



Greater Bristol Bus Network Major Scheme Business Case

Appendix 2B

Scheme Description

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2B.1. Scheme Description

INTRODUCTION

- 2B.1.1 Drawing Number C00-001 (shown in Appendix 2E) provides an overview of the measures comprising the Greater Bristol Bus Network (GBBN) Major Scheme Business Case (MSBC), and Drawing Number C00-002 shows the main bus routes that would take advantage of the measures proposed. Table 2B.1 is a summary of all routes and proposals for RTP1, Diversion and Frequency Changes within the preferred scheme.

2B.2. Corridor One – M32

- 2B.2.1 This corridor is one of the most congested in the area and one of the major contributors of poor air quality. The M32 carries express services from areas to the north of Bristol and from Wales as discussed in section 2A.2 of Appendix 2A. The corridor is also vital for movements outbound from Bristol to these surrounding areas and also for longer distance trips for both work and leisure. In terms of employment, combined with Corridor 7, it will start to provide realistic public transport alternatives for the expanding employment opportunities in the North Fringe.
- 2B.2.2 Buses suffer from unreliable, and relatively slow, journey times during the peak periods. There is a large potential to attract new bus users on this corridor and provide fast and efficient express bus services both in and out of the city to provide an attractive service for work and leisure trips.
- 2B.2.3 The key features of the corridor are illustrated in Figure 2B.1 and described in more detail below. Annex A of the Programme Handbook (Appendix 4A) includes copies of the detailed plans.

M32 JUNCTION 2 TO HOULTON STREET - SOUTHBOUND BUS LANE

- 2B.2.4 A new 1250m offside bus lane will be provided for southbound buses from the beginning of the long slip road to Junction 3. This will provide a substantial benefit to bus passengers on a very congested section of the M32. The bus lane will terminate just short of the proposed Broadmead/ Cabot Circus retail development, one of the largest retail developments in the country. Buses will then use the new road arrangement where the continuation of the M32 (A4032) meets Bristol's Inner Ring Road (A4044).

