

Transport for London

**Upper Lee Valley Transport
Modelling and Bus Priority Study**

**BPN03 - Bus Performance and
Challenges: Summary and
Recommendations**

Final | 9 March 2018

This report takes into account the particular
instructions and requirements of our client

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Ove Arup & Partners Ltd
13 Fitzroy Street
London
W1T 4BQ
United Kingdom
www.arup.com

ARUP

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1 Introduction

1.1 Study context

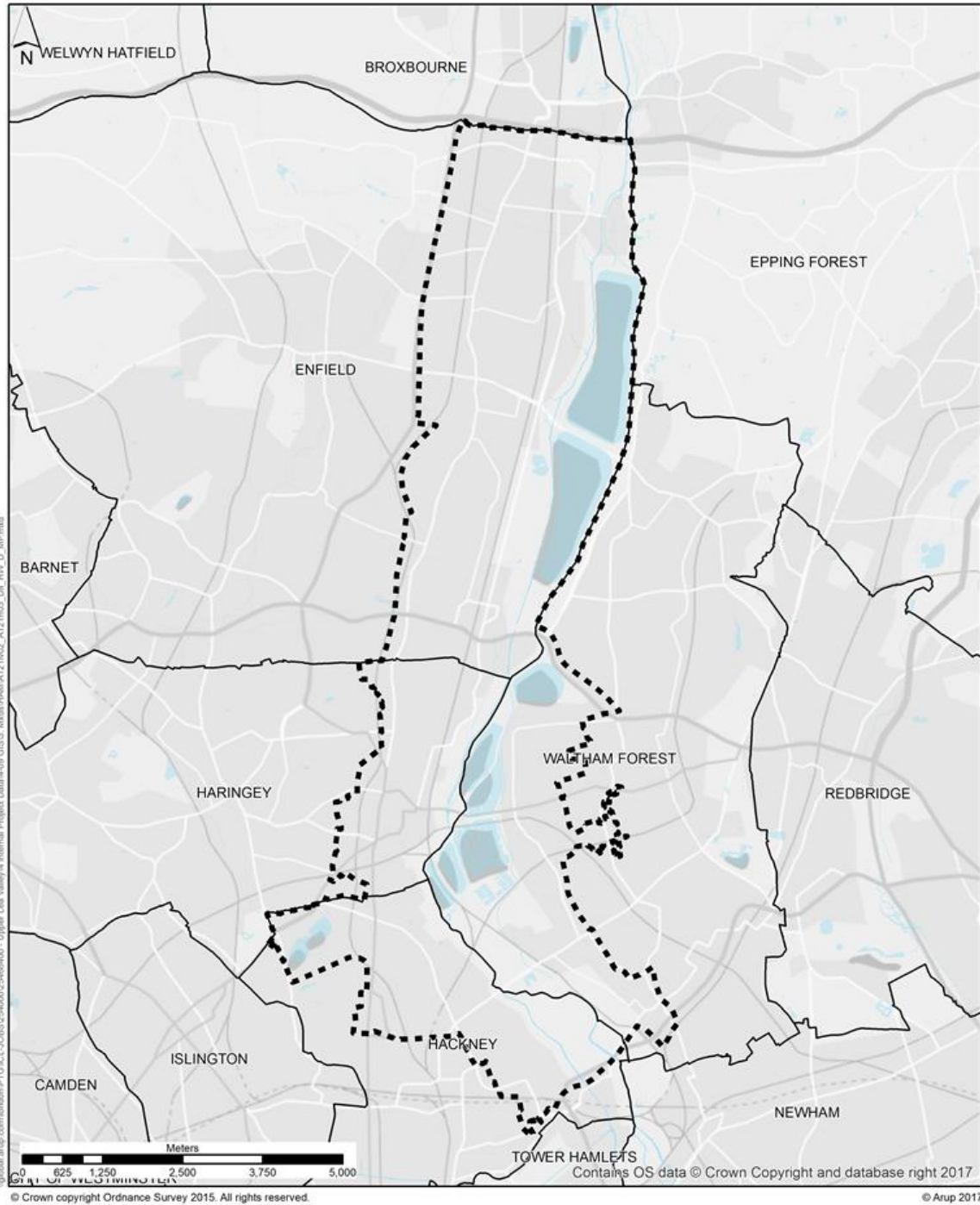
The Upper Lee Valley Opportunity Area (hereafter referred to as ULV) covers an area of approximately 3,880 hectares around and along the River Lea in north-east London. The ULV covers areas within the London Boroughs of Enfield, Haringey, Waltham Forest and Hackney. **Figure 1** shows the boundaries of the study area.



The ULV has substantial potential for unlocking housing and employment in London over the next 20-30 years. Initially, the *Opportunity Area Planning Framework* (OAPF) published by the Greater London Authority (GLA) in 2013 identified the ULV as having the potential to deliver 20,000 new homes and 15,000 new jobs by 2031.

However, since this was first published, the case for Crossrail 2 has strengthened, with a number of other additional transport improvements committed, resulting in an increase in population growth estimates. TfL now estimates that 50,000 new homes and 20,000 new jobs could be delivered in the ULV area.

Future growth in the ULV is therefore likely to put pressure on the transport network within the ULV and intervention will be required. TfL has appointed Arup to undertake the strategic modelling and assess options for bus priority initiatives in the ULV in the short, medium and long term. These assessments will be used to support an update to the previous Transport Study for the OAPF and also feed into TfL's Bus Priority Programme for scheme delivery.

Figure 1: ULV Study area



-  Upper Lee Valley Boundary
-  Borough Boundaries

Transport for London

UPPER LEE VALLEY TRANSPORT MODELLING
AND BUS PRIORITY STUDY

1.2 Background

The bus priority initiatives in the ULV have been assessed over the short (5 years), medium (10 years) and long term (20+ years) timescale. The phased approach is needed to cover the breadth and depth of bus priority in relation to the forecast growth and transport infrastructure:

- The short-term study is based on observed data and deals with the current network constraints and opportunities;
- The medium term looks at covering some of the significant changes in development taking place in the next 10 years and providing for bus priority prior to Crossrail 2; and
- The long-term study is based on strategic forecast modelling and identifies future bus travel patterns and network enhancement opportunities related to Crossrail 2 and the new major housing and employment sites which will most significantly come forward in the next 15-20 years.

The **Bus Performance and Challenges: Short and Medium Term Requirements Report**, explored the performance of the current network in terms of patronage, network speeds and service reliability, and analysed BODs, Oyster and iBus information obtained from TfL. The study identified challenges affecting bus operations and opportunities relating to growth within the ULV in the short to medium term.

Following a site visit and consultations on parallel bus programmes (LEBZ – Low Emission Bus Zones), which ascertained the current network constraints and opportunities, a long list of mitigation measures (the **ULV Mitigation Measures Package**) was compiled to respond to the current challenges of the bus network.

Simultaneously, Arup undertook strategic modelling in TfL's suite of models (LTS, Railplan and NoLHAM) to represent the forecast ULV growth in the context of the 2021, 2031 and 2041 planned transport network. This work was presented to the abovementioned London boroughs and the GLA during a workshop, and has been documented in the **Upper Lee Valley Transport Study Model Forecasting Report**.

The **Bus Performance and Challenges: Long Term Requirements Report**, explored the long-term implications for bus network performance within the ULV for 'with' and 'without' Crossrail 2 future scenarios. The report aimed to identify bus priority measures with and without future rail improvements, critique the locations currently identified by TfL for bus priority measures, and determine the extent to which active travel switchable trips may have an impact on bus demand in the long term.

Subsequent to this, a **workshop** was held to present the findings of these reports to representatives from the relevant boroughs and other parts of TfL (bus operations and network planning). The workshop focused on gaining feedback and 'buy-in' on the short-medium term intervention schedules as these need to be initiated in the near future.

1.3 Aims of the Study

This final report, **Bus Performance and Challenges: Summary and Recommendations**, will summarise the findings from the short, medium and long term reports, the Mitigation Measures Package and stakeholder feedback. These findings are the basis upon which the final recommendations are provided.

1.4 Document Structure

This document is organised as follows:

- **Section 1: Introduction** - providing the background to the study and identifying objectives;
- **Section 2: Priorities and objectives of the study** - explaining the policy background and requirements for improvement;
- **Section 3: Bus priority challenges and opportunities** - summarising opportunities and challenges within the ULV; and
- **Section 4: Bus priority recommendations** - reporting the key findings and recommending the priority interventions to be taken forward.

2 Study Priorities and Objectives

2.1 Bus Priority Programme

Every day, circa 6.5m¹ journeys are made on London's buses. TfL has a specific bus priority programme which aims to maintain a reliable and effective bus network. The Bus Priority Programme² outlines priorities for buses such as:

- *More continuous bus lanes that cross junctions with bus lanes on either side and enforced yellow box junctions;*
- *Improving performance of existing bus lanes to ensure appropriate widths for bus passengers and cyclists;*
- *Extending bus lane hours to cover peaks and increasing off-peak hours of operation where appropriate, such as during the working day, evenings and weekends. This will be supported by increased enforcement and further encouraging bus drivers to report infringements;*
- *Reducing dwell times and enhancing bus stop accessibility to make it easier for buses to access bus stops from the carriageway and ensure passengers can board and alight safely; and*
- *Upgrading signals to prioritise buses at traffic signals including bus only movements.*

In addition to the above, TfL is also committed to extending and realigning bus routes to support housing growth across London and meeting changing patterns of demand.

