from which people travel.

- **Agri-Tech** – Smithson Hill are the planning consultants working on behalf of Agri-Tech to secure planning permission for the site close to the junction of the A505 and the A1301. Concerns were expressed with regard to the Masterplan in respect of it both lacking ambition and in proposing junction improvements which would not be able to accommodate the forecast traffic volumes identified through their assessments.

3.4.2 Closer to the station, on Station Road East, both the Red Lion Hotel and Frog IT sit adjacent to the station and have suffered the consequences of a lack of capacity through which to accommodate the number of passengers it attracts. Both are keen to be involved in continuing discussions.

3.5 Local Authorities

- 3.5.1 Sustainable housing and employment growth in both South Cambridgeshire and Uttlesford District Councils is dependent upon taking advantage of the high level of rail service provision available via Whittlesford Station.
- 3.5.2 Whilst South Cambridgeshire are currently in the process of producing a new joint Local Plan with Cambridge City Council and therefore not in a position to explicitly define their requirements, Uttlesford are committed to the provision of a new Garden Community in the north of the district, subject to the impending report of the Inspector into the Local Plan¹. Its sustainable connectivity for rail beyond the immediate area is heavily dependent upon the use of the station in the future.
- 3.5.3 To this end, the authority have expressed a desire to help explore the options through which the Garden Community can be connected to the station, particularly by bus. The currently Masterplan is supported by the authority and seen as a significant improvement on current sustainable opportunities and potentially provision.

3.6 Implications for Whittlesford Station

- 3.6.1 There is a clear appetite amongst local businesses of all sizes, for the masterplan to evolve into an integrated package of interventions on the ground. In addition, transport providers and landowners are keen to be involved in the delivery of the Masterplan and the identification of a long-term solution to securing a high-quality bus service along the A505 corridor.

¹ The Inspector's findings into the Local Plan are due to be provided early in 2020.

4. Proposals



4.0 Proposals

4.1 Overview

- 4.1.1 During the course of 2019, several major transport proposals have progressed which may influence the future use of Whittlesford Station. In addition, large scale housing and employment aspirations have gained traction, and in some instances been granted planning permission.
- 4.1.2 This section quantifies the extent of growth proposals and their status within immediate proximity of the Station, correct as of December 2019. This is important to clarify as the development context is an evolving picture, not least as a consequence of the 'Call for Sites' process associated with Cambridge City Council's and South Cambridgeshire District Council's emerging joint Local Plan.

4.2 Transport

- 4.2.1 There are a number of schemes and initiatives progressing which could influence the accessibility of Whittlesford Station and demand pressures at the station. These are summarised below, including those schemes agreed to be delivered as a result of the granting of recent planning applications detailed in Section 4.3.

Rail

- 4.2.2 Developments associated with major rail schemes in 2019 are as follows:

- **East-West Rail** – Consultation of the five possible route options for the central section has ended with a report expected towards the end of 2019 outlining the preferred option for the Central Section between Bedford and Cambridge.

In September 2019 the government declared that the central section of East-West rail constitutes a Nationally Significant Infrastructure Project (NSIP), meaning that, following public consultation, the East West Railway Company (EWR Co) can apply to the Secretary of State for Transport for a Development Consent Order (DCO) to authorise the project².

- **Cambridge South Station** – The Station has been included in the emerging Joint Cambridgeshire and Peterborough Local Transport Plan, published in June 2019. It states that the station has committed funding to the point at which a Strategic Outline Business Case can be produced. No preferred options for the composition of the station are currently in the public domain.
- **Timetabling Changes** – Greater Anglia are upgrading their fleet with more spacious trains that offer free wifi. There are also proposed timetable changes for 2020 to provide more peak time seats into London. However, there are not really any details on the timetable improvements and in any case, they are not likely to have any impact upon services at Whittlesford Station³.

² <http://www.infrastructure-intelligence.com/article/sep-2019/east-west-rail-link-declared-nationally-significant-infrastructure-project>

³ <https://www.greateranglia.co.uk/newtrains>

Buses

4.2.3 Whilst no public service buses serve the Station at present, there have been a number of other changes and proposals emerge associated with the wider network which require consideration in terms of the implications for access to Whittlesford:

- **Cambridge Autonomous Metro** – The Strategic Outline Business Case (SOBC) for the CAM was published in March 2019, and demonstrated that the scheme could be funded through a range of sources whilst offering high value for money (BCR – benefit-to-cost ratio – figure between 2-4 between conservative and optimistic scenarios).

This includes the potential to unlock significant growth, associated with the development of 60,000 new homes and the creation of up to 100,000 jobs. An Outline Business Case, including a detailed funding strategy and programme of stakeholder engagement, is due to be completed by Feb 2020⁴.

- **Cambridge South East Transport Study** – Feedback from the most recent consultation (mid-October) will be published early in the new year.
- **Commuter Buses** – The granting of planning permission for the extension of the Wellcome Genome Campus (see section 4.4) is subject to the provision of additional commuter bus services between the campus and the Station. Specific reference is made to the need for:
 - Enhancements to the exiting shuttle bus service to the station including increasing frequencies and to align with train times in peak periods.
 - Off-peak and weekend services.
 - Commitment to open up provision for use by the general public.
 - Requirements are also stipulated for other bus operations in and around the site.

Cycling

4.2.4 Despite a lack of supporting infrastructure cycling remains a popular form of travel to the station. Investment has been made in facilities to cater for this demand in 2019 in the form of the following measures:

- **Cycle Parking** – Additional cycle parking has been provided on Network Rail land immediate to the east of the station platforms, accessed via Station Road East. The decked parking will accommodate 220 cycles once work is complete. This forms a significant proportion of the 250 spaces suggested to be provided in the Masterplan and has been funded by Greater Anglia.
- **A1301 Cycle Path** – A new cycle path has been provided alongside the A1301 between the A505 and the Sawston Trade Park. This site, now known as Unity Campus, funded the scheme as part of a S106 Agreement associated with the granting of planning permission for 25,000sqm of office space on the site.

Highway Schemes

4.2.5 There have been no developments or progression of any major highway improvements in and around the Station. However a contract has been awarded to Peter Brett Consultants to undertake a study of the A505 corridor and options through which future capacity can be provided to address the issues it currently faces.

⁴ <https://cambridgeshirepeterborough-ca.gov.uk/news/key-study-into-cambridgeshire-metro-finds-compelling-case-to-move-forward-with-transformational-scheme/>

4.3 Housing

4.3.1 New housing set to come forward in the period up until 2033 is anticipated to be concentrated within a small number of sites, each of which are summarised below, and in Table 4.1. In total, some 4,847 more dwellings are set to come forward, increasing the local population by around 9,200.