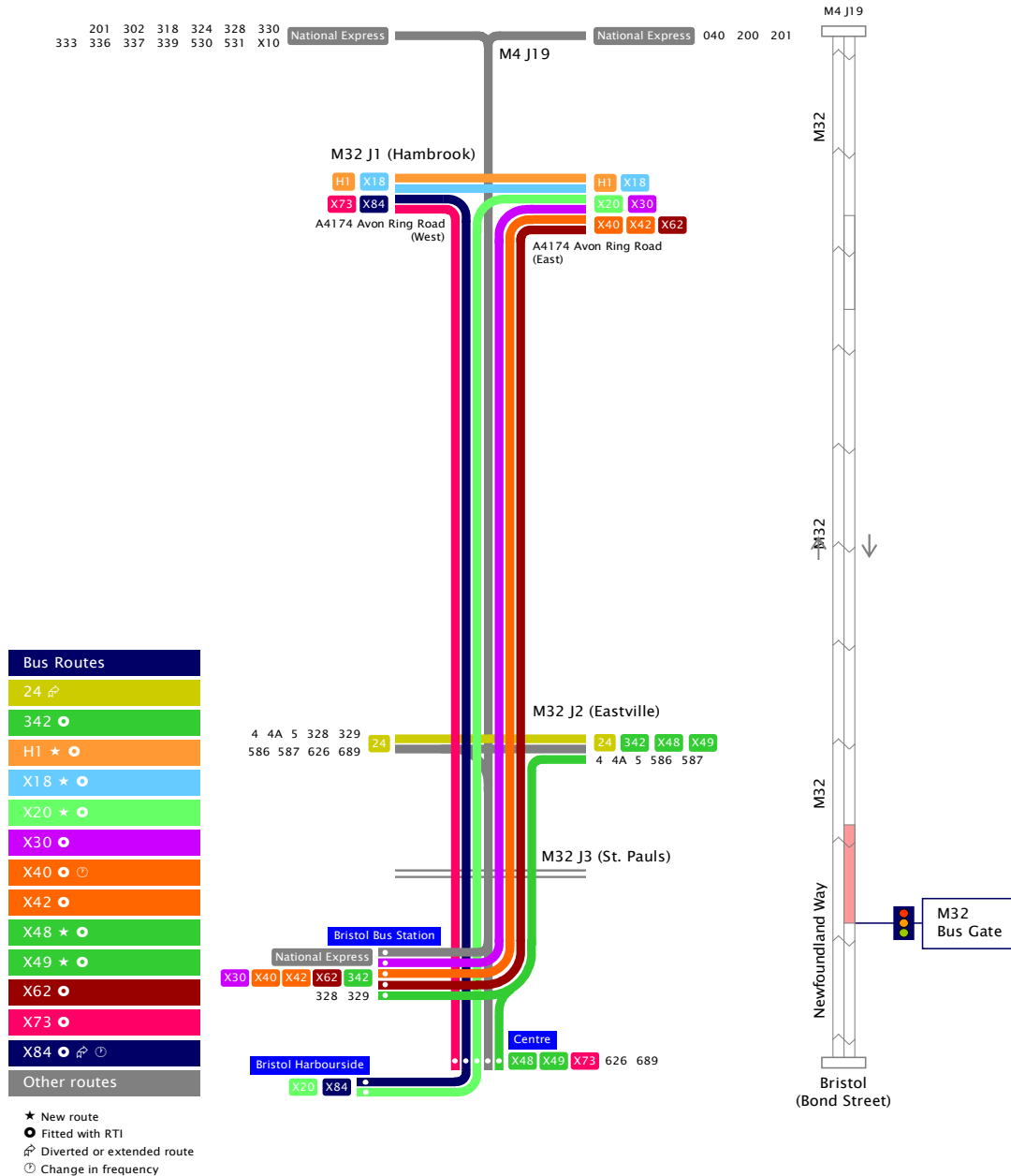
Figure 2B.1 - Corridor One: M32

Greater Bristol Bus Network Major Scheme Bid

M32 M4 Junction 19 to Bristol City Centre

Suggested Routes

Corridor **1**



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- 2B.2.5 The bus lane will begin with an offside merge, with space made available by moving the nearside running lane into the hard shoulder, and the narrowing of the running lanes. Speed limits will need to be reduced locally to allow for safe running in the narrower lanes and loss of the hard shoulder. The bus lane will continue through the cutting under Junction 3. The bus lane will become a general running lane 150m short of a new signal controlled junction which is part of the Broadmead Redevelopment (Dwgs. CO1-003, CO1-004, Co1-005, CO1-006, CO1-007)

BUS STOPS

- 2B.2.6 None planned.

CORRIDOR 1 - SUMMARY OF PROVISIONS

- 2B.2.7 Improvements for **buses** will include:
- ◆ Offside bus lane beginning at long slip road at M32 Junction 3 south to Houlton Street.
- 2B.2.8 Improvements for **pedestrians, cyclists** and other road users will include:
- ◆ No impact on pedestrians or cyclists.
 - ◆ For other road users the impact is likely to be small in the peak, although there will be a slight increase in off-peak inbound journey times due to the reduced speed limit from Junction 2.

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2B.3. Corridor Two – A4018

2B.3.1 This corridor serves dense residential districts north of central Bristol, as well as Bristol University, Park St and Clifton Down shopping centres. North of the Downs the bus routes split into routes serving Sea Mills, Lawrence Weston, Southmead and Henbury. Some of these areas experience significant deprivation. These routes also serve a number of large secondary schools. Routes that serve the northern end of the corridor also connect with The Mall regional shopping centre at Cribbs Causeway. This shopping centre has a high proportion of people accessing it by private car resulting in very significant congestion and poor reliability of bus services. The corridor also plays an important role in serving recreational and leisure attractions along the corridor such as Bristol Zoo and areas of natural beauty such as the Blaise Estate.

2B.3.2 The key features of the corridor are illustrated in Figure 2B.2 and described in more detail below. Annex A of the Programme Handbook (Appendix 4A) includes copies of the detailed plans.

LYSANDER ROAD – BETWEEN PEGASUS ROAD AND MERLIN ROAD

2B.3.3 The southbound (Bristol bound) carriageway will be widened. This additional width will be used to provide a bus lane to enable buses to avoid the queue of traffic exiting from The Mall that occurs during the peak retail periods. Adjacent drainage features on the western side of the road prevent the widening of the northbound (Mall bound) carriageway (Dwg. CO2-002).

A4018 / LYSANDER ROAD ROUNDABOUT

2B.3.4 The northbound entry and circulatory carriageway will be widened to allow the provision of a short length of bus lane to enable buses to avoid the queue of right turning traffic that occurs during the peak retail periods (Dwg. CO2-003).