2.2 Policy Context

2.2.1 Current policy

Upper Lee Valley Opportunity Area Planning Framework (2013)

The OAPF was first published in 2013 and set out an overarching framework for the area which is augmented where necessary by the boroughs' own planning documents.

The OAPF outlines several key priorities to support growth, including enhancing local connectivity through changes to the bus network. Priorities identified include improving east-west connectivity across the ULV and delivering an improved interchange at Tottenham Hale.

¹ <https://tfl.gov.uk>

² <https://tfl.gov.uk/modes/buses/improving-buses#on-this-page-6>

Draft Mayor of London Transport Strategy (2017)

The *Draft Mayor's Transport Strategy* (MTS), published as a revised draft in June 2017, identifies the challenges and sets visions and priorities for London's transport network.

The new draft prioritises the health impact of London's transport, promoting a mode shift from car to public transport and active travel. Bus priority is key to achieving the MTS goal of modal shift and better public transport experience. It also identifies opportunities for transport-driven growth as a response to the population growth pressures.

The Draft MTS sets a vision of improved reliability and journey experience on public transport and improved streets for all Londoners, with a focus on the quality of the environment and encouraging people to walk and cycle.

The objectives for London Buses are as follows:

Convenience *Buses should be available where and when needed;*

Reliability *Buses should be achieving the target performance;*

Accessibility *An increased proportion of the network should be accessible for people with disabilities;*

Whole Journey Experience *Buses are often part of a Londoner's journey (even as a connecting mode) and, as such, buses should offer a better quality of journey experience;*

Well-designed Gateways *Bus stations and facilities are thoroughfares and points of reference for communities. They should be easy to use and orientate through; and*

Affordability *The Mayor has committed to keeping fares fixed until 2020 and has implemented the hopper fare on buses.*

To deliver these objectives, the Draft MTS sets policies and proposals including improvements to integrate the bus and rail offering, which is of particular importance regarding Crossrail 2 in the ULV.

The MTS also describes "*the need to accommodate changing travel demands*" and suggests "*measures should include new types of services such as express routes, to cater for the changing patterns of demand*".

Proposal 85 states that "*major transport infrastructure should be complemented with improvements to local bus services, bus priority and infrastructure to enable high-density development and thus spread the benefits of the investment*".

Proposal 86 introduces bus transit networks in outer London Opportunity Areas: "*The Mayor, through TfL and the boroughs, will pilot bus transit networks in outer London Opportunity Areas with the aim of bringing forward development, either ahead of rail investment, or, to support growth in places without planned rail access*".

2.2.2 Upper Lee Valley Growth Vision

Moving on from the 2013 OAPF which predicted 20,000 new homes and 15,000 new jobs in the ULV by 2031, new growth forecasts have been taken into account in this study which look at Crossrail 2 related development and new population growth projections beyond 2031.

Information provided by TfL and the relevant boroughs, shows that by 2031 the ULV and Broxbourne area could benefit from an additional 89,000 new households and 46,000 new jobs compared to the 2011 baseline. This forecast includes the ULV Crossrail 2 dependent development, which is estimated to account for an overall 8% by 2031 and 100% by 2041. Broxbourne has been included in the growth assessment because it borders the ULV boundary, but without actually crossing in to it.

The forecast household growth assumptions show that by 2031, the southern area of the ULV is predicted to experience the greatest increase in housing in areas such as Woodberry Downs, Meridian Water and Tottenham Hale, with northern areas such as Brimsdown and Enfield Lock experiencing a similar growth rate by 2041. The forecast growth in employment and housing in the long term will shape new travel patterns within the ULV, and between the ULV and the wider area.

2.3 Stakeholder Engagement

2.3.1 Workshop

Feedback from the London Boroughs of Hackney, Haringey, Waltham Forest and Enfield, the GLA and other specialists from TfL was sought throughout the study on both the Transport Study (strategic modelling) and the Bus Priority Study.

A workshop was held on the 10th of January 2018, to present the outcomes of the Bus Priority Study and seek feedback on the short to medium term mitigation measures and the long-term principles. The workshop was attended by representatives of the ULV London Boroughs and TfL specialists from bus network planning, and bus priority and operations. The challenges and opportunities were presented for the short, medium and long term scenarios, and with and without Crossrail 2. The long list of potential mitigation measures was presented and specific feedback was sought to prioritise the short-term measures. The outcomes are reported in **Section 4**.

3 Bus Priority Challenges and Opportunities

3.1 Short Term

TfL has already identified several areas for bus priority improvements in the short term (i.e. 2018/19). These improvements are set out in TfL's Bus Priority Delivery Portfolio (BPDP), which is a funding portfolio that helps boroughs identify and deliver locally-led bus priority improvements and initiatives that align with improving bus reliability in the network, and providing bus priority in areas where significant growth is expected.

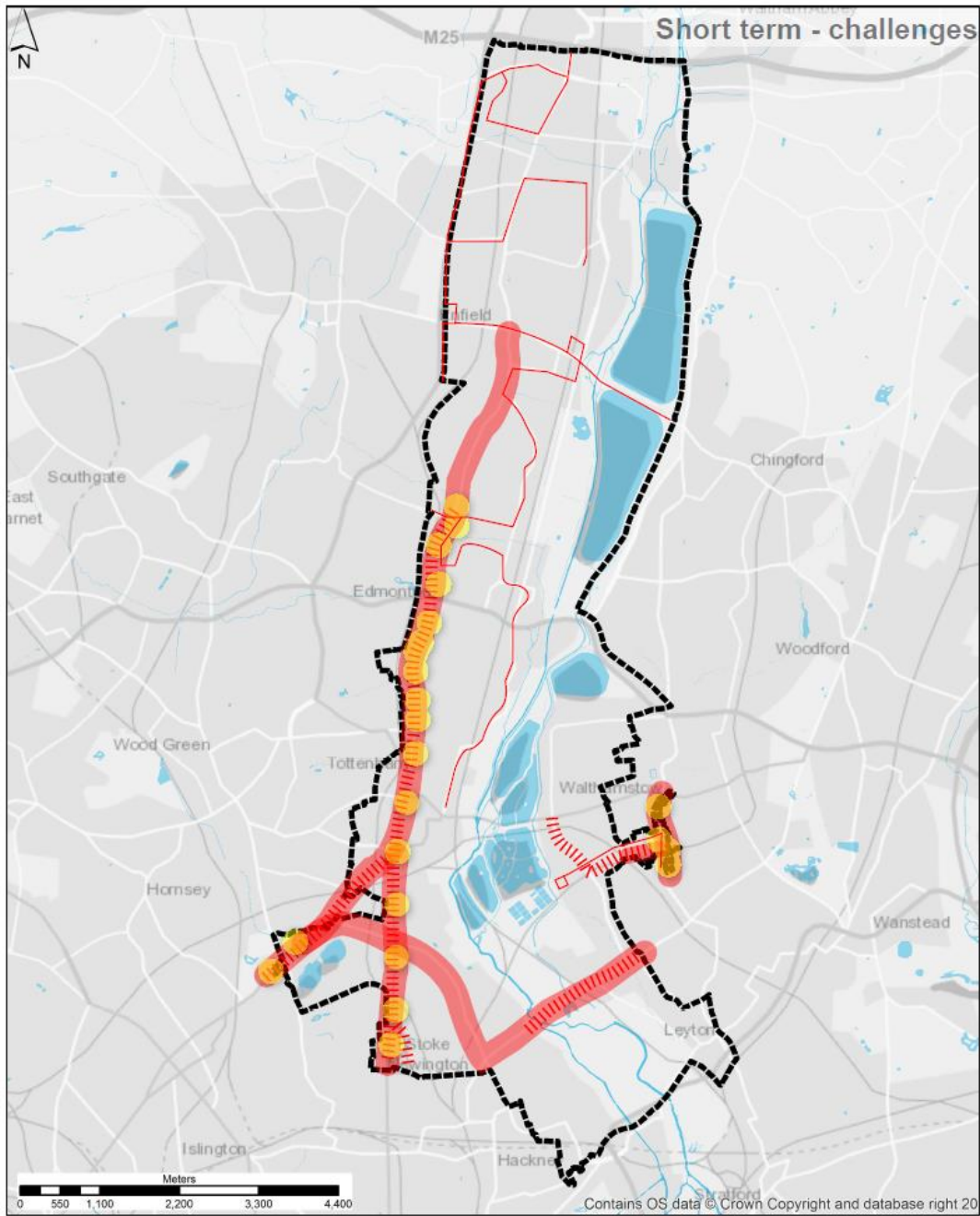
The short term scenario therefore considered growth due to take place within the ULV in the next five years, the challenges which this will present, and how these challenges can be tackled.