- **Uttlesford Garden Village** – The Garden Village is allocated within the Uttlesford Local Plan for the provision of up to 5,000 new dwellings and supporting services. A public hearing into the Local Plan was held in the summer and the Inspector's findings is due early in 2020. Therefore, whilst the site does not yet have planning permission, it is in the submitted plan and been considered at an examination hearing and should therefore be included in evaluating the future role of Whittlesford Station, albeit only around 1,900 of the 5,000 dwellings are proposed to be in place by 2033.
- **Wellcome Genome Campus** – The expansion of the campus to create over 4,000 new jobs (see below) will be supported by the provision of 1,500 new homes on the northern edge of the site. These are envisaged to be predominantly occupied by employees, internalising many of the trips and reducing potential capacity concerns on the wider transport network. Planning permission for the site was granted in October 2019 subject to any call in by the Secretary of State and should be included in consideration of the future functioning of Whittlesford Station.
- **Gonville and Caius College Development** – Alongside indicative plans for an aviation campus alongside the A505, the college proposes the provision of 800 dwellings to the north and west of Duxford. Whilst there is no formal allocation at present, the college are working closely with the Imperial War Museum to progress their aspirations.
- **Sawston North East** – Some 160 dwellings on Babraham Road were granted planning permission in August 2019.
- **Station Road** – To the west of the Station, 42 dwellings are set to come forward after being granted planning permission in August 2018, on land behind the veterinary surgery, whilst the redevelopment of the current highways depot sites on Station Road East could yield a further 420, albeit this would subject to various agreements and permissions being granted.

4.3.2 In addition to these sites, further housing provision is allocated within the wider catchment area served by the station, particularly in and around Haverhill.

4.4 Employment

4.4.1 A number of sites have come forward in 2019 for additional employment provision and these are summarised below, together with other plans for employment growth in the pipeline:

- **Wellcome Genome Campus** – The expansion of the campus to the east of the A1301 was granted permission in October 2019 to provide 150,000 sqm of flexible employment space, together with the housing detailed above, and other ancillary uses. It is envisaged that the development could accommodate in the region of 4,000 new jobs.
- **Unity Campus** – Located on the former Sawston Trade Park, Unity Campus will offer almost 25,000sqm of new employment space capable of accommodating 2,000 employees. The site was granted outline planning permission in April 2018, and individual units will be constructed once let. A new access will be provided into the site from the A1301, and a new cycle lane is in the process of being provided on the section between the campus and the A505.
- **Argi-Tech** – A planning application is awaiting determination for the site on the A1301 between the McDonalds roundabout and the Wellcome Trust campus, which would see the creation of some 4,900 jobs in the agricultural technology sector.



- **Aviation Research Park** – Gonville and Caius College are progressing proposals for the creation of a new aviation park to the south of the A505, west of the station. It is envisaged that it would accommodate businesses and a college which could align with the adjacent Imperial War Museum and generate in the region of 1,500 new jobs.
- **Granta Park** – As a result of changes in business occupancy at Granta Park it is anticipated that a further 500 employees will be based on the site in the coming years. Further development will be undertaken on a pre-let basis as and when the demand arises.
- **Babraham Campus** – The campus is expected to see natural growth in the number of employees based upon the site as a result of the expansion of operations of existing businesses, which could generate a further 300 new positions.
- **Former Spicer's Site (Huawei)** – No formal planning application has been submitted as of yet for the former Spicer's site, but it has been acquired by Huawei, with emerging plans to develop a research and development base. Proposals for the site can be found via this link: <https://www.theformerspicerssite.co.uk/proposals/Former-Spicers-Site-proposal-APR2019.pdf>

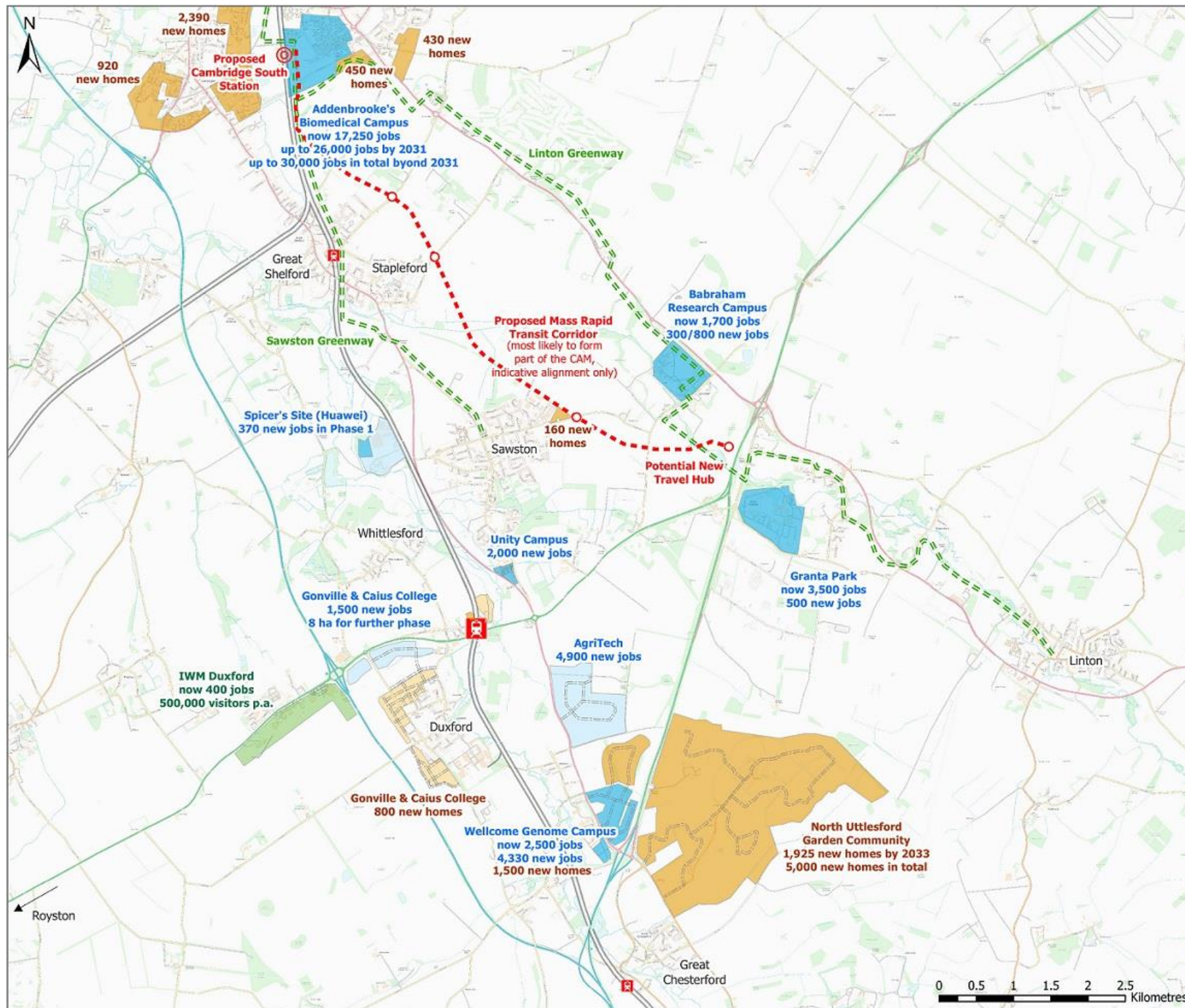
4.4.2 If each of these sites develop as expected between now and 2033, a potential 14,000 new jobs could be available within a short distance of Whittlesford Station.