A4018 WESTBURY ROAD – BUS LANE EXTENSION

2B.3.5 The existing inbound bus lane on Westbury Road will be extended by a further 500m. This will give inbound buses access to the front of the queue at the junction with Redland Hill. This bus lane will be created by the conversion of the existing two (wide) lanes into two general traffic lanes and one bus lane (Dwgs.CO2-004, CO2-005).

A4018 WHITELADIES ROAD, BLACKBOY HILL JUNCTION – IMPROVEMENTS TO GYRATORY

2B.3.6 The small gyratory system at the top of Blackboy Hill will see the give way junctions and zebra crossings replaced by a three-phase signal controlled

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junction, to improve bus priority and improve general traffic flows. New Puffin crossing at the junction will provide safer crossing points for pedestrians to and from the Downs. The improved pedestrian access is particularly important as this is a key access point to the Downs (Dwg. CO2-006).

A4018 WHITELADIES ROAD – OUTBOUND BUS LANE

- 2B.3.7 A new 725m outbound peak period bus lane will be provided from Aberdeen Road to the Burlington Road where it will terminate at a bus gate/puffin crossing. Two new puffin crossings will be provided where refuges have to be removed to accommodate the bus lane. Two zebra crossings will be upgraded to puffin crossings and a pelican crossing will be upgraded to a puffin to reduce delays to buses by the Clifton Down Shopping Centre. The parking regime will need to be revised to accommodate the bus lane and some junctions will be improved.
- 2B.3.8 Clifton Down Interchange will benefit from high quality bus shelters and improved pedestrian crossing facilities to ensure good links between the bus stops, the shops and the railway station (Dwgs. CO2-007, C02-008, CO2-009, CO2-010).

BUS STOPS

- 2B.3.9 The bus stops in the corridor, would be improved as follows:
- ◆ Level 1 = 17
 - ◆ Level 2 = 23
 - ◆ Level 3 = 47
- 2B.3.10 For an explanation of levels 1, 2 and 3, see Appendix 2D.