3.1.1 Challenges

Several short-term challenges are currently present within the ULV and are listed below and shown in **Figure 2**:

- A number of routes in the ULV are failing the reliability indicators. These routes are predominantly found in the northern area of the ULV;
- The busiest sections of the bus network in terms of frequency and patronage correlate to the busiest bus corridors and interchanges, such as A1010/A10 and Walthamstow Central; and
- These corridors also register the slowest journey times of the selected analysed routes.

Figure 2: Short term challenges



3.1.2 Short Term Opportunities

In the short term, there are a number of opportunities available which could help to mitigate the challenges found. The short-term opportunities are illustrated in **Figure 3** and explained in more detail in **Table 1**.

Figure 3: Short term opportunities

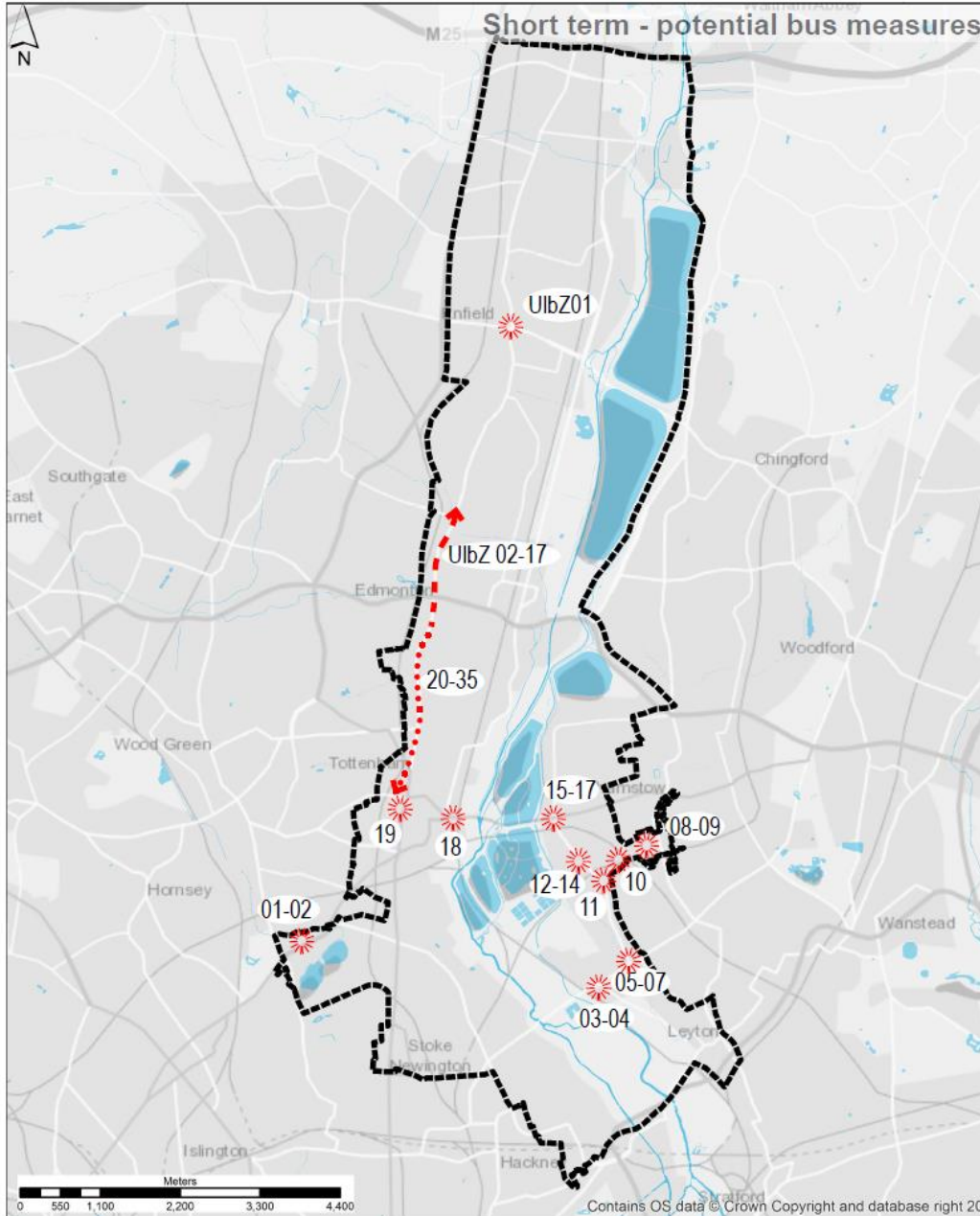


Table 1: Short Term Opportunities

Opportunity	Description
1	Seven Sisters Road/Green Lanes- Seven Sisters Road westbound approach extend bus lane to stop line
2	Seven Sisters Road/Woodberry Grove- Seven Sisters Road approaches extend bus lane to stop line
3	Lea Bridge Road eastbound approach extend bus lane (major works)
4	Proposal to take out westbound bus lane and move bus stop- revise scheme to facilitate buses pulling out of bus stop into ahead lane
5	Extend bus lane operation hours
6	Proposal to take out westbound bus lane- consider revising scheme to keep bus lane
7-10	Changes (extend) to single yellow line (Mon-Sat 8am-6.30pm)
11	Changes to loading restrictions (Mon-Fri 8-9.30am, 4.30-6.30pm)
12	Changes to single yellow line (Mon-Sat 8am-6.30pm) and loading (Mon-Sat 8am-6.30pm)
13	Changes to single yellow line (Mon-Sat 8am-6.30pm) and loading (Mon-Sat 8am-6.30pm)
14	Blackhorse Lane/Glenthorne Road consider signal removal or optimisation (green demand actuated minor arm)
15	Forest Road/Blackhorse Lane consider extending bus lanes to stop line
16	Forest Road/Blackhorse Lane repaint yellow box
17	Proposal to remove Blackhorse Lane northbound approach flare- revise scheme as this will likely cause delay to buses
18	Ferry Lane/Bus Station consider bus gate for movement turning into bus station
19	High Road/Monument Way southbound approach consider introducing bus lane at nearside lane and change middle lane to straight ahead for traffic
20-35	A1010 High Road/ Fore Street- various proposals to regulate single yellow line (operational peak period per direction only) and loading and parking bays to improve bus journeys
U1bZ 02-17	U1bBZ proposals for A1010 bus priority measures
U1bZ 01	Nags Head Road/ Hertford Road- remove square road marking, tighten kerblines and relocate pedestrian crossing closer to minimise inter-greens

3.2 Long Term

The Upper Lee Valley ‘vision’ in the long term will likely include Crossrail 2 and the additional growth associated with it. The long-term opportunities identified area series of complementary measures which are complementary to Crossrail 2.

3.2.1 Challenges

A number of long term challenges have been found for the ULV and these are split into ‘with’ and ‘without’ Crossrail 2 scenarios.

Without Crossrail 2

This scenario represents the stress point prior to any rail improvements and travel pattern shifts due to new infrastructure such as Crossrail 2. The challenges in this scenario (shown in **Figure 4**) are that:

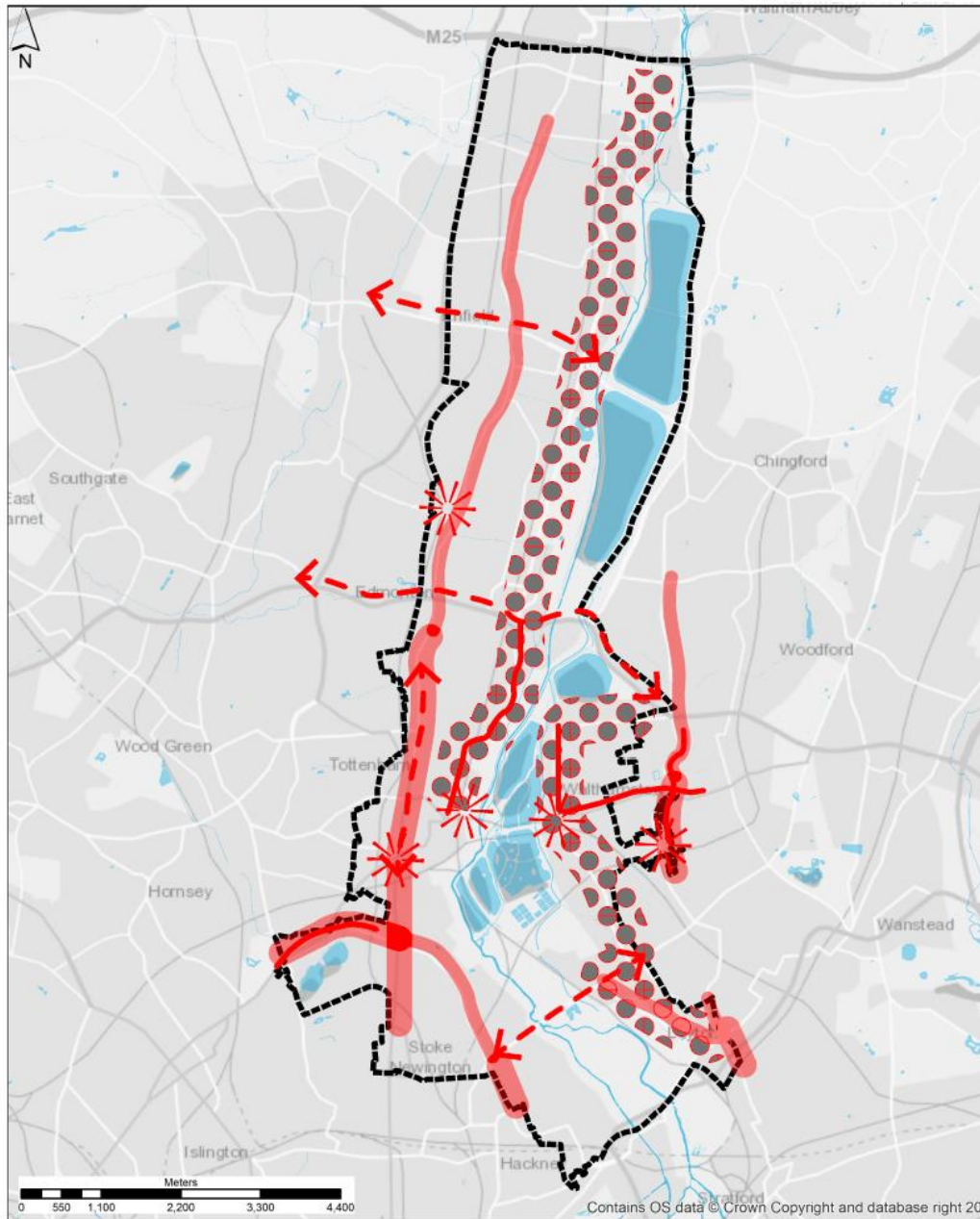
- Most of the high patronage corridors are radial routes feeding the key London Underground and rail interchanges. Modelling showed that the A1010/A10 corridor, the A112 Chingford Road/Hoe Street and the A503 Seven Sisters Road/Amhurst Road corridor are forecast to carry the most significant proportion of bus demand in both the ‘with’ and ‘without’ Crossrail 2 scenarios;
- The bus to rail interchange, and bus alighters, are set to increase at LU/LO/rail interchanges such as Tottenham Hale, Seven Sisters, Walthamstow, Blackhorse Lane and Edmonton Green; and
- Network coverage could be improved, as gaps currently exist in the network especially when considering the ‘night’ bus network and its relation to ‘night time economy’ and accessibility to a broader range of jobs.

With Crossrail 2

This scenario represents the challenges of the bus network following the introduction of Crossrail 2 and associated development growth (**Figure 5**):

- Bus patronage along key corridors shows resilience to rail improvements associated with Crossrail 2. The A1010/A10 corridor, the A112 Chingford Road/Hoe Street and the A503 Seven Sisters Road/Amhurst Road corridor are forecast to carry the most significant proportion of bus demand;
- The forecast ‘pull’ to and from the future Crossrail 2 stations and developments could be taken as evidence that an opportunity to investigate orbital connectivity in Outer London exists, in particular, considering the new transport hubs and jobs provided; and
- Enfield Lock, Brimsdown, Ponders End, Angel Road, Tottenham Hale and Blackhorse Road are forecast to increase passenger numbers by two or four times the current levels and all facilities, and space surrounding the station should be re-assessed to ensure that it is fit for purpose.

Figure 4: Long Term Challenges - without Crossrail 2








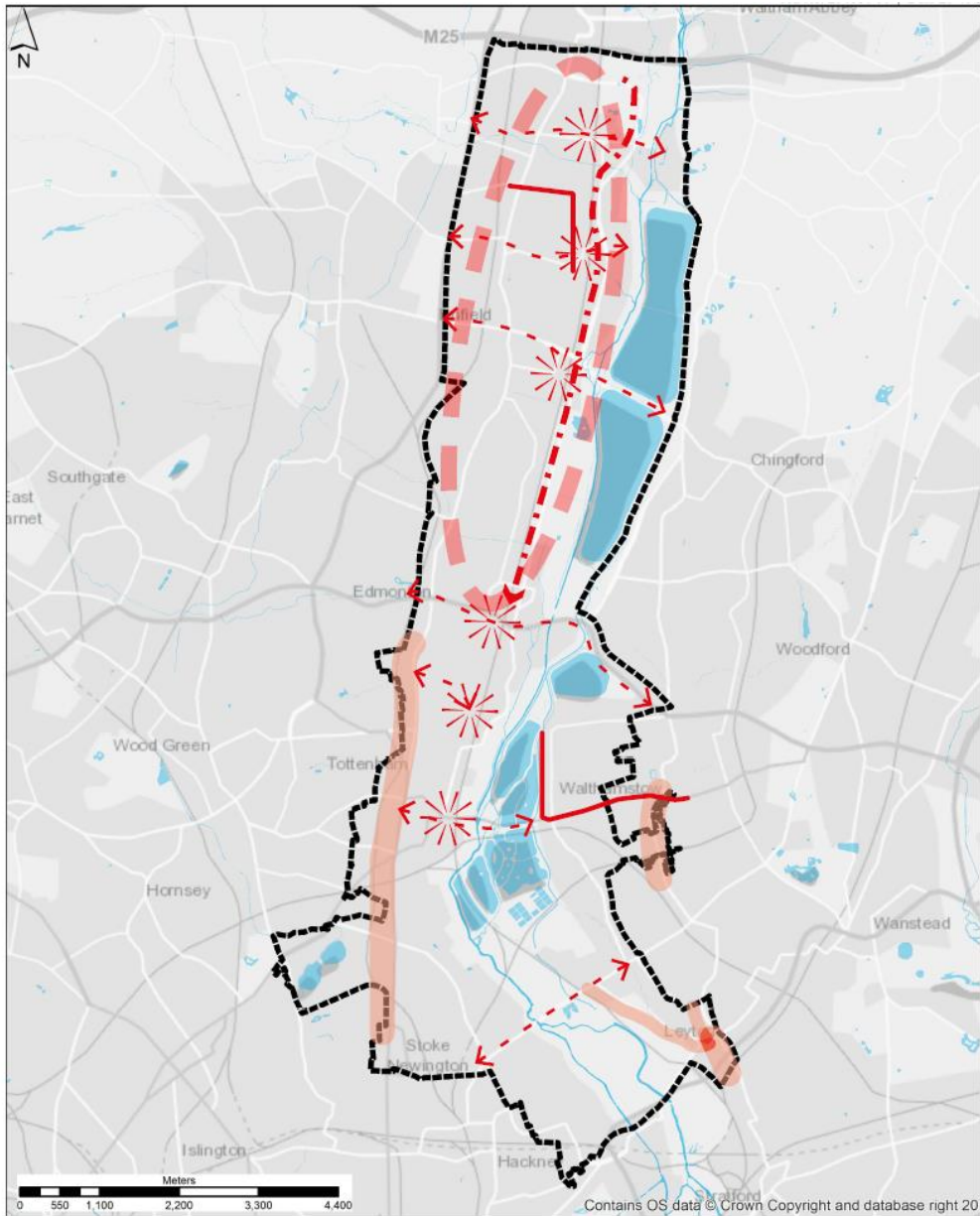





-  Gateway - increased bus alighters and station entries
-  Poor bus network coverage (night buses)
-  Critical Volume over Capacity sections of the bus network
-  'Sustainable trips' increase in bus patronage
-  Busiest bus corridors (patronage)

Figure 5: Long Term Challenges with Crossrail 2



-  Interchange - significant change in passenger impact on station and multi modal interchange
-  High private vehicle reliance
-  Critical Volume over Capacity sections of the bus network
-  Increased patronage
-  Busiest bus corridors (patronage)

3.2.2 Opportunities

There are several key opportunities which could improve bus services and provision in the long term. These opportunities are shown in **Figure 6**.