4.5 Other Developments

4.5.1 Aside from housing and employment growth, the Imperial War Museum are in the process of implementing and accelerating its masterplan which contains a target to attract in excess of 500,000 visitors a year (excluding those who attend the air shows on six days of the year). This represents an increase of 100,000 based upon current visitor numbers. The initial target was to reach this figure by 2030 but they now want to meet it sooner.

Table 4.1: Summary of Development Proposals

Development	New Houses	Estimated Increase in Population	Estimated New Jobs
Housing			
Station Road West	42	80	0
Station Road East (potential)	420	798	0
North Uttlesford	1,925	3,658	0
Sawston North East	160	304	0
Employment			
Granta Park	0	0	500
AgriTech	0	0	4,900
Babraham Research	0	0	500
Huawei	0	0	370
IWM Duxford	0	0	50
Unity Campus	0	0	2,000
Housing & Employment			
Wellcome Genome Campus	1,500	2,850	4,330
Gonville & Caius College	800	1,520	1,500
Total	4,847	9,210	14,150



Legend

- Whittlesford Parkway
- Other Stations

Major Development Sites

- Residential - Likely to Happen
- Residential - Aspirational
- Business Park - Existing / Likely to Happen
- Business Park - Aspirational
- IWM Duxford

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REV	DESCRIPTION	BY	CHK	APP	DATE
Client:					



EXECUTIVE PARK
AVULON WAY
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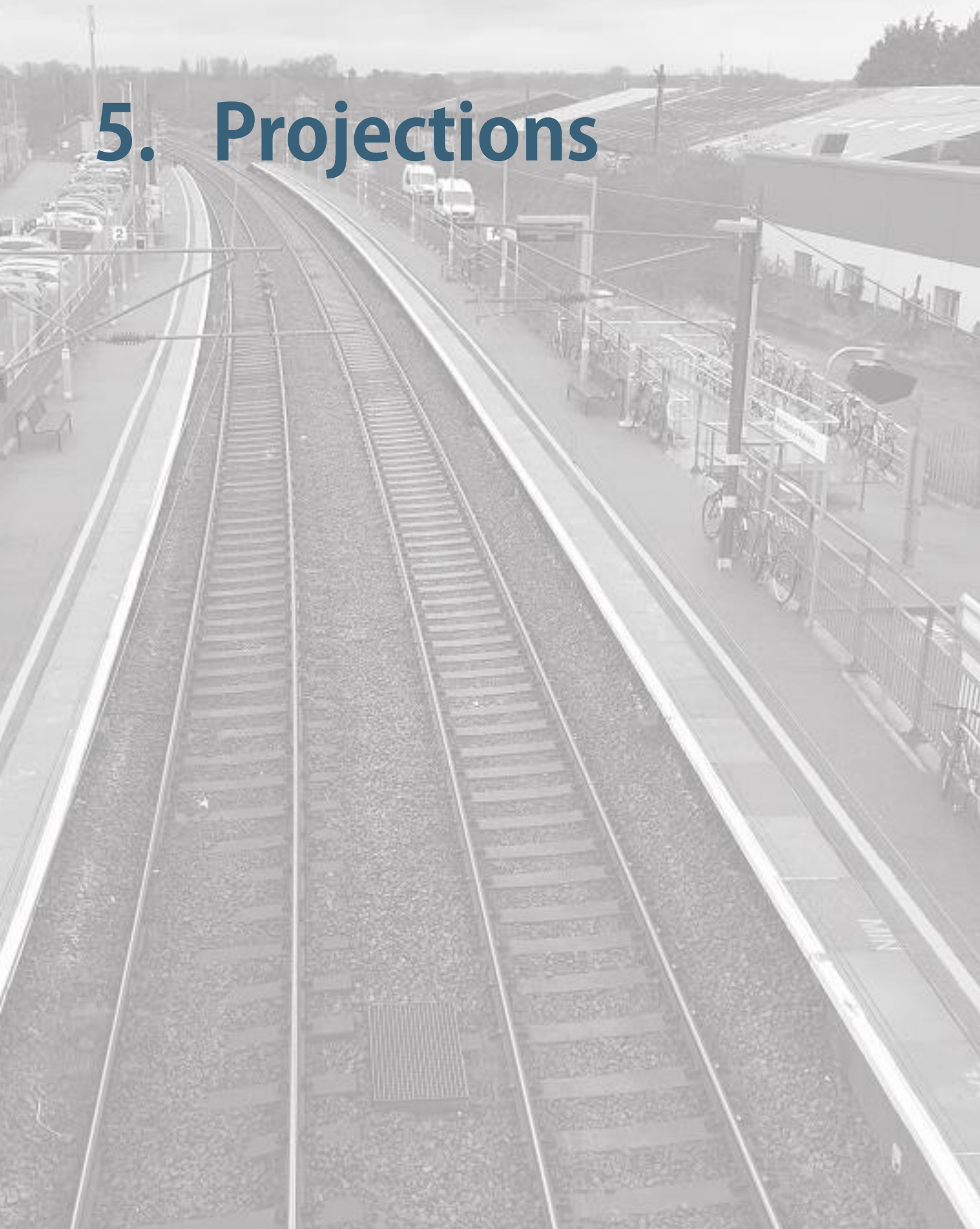
Project:
Whittlesford Parkway Station

Drawing Title:
Development Sites

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	PJ	26/11/19	BK	26/11/19	ASG	26/11/19
Project No.	Office	Type	Drawing No.	Revision		
A107952	35	18	037	-		

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5. Projections



5.0 Projections

5.1 Overview

- 5.1.1 This section updates the projected levels of patronage at Whittlesford Station using three alternative methodologies, specifically using forecasts provided by Greater Anglia, trend-based forecasts and development-based projections focusing on commuting trips and all potential additional trips via the station⁵.