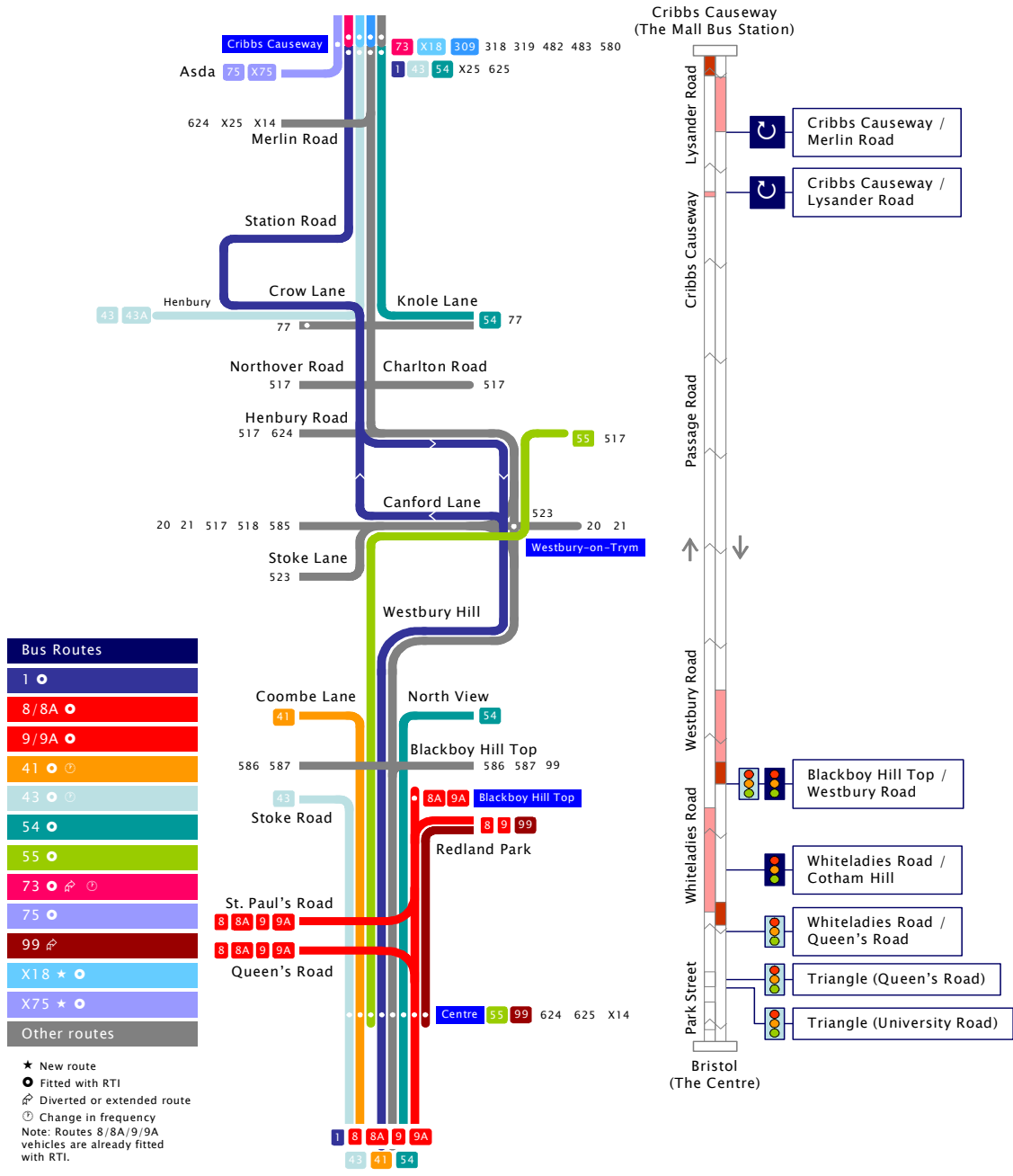
CORRIDOR 2 SUMMARY OF PROVISIONS

- 2B.3.11 Improvements for **buses** will include:
- ◆ A northbound (Mall bound) bus lane on the A4018 approaching the Cribbs Causeway/Lysander Road roundabout;
 - ◆ A southbound (Bristol bound) bus lane on Lysander Road between Pegasus Road and Merlin Road;
 - ◆ An inbound bus lane along Westbury Road;
 - ◆ An improved gyratory at the top of Blackboy Hill;
 - ◆ An outbound bus lane along Whiteladies Road;
 - ◆ An improved interchange at Clifton Down; and

Figure 2B.2 - Corridor Two: A4018

Greater Bristol Bus Network Major Scheme Bid
A4018 Cribbs Causeway to Bristol City Centre

Suggested Routes
Corridor 2



Key to proposed bus priority measures

- Existing Bus Lane
- Proposed Bus Lane
- Existing HOV (2+) Lane
- Proposed HOV (2+) Lane
- Proposed traffic signals
- Proposed traffic signal upgrade
- Proposed roundabout improvement

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2B.3.12 Improvements for **pedestrians, cyclists** and other road users will include:

- ◆ Improved pedestrian crossing facilities;
- ◆ Improved cycle facilities in bus lanes; and
- ◆ Improved junction arrangements for general traffic.

2B.4. Corridor Three – A4

2B.4.1 This route connects Bristol and Bath, two Principal Urban Areas, as well as the intermediate communities of Keynsham and Saltford. It also passes Bristol Temple Meads station providing significant opportunities for interchange with rail and other bus services. In Bath the route runs very close to the Western Riverside regeneration area. The route suffers from high levels of congestion in both Bristol and Bath. The route between Brislington and central Bristol already has bus priority but there remain a number of locations that slow bus journeys down substantially. The route is important for both local trips and as a key tourist route. The route also has two Park & Ride sites, one at Brislington serving Bristol and another at Newbridge serving Bath.

2B.4.2 The key features of the corridor are illustrated in Figure 2B.3 and described in more detail below. Annex A of the Programme Handbook (Appendix 4A) includes copies of the detailed plans.

A4 UPPER BRISTOL ROAD, BATH

2B.4.3 The existing carriageway layout will be altered to create an eastbound bus lane. This will allow buses to avoid the queues that form in the morning and evening peaks. The island at the signals will be amended to improve traffic flows (Dwg. CO3-002).

A4 NEWBRIDGE ROAD, BATH

2B.4.4 The existing carriageway layout will be altered to create an eastbound bus lane. The existing puffin crossing will be altered to create a combined bus gate and signalised pedestrian crossing. This will allow buses to avoid the queues that form in this location in the morning peak (Dwg. CO3-003).