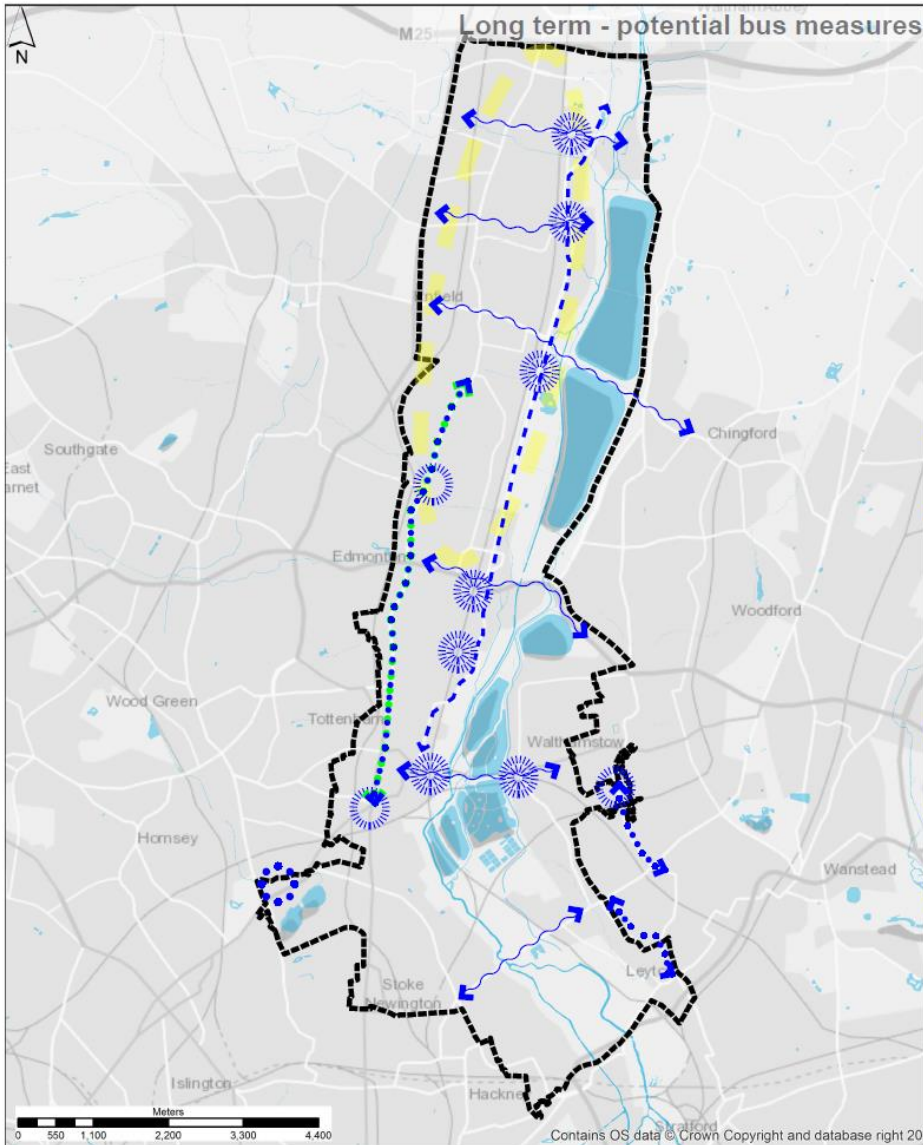
Some of the bus priority and network opportunities identified could support growth in the **ULV ahead of Crossrail 2**:

- Woodberry Downs masterplan and Seven Sisters opportunity area - opportunities for buses to be routed through the development (e.g. route extension);
- Enfield Town to Barking Overground - increased London Overground frequency could induce a patronage switch from buses to Overground hence reducing the 'high patronage - high frequency' related issues and helping to smooth services and regularise headways;
- A1010 corridor decrease in patronage and increased street activity- consider re-routing some services away from this corridor (149, 259, 349, 279);
- Review station interchange Level of Service, focusing on the interchange with buses and public realm spaces such as footway widths and crossings (a significant increase in bus to station interchange is forecast alongside an increased cycle and pedestrian activity in proximity of busy bus and rail stations); and
- Improve bus network coverage along A1055, linking some of the major early developments (Northumberland Park, Meridian Water, Ponders End) and leisure destinations (cinema, golf, sport grounds and access to Lea Valley Regional Park) and offer alternative prior to Crossrail 2.









Finally, other bus priority opportunities are more **focused around Crossrail 2** and the changes in patronage **and travel patterns that would follow**:

- East-West routes - improve frequency and coverage due to 'pull' from Crossrail 2 and new developments;
- Review station interchange Level of Service focusing on the interchange with buses and within station (there is forecast to be a significant increase in station entries and exits);
- Restructure bus services on busy corridors (e.g. A1010 and A503), such as the introduction of new express bus services; and
- Investigate expanding public transport offer to induce mode shift – for instance, introduce rapid transit services or demand responsive services in areas where the aspired mode shift is not achieved.

Figure 6: Long term opportunities



Long Term Opportunities

-  Woodberry Downs masterplan - opportunities for buses through development (eg W5 extension)
-  Enfield Town to Barking Overground - increased overground frequency induces patronage switch from buses to overground
-  A1010 decrease patronage & increased street activity - consider re-routing away some services (149, 259, 349, 279)
-  Review station interchange Level of Service focusing on all-modes arrival exit from the station (significant increase in passengers)
-  Review station and interchange Level of Service to cater for increased passengers
-  East-West routes - improve frequency and coverage due to 'pull' from CR2 and new developments
-  Improve bus network coverage along A1055 and offer alternative prior CR2
-  Investigate expanding public transport offer to induce mode shift - BRT or DRT

3.3 Medium Term

While the most significant proportion of ULV growth is expected to rely on Crossrail 2, the estimate is that approximately 45,000 new homes and 33,000 new jobs may be delivered between 2011 and 2021 - prior to Crossrail 2 opening. The uncertainties around the timescales and level of growth and infrastructure make it difficult to ascertain with precision what forms part of the medium term scenario. This scenario will most likely be a combination of short term challenges and 'without Crossrail 2' measures.

The areas most likely to deliver growth within the medium term are located south of the A406 North Circular and are close to high frequency bus corridors and major interchanges such as the A1010 and Walthamstow bus station and Tottenham Hale station. This means that the forecast population and employment density patterns will add demand in areas where the pressure for bus services is already high.

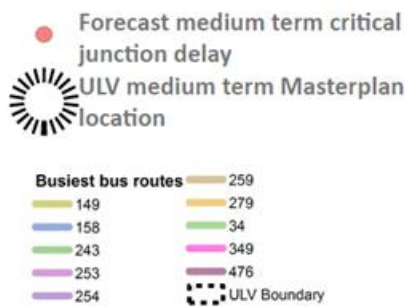
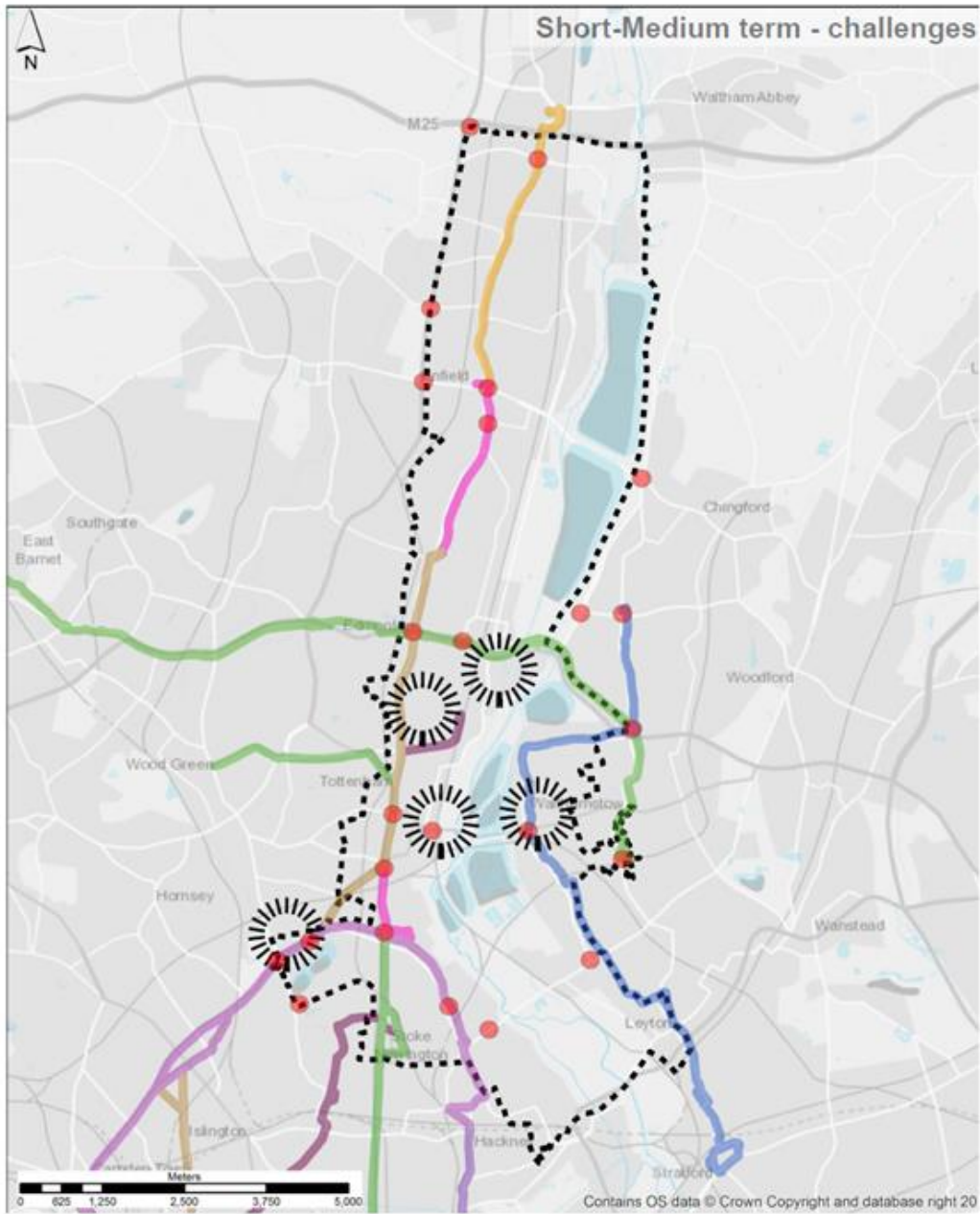
Therefore, the medium-term implications of growth until 2031 have been considered, as well as opportunities to mitigate any detrimental effects of rapid growth prior to the implementation of Crossrail 2.