5.2 Greater Anglia Projections

- 5.2.1 Greater Anglia regularly undertake their own station patronage projections for the station. The most recent was based upon actual passenger numbers recorded in 2014 and detailed the estimate demand to use the station by 2026.
- 5.2.2 We took these projections and extrapolated them to 2033, to represent a 15-year period from the production of the Masterplan in 2018. This process has suggested that annual patronage will equate to **855,000**, an increase of 315,000 from 2016/7 levels.
- 5.2.3 Based upon the latest patronage levels which are now available for 2017/18 however (see Table 5.1), we now envisage that demand will equate to **910,000** trips by 2033.

Table 5.1: Station Patronage

Year	Usage	Year	Usage
2007/08	314,895	2012/13	396,622
2008/09	333,144	2013/14	431,544
2009/10	317,244	2014/15	454,734
2010/11	338,306	2015/16	493,004
2011/12	343,772	2016/17	509,744
		2017/18	538,972

5.3 Trends Based Projections

- 5.3.1 The table above provides an overview of the changes in patronage at Whittlesford Station over the last 11 years. Since the Masterplan was produced, patronage data for 2017/18 has been released and this has highlighted that a further 29,000 people used the station compared to 2016/17, representing a 6% increase⁶. This compares to a 3% increase in patronage equating to 15,000 passengers, between 2015/16 and 2016/17.
- 5.3.2 Using this latest trend data from the Office of Road and Rail, we have calculated that **895,000** would use the station by 2033.

⁵ All projections quoted are rounded to the nearest 5,000.

⁶ <https://dataportal.orr.gov.uk/statistics/usage/estimates-of-station-usage/>

5.4 Development Based Projections – Commuting Trips

- 5.4.1 The third approach we have taken in identifying future use of the station has been through quantifying the additional demand generated by known development sites coming forward within the immediate hinterland of the station, and their impact upon the use of the station for commuting trips.
- 5.4.2 The nature of this approach is such that several assumptions have been made, as follows:
- **Sites:** The sites which are likely to have been fully developed and in place by 2033. Those we have included within our calculations are included in the plan in Section 4. The scale of provision to be accommodated on each site has been based upon planning permissions granted or job creation estimates provided by the respective developers.
 - **Commuting into Whittlesford Station:** The quantum of growth on existing sites has also been estimated, based upon figures provided by the occupiers themselves to estimate the potential increase in commuters travelling into Whittlesford and then onto a local place of employment.
 - **Commuting out of Whittlesford Station:** This has been estimated based upon the number of houses set to come forward, the average household occupancy levels, typical levels of economic activity and the modal split of commuting trips by train.
 - **Modal Split:** The potential modal split of commuting trips to be made by train from Whittlesford was estimated, based upon current levels and how these could realistically be expected to increase based upon the delivery of the schemes included within the Masterplan. This provided low and high trip rates for each site, with bespoke modal splits being identified for each based upon their respective proximity to the station.
- 5.4.3 On the basis of these assumptions, we estimate that in a scenario in which rail-based commuting remains low, annual patronage at Whittlesford Station will equate to 725,000, but in a scenario where rail-based commuting increases, including as a result of the improved access to the station, it could rise to as much as 1,245,000 per annum.
- 5.4.4 There are a number of caveats to these figures as follows:
- Modal splits have been estimated based upon our professional judgement as to what could be seen as being realistic.
 - It doesn't include increases in rail travel from existing sites and only focuses upon additional commuting trips – except for the additional visitor trips to the IWM (where the target is to increase the number of visitors on non-show days from 400,000 to 500,000 per annum).
 - It also assumes that all sites come forward and are fully built out by 2033. It is worth noting that the Uttlesford Garden Village only has 1,900 dwellings expected to come forward by 2033, with potential for 5,000 in total. We have based our assessment on the 1,900 only.

5.5 Development Based Projections – All Trips

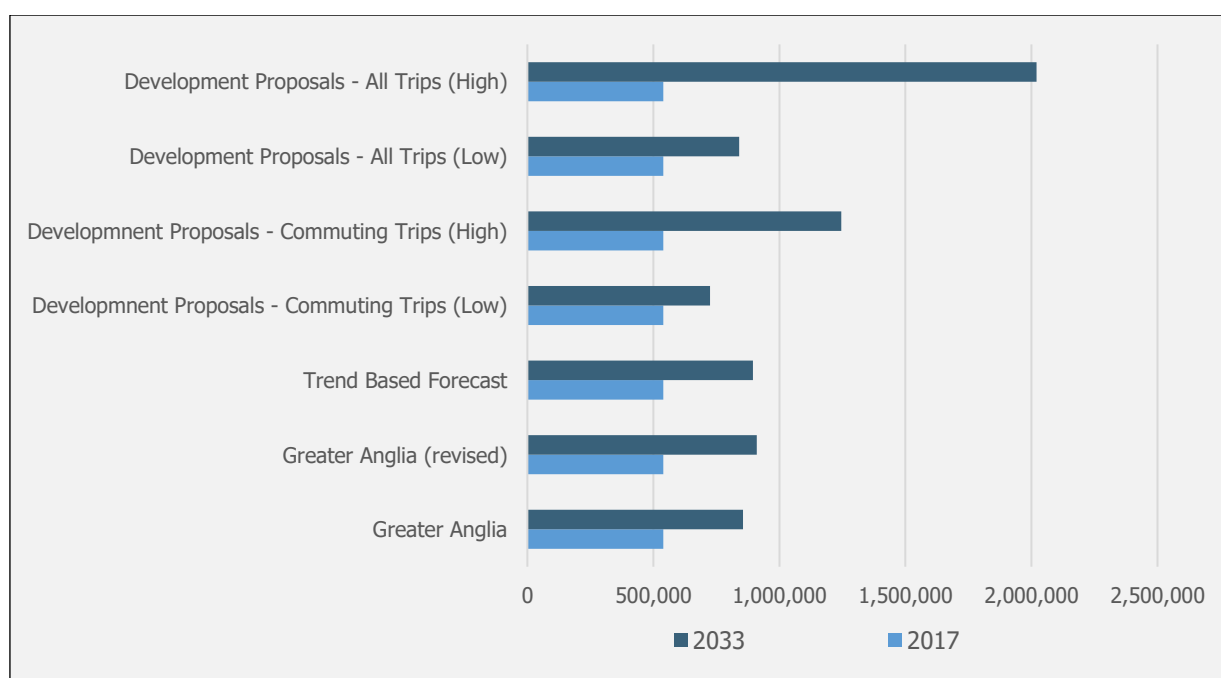
- 5.5.1 Whilst the above approach focuses upon commuting based trips and therefore the extent of demand during peak periods, it fails to reflect the additional demand generated by travelling for other journey purposes (such as for education, healthcare, retail or leisure), the delivery of major transport schemes (such as the Cambridge Autonomous Metro and Cambridge South Station), or the impact of access improvements on the use of the station by existing residents.
- 5.5.2 A further calculation was therefore undertaken to reflect these additional drivers of growth, again reflecting both low and high mode shift parameters. This highlighted a potential 840,000 passengers in a low modal shift scenario to an annual flow of 2,020,000 passengers through the station, if rail based commuting trips increased in popularity.