A4 TWERTON FORK, BATH

2B.4.5 A bus detector loop will be installed on the A4 westbound approach lane from Bath. This will provide additional priority to buses during the evening peak (Dwg. CO3-004).

A4 HICKS GATE

2B.4.6 It is proposed to signalise the Hicks Gate roundabout in order to better manage the operation of this junction to enable bus services to be given priority, accidents to be reduced and congestion overall to be reduced (Dwg. CO3-005).

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A4 CALLINGTON ROAD TO STOCKWOOD ROAD – OUTBOUND BUS LANE, BRISLINGTON

- 2B.4.7 Approximately 200m of outbound bus lane will be provided on the approach to the Flowers Hill junction and 100m on the approach to Stockwood Road. The latter will include a bus gate to allow buses to get to the front of the queue at the junction. This will require localised widening of the road with the footway being moved into the existing grass verge. The junction with Flowers Hill will be refurbished and cycle facilities will be included. (Dwgs. CO3-006, CO3-007).

A4 TOTTERDOWN BRIDGE TO THREE LAMPS JUNCTION - INBOUND BUS LANE

- 2B.4.8 Two lengths of 24-hour bus lane, either side of Totterdown Bridge, will be provided on the approach to Three Lamps Junction to feed into the existing bus lane. The first will be 100m and the second 250m. These bus lanes will allow buses to get to the front of the queue at Three Lamps Junction. The Totterdown Bridge junction will be refurbished including a banned right turn from Bath Road. Bus lanes will be provided within the existing carriageway.
- 2B.4.9 One pelican crossing will be converted to a puffin to reduce delays (Dwgs. CO3-008, CO3-009).

TEMPLE MEADS

- 2B.4.10 The junction with Temple Meads Approach will be refurbished to include improved pedestrian access. The signals at Bath Bridge roundabout will be upgraded to allow bus priority (Dwg. CO3-010).

BUS STOPS

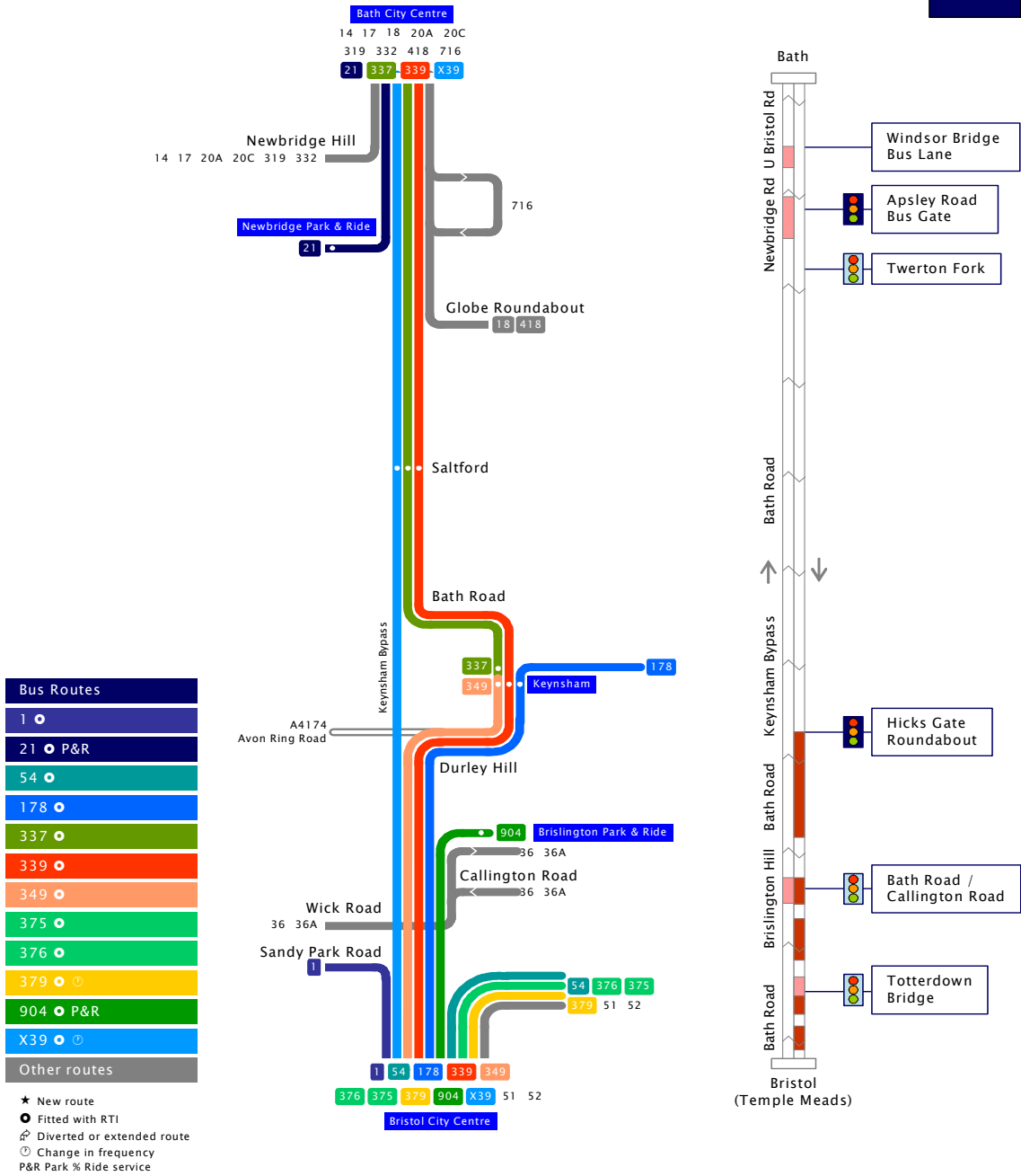
- 2B.4.11 The bus stops in the corridor, would be improved as follows:
- ◆ Level 1 = 14
 - ◆ Level 2 = 23
 - ◆ Level 3 = 57
- 2B.4.12 For an explanation of Levels 1, 2 and 3, see Appendix 2D.