3.3.1 Challenges

A number of challenges likely to happen in the medium term are currently present within the ULV (shown in **Figure 7**):

- Forecast junction delays suggest an increase in traffic delays along key routes, such as the A503 which could increase bus journey times;
- The next 5-10 years will see some of the major developments coming forward, and these are located within close proximity to the busiest and slowest bus corridors; and
- Additional demand will add patronage to some of the busiest bus routes.

Figure 7: Medium Term Challenges



4 Bus Priority Recommendations

4.1 Shared Priorities

The stakeholder engagement highlighted the shared principles upon which the London Boroughs and TfL can develop and prioritise the bus priority programme.

Road space reallocation emerged as an important item. It was recognised that cycle and public realm schemes have had a strong emphasis and the Boroughs are actively engaged with different parts of TfL to develop a number of corridor designs (Lea Bridge Road, Blackhorse Road, Forest Road/ Ferry Lane, Seven Sisters Road, Fore Street).

Feedback is provided in the Mitigation Measures Package to highlight where potential conflict arises between cycle and bus priority.

Quality of public transport also emerged as a shared priority, including not only benefits to the passengers (journey times, service frequency, and ease of boarding), but also the potential to improve the patronage and mode share by restructuring the network. The Mitigation Measures Package identified ‘quick win’ areas for consideration in the near future. TfL recognises the potential for improving bus network coverage, particularly in areas currently lacking bus services or night bus services (i.e. the northern end of Enfield). TfL is seeking to address these issues through the masterplan and development planning processes, securing section 106 funding for bus service improvements where possible.

Funding emerged as a shared priority. The boroughs and TfL recognise that network improvements as result of major S106 contributions might not be sufficient and might not align fully with the growth agenda set by the boroughs. As such, the lack of funding mechanisms is currently a potential constraint to the future delivery of an efficient and comprehensive bus network in the ULV.

4.2 Short Term Measure Prioritisation and Exclusions

Following the workshop, feedback was sought from the boroughs and other TfL parties on the opportunities presented in the previous section. The purpose of this being to capture any opportunities and challenges which might have been overlooked and to inform the prioritisation of the short term measures.

The short term measures consultation considered each measure in relation to:

- **Safety** – including positive or negative impacts on road safety;
- **Passengers** – considering effects on ease to board and alight and improvements in journey times;
- **Impact on non-bus users** – considering, for example, interaction with pedestrians and cyclists;
- **Bus operations** – looking at ease and safety of manoeuvre;

- **Strategic objectives** – effectiveness in addressing the wider objectives, such as mode shift towards public transport and improving Londoners journey experience;
- **Cost** – considering the potential cost of the intervention; and
- **Risks** – such as project conflicts, dependencies and oppositions (e.g. public or stakeholders).

Few of the proposed short term measures are in direct conflict with other proposals (LEBZ or Mini-Holland's and other road space reallocation schemes), where possible bus priority will be taken on-board, but this results in the proposed measures being on hold or addressed elsewhere. This is the case for:

- The A503 Seven Sisters Road proposals – LB Hackney have informed that they are pursuing a road reallocation scheme jointly with TfL, the project is in its initial phases and bus priority will be taken in consideration during this process;
- Walthamstow Central bus station – LB Waltham Forest is implementing a new scheme at Selbourne Road junction with A112, this should help improving the bus operations benefitting both passengers and non-bus users;
- Tottenham Hale station – LB Haringey and TfL are planning further changes to the station layout and access which will address bus priority at this location;
- Lea Bridge Road – a new development including a school is being promoted along the road and LB Waltham Forest is planning a cycle route. LB Hackney is pursuing opportunity to support bus journeys 'switching' the bus lane direction. The proposed measures should be on hold awaiting for the new road layout and development access to be operational and bus journeys should be monitored to flag any future issues;
- Bruce Grove – TfL advised that a new arrangement will be implemented along the A10 High Road in proximity of Bruce Grove town centre³. The proposed bus priority measures should therefore be dropped and bus operations monitored in the area following the new scheme implementation; and
- A10 High Road junction with Monument Way – LB Haringey advised that the proposed change of lane use would represent a safety and capacity issue.

The feedback was recorded and has informed the prioritisation of measures, with schemes in conflict marked as 'to be dropped'. The remaining measures have been prioritised by looking at the potential benefits and disbenefits in relation to the principles listed above. The result of the short term measure prioritising process is presented in full in **Table 2** below.

Highlighted in green are the measures that have the higher benefits, in yellow the measures that have the lower benefits, and in red the measures which are recommended to be dropped.

³ <https://tfl.gov.uk/travel-information/improvements-and-projects/bruce-grove-a12>