5.5.3 A summary of the station patronage projections up until 2033 is included in Table 5.2 and illustrated in Figure 5.1 below.

Table 5.2: Station Patronage Projections

Methodology	Annual Passengers	% Change
Greater Anglia Trajectory	855,000 (using 2016/17 data)	+59%
	910,000 (using 2017/18 data)	+69%
Trend Based Forecast	895,000	+66%
Development Proposals – Commuting Trips	725,000 (low rail modal split))	+35%
	1,245,000 (high rail modal split)	+131%
Development Proposals – All Trips	840,000 (low rail modal split)	+56%
	2,020,000 (high rail modal split)	+275%

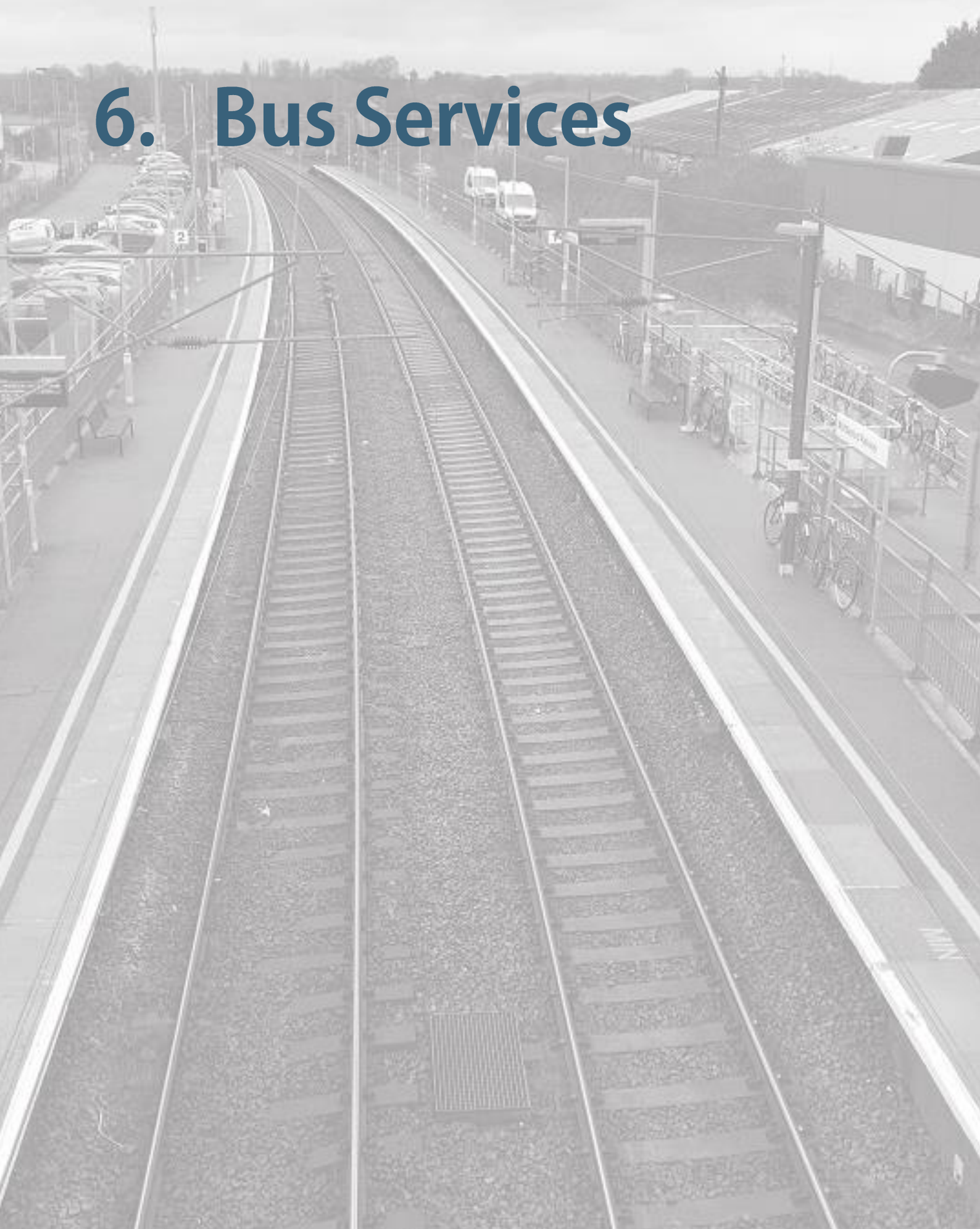
Figure 5.1: Station Patronage Projections



5.6 Summary

5.6.1 It is clear that Whittlesford Station is set to be subject to significant growth in passenger numbers from 2017/18 levels. Whilst alternative methodologies have been applied in seeking to quantify the exact extent of growth, it is clear that all demonstrate large increases in future demand to use the station.

6. Bus Services



6.0 Bus Services

6.1 Overview

- 6.1.1 The Whittlesford Masterplan details a number of measures through which the physical accessibility of the station could be improved for buses and through which more seamless interchange between bus and rail could be achieved.
- 6.1.2 At present there are no public service buses which operate via the station due to a combination of access concerns and a perceived lack of demand. By contrast charter buses are provided by both the Wellcome Trust and Granta Park to shuttle employees between the station and their respective campuses.
- 6.1.3 This section provides an assessment of possible public service bus routing options, frequencies, operation costs and the potential revenue generation which may make provision viable and sustainable.

6.2 Context of Provision

- 6.2.1 Since the production of the masterplan, changes in the context of potential future bus service provision have become apparent, particularly in terms of the following:
 - **Station Use:** As detailed within Section 5, the increase in demand at the station will require individuals accessing the station by means other than the car, with the bus the most realistic alternative for many.
 - **SYTRA Study:** The study, which is due to publish its findings imminently, recommends improvements to rural bus service provision. Whilst it doesn't make reference to Whittlesford directly, considering service provision at the station in light of this study is timely.
 - **Wellcome Genome Campus:** The planning permission granted for the extension of the campus (see Section 4), is subject to the provision of bus service enhancements between the campus and the station. The opportunity therefore exists to explore how wider benefits could be secured on the back of this.
 - **North Uttlesford Garden Village:** The NUGC is now part of a submitted Local Plan and relies on Whittlesford Station for rail access outside its immediate area.

6.3 Principles of Future Service Provision

- 6.3.1 There are several key principles to take into account in the identification of a new bus service connecting Whittlesford Station to surrounding communities and employment hubs, notably:
 - It must serve all major trip generators in close proximity to the station.
 - It must be direct and provide competitive travel times.
 - It must be frequent and sync with the rail timetabling at the station.
 - It must provide a service throughout the day and not just at peak times.
 - It must be viable in the medium to long term.

6.4 Characteristics of Potential Service Provision

Routing

- 6.4.1 In seeking to serve all of the major trip generators within close proximity to Whittlesford Station, it is envisaged that three bespoke services are required. The first of these would serve the Imperial War Museum and the potential aviation research park proposed by Gonville and Caius College alongside the A505 to the west of the station.
- 6.4.2 The other two routes would serve the life science clusters and new developments planned or proposed at the Babraham Campus, Granta Park, the Wellcome Genome Campus and the Agri-Tech site, with the potential to be extended into the Uttlesford Garden Village once plans progress and access points are confirmed.
- 6.4.3 There appear to be two main options when it comes to serving these locations:
- Option 1: A dedicated service for the Babraham Campus and Granta Park, complemented by a second dedicated service for the Wellcome Trust and Agri-Tech sites, or alternatively
 - Option 2: Two services which serve all sites, one of which operates in a clockwise direction and the second which operates in a counter clockwise direction.
- 6.4.4 These alternative approaches to service provision are illustrated in Figure 6.1 and Figure 6.2. All services would start and terminate at the Station but would require the infrastructure improvements detailed in the masterplan, in place prior to their operation.

Journey Times

- 6.4.5 In the first option, the direct bus service from the Station to the Imperial War Museum would take approximately 8 minutes. On the return journey, the service would be routed via the proposed aviation research park and therefore the journey time would be slightly longer, at approximately 11 minutes.
- 6.4.6 The service would cover a total distance of around 7.3km, with an estimated average speed including boarding times, accelerations and decelerations, and delays at junctions, of 14mph. This is considered a conservative estimate and it could be possible that shorter journey times could be achievable should there be improvements along the A505.
- 6.4.7 The Wellcome Trust and Agri-Tech service would require approximately 54 minutes to complete the loop assuming that both sites are built and no extension to the North Uttlesford Garden Village is provided. It should be noted that the Agri-Tech plans have not been approved at the time of writing and it has been calculated that about 10 minutes would be required to serve all buildings within the site in each direction. It would result in approximately a 20-minute journey time between the Station and Wellcome Genome Campus. The average travel speed of this route would be about 18mph.
- 6.4.8 The service towards Granta Park and Babraham Research Campus would need around 44 minutes to complete a round trip. The various stops at Granta Park could be reached between 7 and 15 minutes from the Station, whilst journey times to and from Babraham Campus would be in the region of 20 minutes. The calculated average speed for this service is about 17mph.
- 6.4.9 In the second option, where there are two services running in opposite directions, the clockwise route would take 54 minutes and the counter-clockwise route about 52 minutes with average journey speeds set to be in the region of 18mph. All sites could benefit from approximately same journey times to/from the Station. This has potential to link to NUGC as the masterplan/its access arrangements are refined.