Table 2: ULV Short Term Mitigation Package Measures Prioritisation

		<i>Scoring criteria</i>		<i>Ranking criteria</i>									
		Negative impact	-1			High benefits							
		Negligible	0			Lower benefits							
		Positive	1			Drop Scheme							
Number	Reference	Safety	Passengers	Non bus users	Bus operations	Strategic objectives	Cost	Risks	Comments/feedback	Actions	Prioritisation Score	Recommendation/Priority	
1	ULV 1	0	1	-1	1	1	-1	-1	LB Hackney (Dominic West) - Scheme on hold - Borough looking at improving safety at junction and TFL working to provide CSH along Seven Sisters Road TFL (David Hopkinson) - There is a Bus Priority scheme to build out the eastern footway to tighten the turning radius (subject to tracking) for traffic wishing to turn left on to the A503. Further, there is a Road Safety scheme at this junction	Investigate cycle scheme and opportunity for input in design	0	Drop - consider in medium term	
2	ULV 2	0	1	-1	1	1	0	-1	LB Hackney -> Scheme on hold - Borough looking at improving safety at junction and TFL working to provide CSH along Seven Sisters Road	Investigate cycle scheme and opportunity for input in design	1	Drop - consider in medium term	
3	ULV 3	1	1	0	1	1	-1	-1			2		
4	ULV 4	1	1	1	1	0	-1	-1			2		
5	ULV 5	0	1	1	1	1	1	0			5		
6	ULV 6	1	1	0	1	0	-1	-1			1		
7	ULV 7	1	1	1	0	0	0	-1			2		
8	ULV 8	1	1	-1	1	1	1	-1			3		
9	ULV 9	1	1	-1	1	1	1	-1			3		
10	ULV 10	1	1	-1	1	1	1	-1			3		
11	ULV 11	0	1	1	1	1	0	-1			3		
12	ULV 12	1	1	-1	1	1	1	-1			3		
13	ULV 13	1	1	-1	1	1	1	-1			3		
14	ULV 14	1	1	1	1	1	-1	0			4		
15	ULV 15	1	1	-1	1	0	-1	-1			0		
16	ULV 16	1	1	-1	1	0	-1	-1			0		
17	ULV 17	1	1	-1	1	0	-1	-1			0		
18	ULV 18	1	1	0	1	0	-1	0	LB Haringey (Neil Goldberg) - Scheme might be impacted/ in conflict with Tottenham Hale proposals current at planning condition discharge stage		2	Drop - consider in medium term	
19	ULV 19	0	1	-1	1	1	-1	-1	TFL (David Hopkinson) - A scheme to install a signalised crossing on the A10 arm at the junction LB Haringey (Neil Goldberg) - In principle supports but verify conflicts with other TFL parties as scheme to install crossing is currently been proposed		0		
20	ULV 20	1	1	-1	1	0	-1	-1	LB Haringey (Neil Goldberg) - Cannot support. Would result in a traffic backup of an already busy junction. Also, one lane turning right will make conflict with the safety other road users which is being looked at as a priority for this junction		0	Drop - continue monitoring	
21	ULV 21	1	1	-1	1	1	-1	0	LB Haringey (Neil Goldberg) - Not appropriate for inset bays. The Council is promoting the high street as a walkable town centre with possible pavement trading so this would conflict	Consider parking relocation elsewhere	2	On hold - consider parking relocation elsewhere	
22	ULV 22	1	1	-1	1	1	-1	0	LB Haringey (Neil Goldberg) - Not appropriate for inset bays. The Council is promoting the high street as a walkable town centre with possible pavement trading so this would conflict	Consider parking relocation elsewhere	2	On hold - consider parking relocation elsewhere	
23	ULV 23	1	1	-1	1	1	-1	0	TFL (David Hopkinson) - scheme will go ahead https://tfl.gov.uk/travel-information/improvements-and-projects/bruce-grove-a10 LB Haringey (Neil Goldberg) - Not appropriate for inset bays. The Council is promoting the high street as a walkable town centre with possible pavement trading so this would conflict		2	Drop - continue monitoring	
24	ULV 24	1	1	-1	1	1	-1	0	TFL (David Hopkinson) - scheme will go ahead https://tfl.gov.uk/travel-information/improvements-and-projects/bruce-grove-a11		2	Drop - continue monitoring	
25	ULV 25	1	1	1	1	0	0	-1	TFL (David Hopkinson) - scheme will go ahead https://tfl.gov.uk/travel-information/improvements-and-projects/bruce-grove-a12 LB Haringey (Neil Goldberg) - Cannot support. Would result in a traffic backup of an already busy junction. Also, one lane turning right will		3	Drop - continue monitoring	
26	ULV 26	1	1	-1	1	1	-1	0	TFL (David Hopkinson) - A review of LEBZ measures are being consider on the Haringey section of the A1010. Location yet to be confirmed LB Haringey (Neil Goldberg) - In principle support (TBC if single or double line)		2		
27	ULV 27	1	1	-1	1	0	-1	-1	TFL (David Hopkinson) - A review of LEBZ measures are being consider on the Haringey section of the A1010. Location yet to be confirmed LB Haringey (Neil Goldberg) - Support subject to engagement with businesses . no support for inset bays	Consider parking relocation elsewhere	0	On hold - consider parking relocation elsewhere	
28	ULV 28	1	1	-1	1	1	-1	-1	TFL (David Hopkinson) - A review of LEBZ measures are being consider on the Haringey section of the A1010. Location yet to be confirmed LB Haringey (Neil Goldberg) - Support subject to engagement with businesses . no support for inset bays	Consider parking relocation elsewhere	1	On hold - consider parking relocation elsewhere	
29	ULV 29	1	1	-1	1	1	0	0	TFL (David Hopkinson) - A review of LEBZ measures are being consider on the Haringey section of the A1010. Location yet to be confirmed LB Haringey (Neil Goldberg) - No objection		3		
30	ULV 30	1	1	-1	1	1	-1	-1	TFL (David Hopkinson) - A review of LEBZ measures are being consider on the Haringey section of the A1010. Location yet to be confirmed LB Haringey (Neil Goldberg) - Not appropriate for inset bays. The Council is promoting the high street as a walkable town centre with possible pavement trading so this would conflict	Consider parking relocation elsewhere	1	On hold - consider parking relocation elsewhere	
31	ULV 31	1	1	-1	1	1	-1	-1	TFL (David Hopkinson) - A review of LEBZ measures are being consider on the Haringey section of the A1010. Location yet to be confirmed LB Haringey (Neil Goldberg) - Not appropriate for inset bays. The Council is promoting the high street as a walkable town centre with possible pavement trading so this would conflict	Consider parking relocation elsewhere	1	On hold - consider parking relocation elsewhere	
32	ULV 32	1	1	-1	1	1	-1	-1	TFL (David Hopkinson) - A review of LEBZ measures are being consider on the Haringey section of the A1010. Location yet to be confirmed LB Haringey (Neil Goldberg) - Not appropriate for inset bays. The Council is promoting the high street as a walkable town centre with possible pavement trading so this would conflict	Consider parking relocation elsewhere	1	On hold - consider parking relocation elsewhere	
33	ULV 33	1	1	-1	1	1	-1	-1	TFL (David Hopkinson) - A review of LEBZ measures are being consider on the Haringey section of the A1010. Location yet to be confirmed LB Haringey (Neil Goldberg) - Not appropriate for inset bays. The Council is promoting the high street as a walkable town centre with possible pavement trading so this would conflict	Consider parking relocation elsewhere	1	On hold - consider parking relocation elsewhere	
34	ULV 34	1	1	1	1	0	0	-1	TFL (David Hopkinson) - A review of LEBZ measures are being consider on the Haringey section of the A1010. Location yet to be confirmed LB Haringey (Neil Goldberg) - support re-looking at loading times		3		
35	ULV 35	1	1	1	1	0	0	-1	TFL (David Hopkinson) - A review of LEBZ measures are being consider on the Haringey section of the A1010. Location yet to be confirmed LB Haringey (Neil Goldberg) - support re-looking		3		

As can be seen in **Table 2**, the list of measures identified as having a strong case are:

- ULV 5 – Lea Bridge Road bus speed monitoring and bus lane operation extension;
- ULV 8-9 – Selbourne Road changes to single yellow line restriction to protect bus journeys;
- ULV 10 – South Grove changes to single yellow line restriction to protect bus journeys;
- ULV 11 – St James Street changes to loading times to protect bus journeys;
- ULV 12-13 – St James Street changes to single yellow line restriction to protect bus journeys;
- ULV 14 – Blackhorse Lane junction with Maude Road investigate opportunities to optimise signals;
- ULV 29 – High Road proximity of Scotland Green enforcing parking restrictions;
- ULV 34 – High Road junction with Northumberland Park re-paint yellow box road markings; and
- ULV 35 – High Road junction with White Hart Lane re-consider if bus lane cutting back is necessary (NDP2 scheme).

The remaining list of measures which have a less strong case but would benefit bus priority is:

- ULV 15 – 16 – 17 – Blackhorse Lane junction with Forest Road re-consider the scheme to include bus priority through the junction;
- ULV 19 – High Road junction with Philip Lane investigate opportunity to extend bus lane; and
- ULV 27 – High Road Proximity to Reform Road consider extending restrictions on loading.

4.3 Bus Priority Recommendations

Considering the long overall timescales which will see the delivery of the planned growth and infrastructure in the ULV and considering the uncertainties around growth quantum, timescales and funding, it seems appropriate to tackle bus priority in a phased approach by providing a framework of recommended interventions for key areas and corridors.

Key areas of intervention were identified consistently in each opportunity and challenges scenario: short, medium and long term, and therefore the recommendations have been compiled for each of the key areas presenting the proposed interventions in this section.

The following recommendations clearly demonstrate how bus priority is key to delivering sustainable growth in the ULV, but also demonstrate how bus priority

is interlinked and dependent on other measures. Capturing the interlinking relations of these will be key to planning for the bus priority interventions.