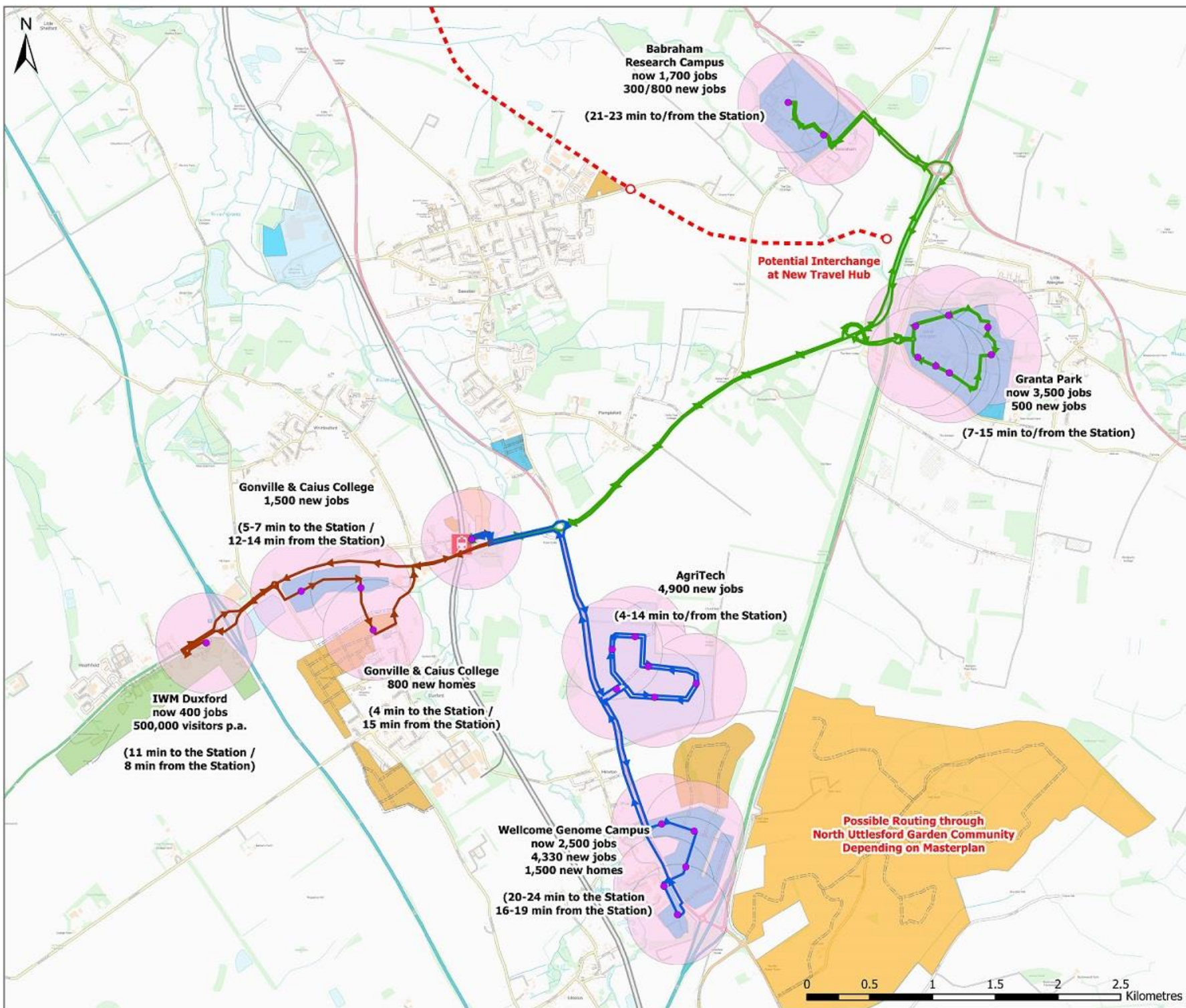
Frequencies

- 6.4.10 There are currently three trains per hour in each direction during the day serving the station, and the current timetable would enable one bus to serve trains arriving from both directions as they call at the Station at similar times.
- 6.4.11 The bus departures could be scheduled to align with the train timetable, to provide convenient interchange opportunity. It has been calculated that the buses could operate with 15 minutes frequency in the morning / evening peak periods and slightly more irregularly during the day to follow the train timetable. The Station is proposed to be a hub for the local buses and all services would arrive and depart at approximately the same times.
- 6.4.12 Given the journey times of each service and the 15 minutes frequency, five vehicles in total would be required to serve the area – one vehicle to be used for the bespoke service to the IWM and two vehicles for each of the other services. It would be possible to use the vehicle from the IWM route to provide additional capacity on one of the other two routes in the peak periods as opening hours of the museum are between 10am and 5pm.
- 6.4.13 Table 6.1 below provides an example of possible service schedules. It should be noted that the times are indicative only.

Table 6.1: Indicative Bus Timetables

IWM Service	Granta Park & Babraham Service	Agri-Tech and Genome Trust Service
09:38 Arrival from Cambridge 09:43 Arrival from London Liverpool Street		
09:48 Whittlesford Station	09:46 Whittlesford Station	09:45 Whittlesford Station
09:53 – 10:01 IWM Duxford	09:53 – 10:01 Granta Park (7 Stops)	09:49 – 09:58 Agri-Tech (6 stops)
10:07 – 10:08 Aviation Research Campus (2 stops)	10:07 – 10:08 Babraham Research Campus (2 stops)	10:01 – 10:05 Wellcome Genome (5 stops)
10:15 Duxford - Housing	10:15 – 10:23 Granta Park (7 Stops)	10:11 – 10:20 Agri-Tech (6 stops)
10:30 Whittlesford Station (arrival)	10:30 Whittlesford Station (arrival)	10:25 Whittlesford Station (arrival)
10:38 Train to Stansted Airport 10:40 Train to Cambridge	10:38 Train to Stansted Airport 10:40 Train to Cambridge	10:30 Train to London 10:31 Train to Cambridge
10:48 Whittlesford Station (departure)	10:46 Whittlesford Station (departure)	10:35 Whittlesford Station (departure)

Counter Clockwise Service	Clockwise Service
09:38 Arrival from Cambridge 09:43 Arrival from London Liverpool Street	
09:45 Whittlesford Station	09:45 Whittlesford Station
09:49 – 09:58 Agri-Tech (6 stops)	09:52 – 10:00 Granta Park (7 stops)
10:01 – 10:05 Wellcome Genome (5 stops)	10:06 – 10:07 Babraham Research Campus (2 stops)
10:14 – 10:15 Babraham Research Campus (2 stops)	10:18 – 10:22 Wellcome Genome (5 stops)
10:22 – 10:33 Granta Park (7 stops)	10:25 – 10:34 Agri-Tech (6 stops)
10:37 Whittlesford Station (arrival)	10:39 Whittlesford Station (arrival)
10:38 Arrival from Cambridge 10:40 Arrival from London Liverpool Street	
10:45 Whittlesford Station (departure)	10:45 Whittlesford Station (departure)



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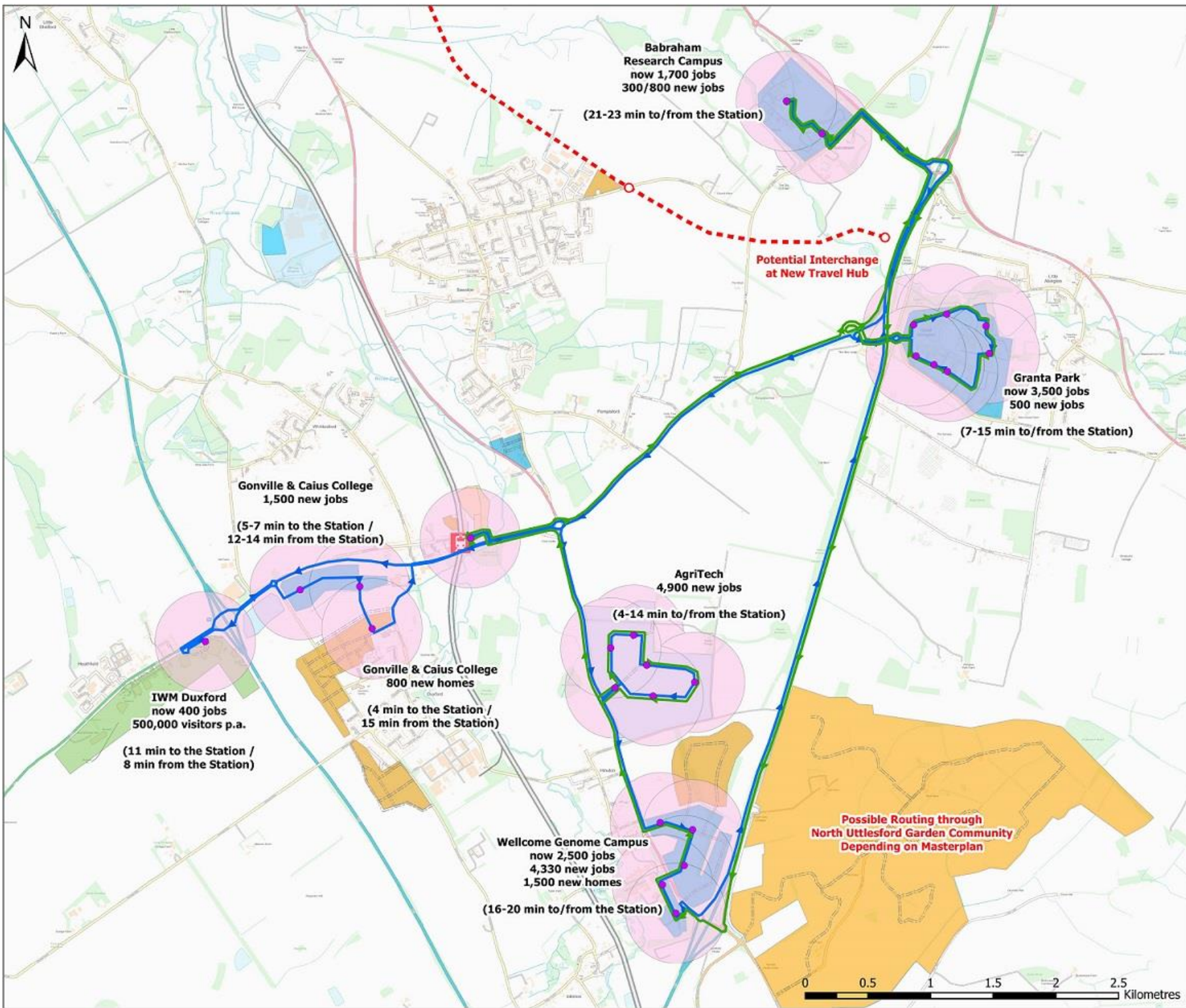
Project:

Whittlesford Parkway Station

Drawing Title:
Proposed Bus Services
(Three Services)

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	PJ	02/12/19	BK	02/12/19	ASG	02/12/19
Project No.	Office	Type	Drawing No.	Revision		
A107952	35	18	039	-		

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Drawing Title:
Proposed Bus Services

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	PJ	02/12/19	BK	02/12/19	ASG	02/12/19
Project No.	Office	Type	Drawing No.	Revision		
A107952	35	18	038	-		

6.5 Cost & Revenue Implications

Cost of Service Provision

- 6.5.1 Estimates of the costs of operating a service have been based upon the assumption that £140,000 is required to run a single bus throughout the year.
- 6.5.2 Given that there is a need to operate five buses to meet the service frequencies previously highlighted, this equates to an indicative total operating cost of £700,000 per annum.

Revenue Generation

- 6.5.3 The potential demand for the services has been calculated based upon the following assumptions:
- The number of new jobs created at each site.
 - The proportion of those employees who are likely to commute by train (see Chapter 5).
 - The subsequent proportion who are likely to require a bus for the final leg of their journey.
- 6.5.4 It is anticipated that the buses will be used predominantly for trips between the business parks, IWM and the Station, with the number of trips between the business parks likely to be negligible. As such these have been omitted from our calculations.
- 6.5.5 It is also recognised that the current buses provided by Granta Park and the Wellcome Trust for their employees are subsidised – they are free to use for Wellcome Genome staff and cost £1.50 for a single journey on a Granta Park commuter bus.
- 6.5.6 Therefore, for the purposes of quantifying the revenue generating potential of the services we have assumed that all passengers would be fee paying, and assumptions have been made in terms of both a low/high cost of a ticket for each trip.
- 6.5.7 Both high and low modal share and ticket prices have been identified to provide a realistic range of the revenue generating potential of the services.
- 6.5.8 The IWM aims to attract 500,000 visitors a year and they have high ambitions in their Travel Plan to promote and increase the proportion of these using sustainable transport trips to access the site. For the purposes of this revenue generation exercise, it has been estimated that the proposed bus service may be used by 8-15%⁷ of all visitors, with ticket prices in the region of £1.50 to £2.00. On this basis the service could generate an annual revenue of between £120,000 and £300,000.
- 6.5.9 Additional revenue may also be generated by the Aviation Research Campus. This is likely to be much more modest however, generating between £4,000 and £12,000 a year. The estimation of users is low (due to close proximity of the station) and is not likely to be more than 10 passengers on a typical working day.
- 6.5.10 A summary of the calculations is provided in Table 6.2. The 'Low' estimate is based upon a low share of trips being taken by bus, together with cheap ticket prices, whilst the 'High' estimate reflects a high take up of the service provision, alongside more expensive ticket prices.

⁷ The IWM have a target to ensure 20% of visitor trips are made by sustainable modes. On the basis of this it has been estimated that between 8-15% are likely to be by bus.

Table 6.2: Indicative Revenue Generation of Bus Services

	Low	High
Wellcome Genome Campus		
Number of bus passengers	64	667
Number of bus trips per year (one-way)	32,144	312,037
Annual Revenue	£38,573	£624,073
Agri-Tech		
Number of bus passengers	32	196
Number of bus trips per year (one-way)	14,651	90,160
Annual Revenue	£17,581	£180,320
Granta Park		
Number of bus passengers	29	190
Number of bus trips per year (one-way)	13,248	87,400
Annual Revenue	£15,898	£174,800
Babraham Research Campus		
Number of bus passengers	18	106
Number of bus trips per year (one-way)	8,050	48,875
Annual Revenue	£9,660	£97,750
Station Road West, Station Road East		
Number of bus passengers	10	34
Number of bus trips per year (one-way)	4,664	15,546
Annual Revenue	£5,597	£31,092
IWM		
Number of bus passengers	67	125
Number of bus trips per year (one-way)	40,000	75,000
Annual Revenue	£120,000	£300,000
Aviation Research Park		
Number of bus passengers	3	10
Number of bus trips per year (one-way)	591	1,181
Annual Revenue	£3,351	£12,221
Total Annual Revenue	£210,660	£1,420,256
Cost		
Annual cost per bus	£140,000	
Number of vehicles	5	
Total Annual Cost	£700,000	
Total Annual Profit	-£489,340	£720,256

- 6.5.11 These calculations form the first step in considering the potentially viability of buses operating from the Station to serve neighbouring trip generators and a more detailed analysis is required to inform further engagement with the relevant stakeholders.
- 6.5.12 These initial findings suggest that there is the potential for the bus services to prove viable in their own right in the long term, once all development is in place. To ensure this, the attractiveness of the services needs to be maximised to establish high levels of patronage, coupled with ticket prices which are attractive but also sufficient to generate sufficient income to sustain the services.

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