Figure 8: A1010 corridor recommendation summary

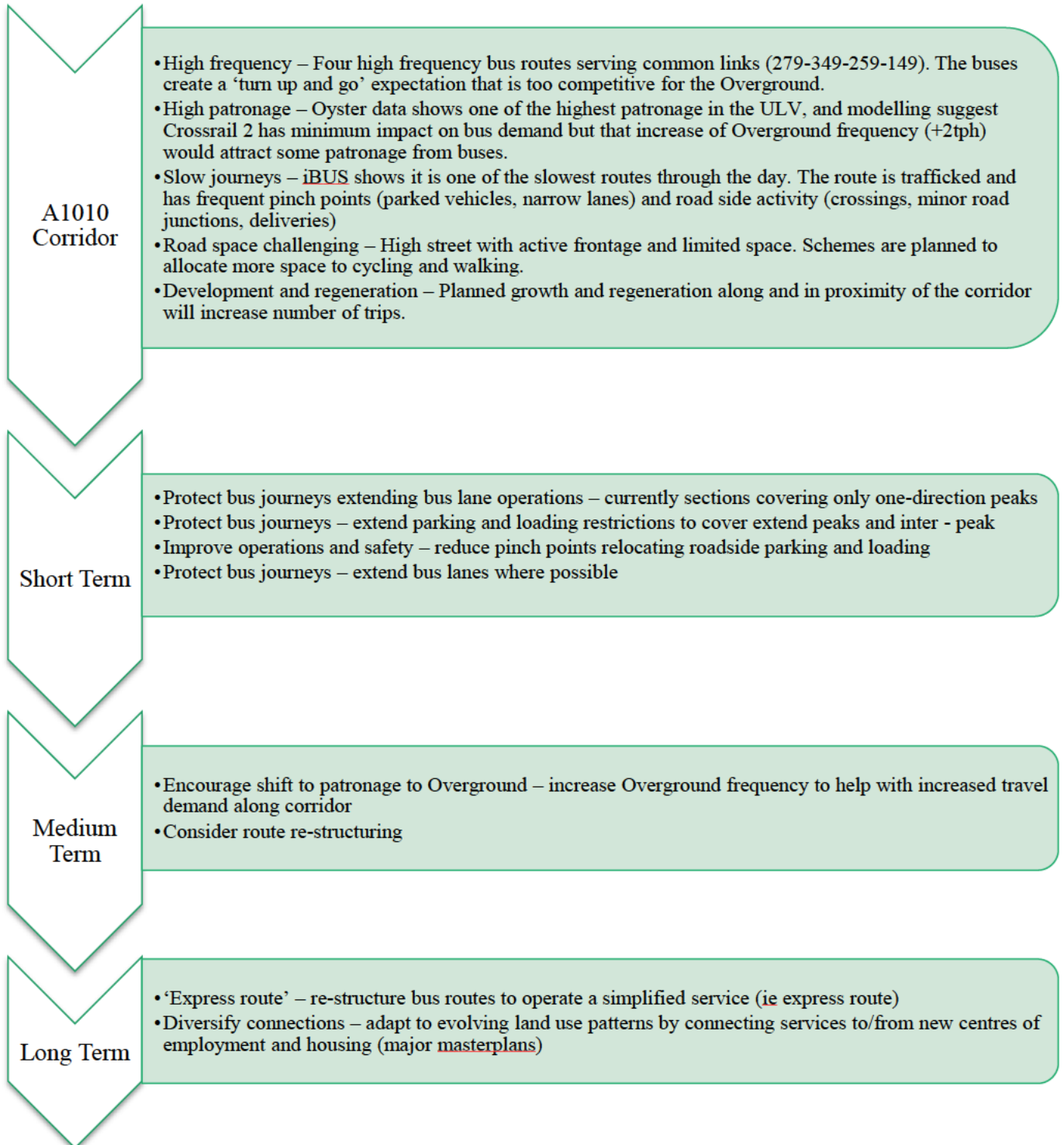


Figure 9: Walthamstow Central recommendations summary

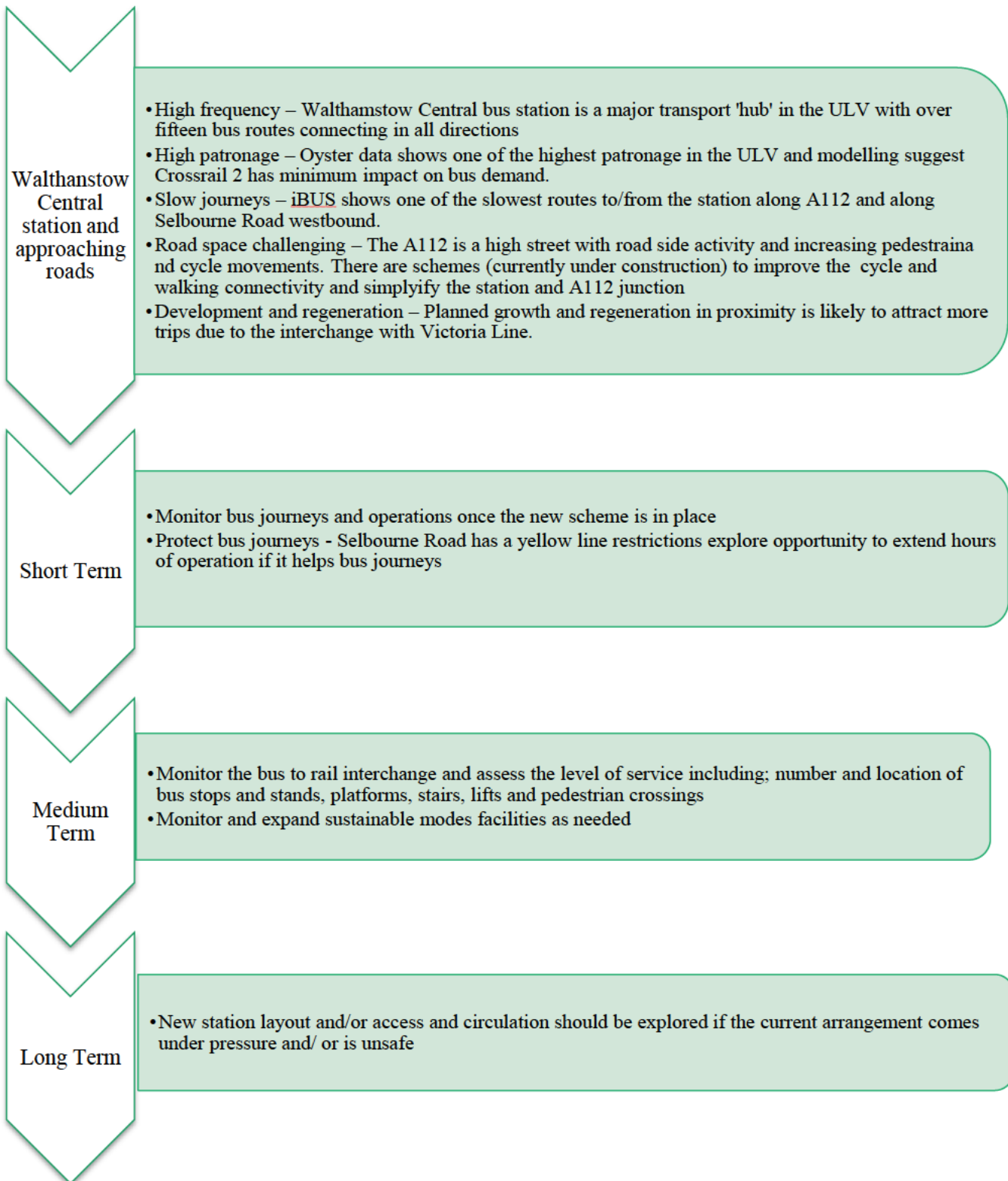


Figure 10: East – West routes recommendations summary

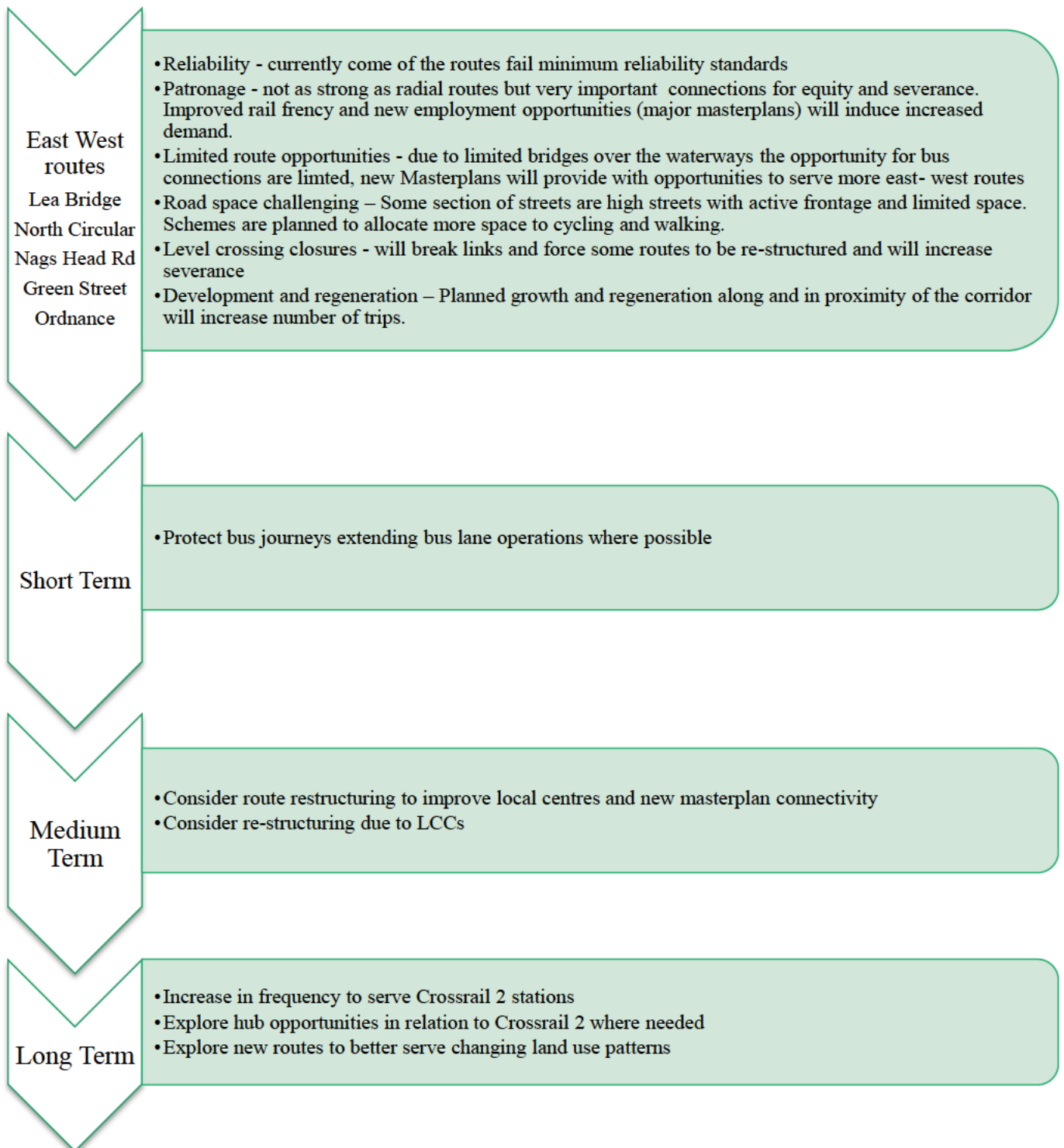


Figure 11: A1055 Mollison Avenue - Meridian Way - Watermead Way