FIGURE 2B.3 - CORRIDOR THREE: A4

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A4 Bath City Centre to Bristol City Centre

Suggested Routes **Corridor 3**





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CORRIDOR 3 - SUMMARY OF PROVISIONS

2B.4.13 Improvements for **buses** will include:

- ◆ Eastbound bus lane on Upper Bristol Road;
- ◆ Eastbound bus lane and bus gate on Newbridge Road;
- ◆ Priority for buses at Twerton Fork;
- ◆ Priority for buses at Hicks Gate Roundabout;
- ◆ Outbound bus lane approaching Stockwood Road junction;
- ◆ Inbound bus lane approaching Three Lamps junction; and
- ◆ Bus priority at Bath Bridge signals.

2B.4.14 Improvements for **pedestrians, cyclists** and other road users will include:

- ◆ Enhanced pedestrian facilities on Newbridge Road;
- ◆ Better traffic regulation at Hicks Gate Roundabout;
- ◆ Improved pedestrian facilities at Flowers Hill junction;
- ◆ Improved facilities for cyclists including use of bus lanes, Advanced Stop Lines and cycle lane markings at junctions; and
- ◆ Improved pedestrian crossing facilities outside Temple Meads station.

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2B.5. Corridor Four – Service 73

- 2B.5.1 This route serves a large number of very popular destinations including central Bristol, the employment areas to the north of Bristol (MoD, AXA, Aztec West), Bristol Parkway and Cribbs Causeway as well as a significant number of residential communities, including Bradley Stoke. The route follows the southern part of the A38 showcase bus route and links to Bristol Temple Meads with a recent increase in frequency from 15 to 12 minutes. Many of the destinations along the route are highly congested resulting in considerable delays to bus services. The proposed measures will improve reliability and reduce journey times.
- 2B.5.2 The key features of the corridor are illustrated in Figure 2B.4 and described in more detail below. Annex A of the Programme Handbook (Appendix 4A) includes copies of the detailed plans.

PEGASUS ROAD

- 2B.5.3 The carriageway will be widened between the Standing Stone roundabout and Coach Park roundabout. The road formerly named Highwood Lane between Jupiter Road and Pegasus Road will be re-opened to traffic exiting the retail area. This will enable bus lanes to be provided in both directions along Pegasus Road, so that buses can avoid the traffic queues and delays that occur in the area during the retail peak periods (Dwg. CO4-002).

CONISTON ROAD SIGNAL UPGRADE

- 2B.5.4 The traffic signals at the junction of Coniston Road and Highwood Road will be upgraded to MOVA / SVD.

AZTEC WEST ROUNDABOUT

- 2B.5.5 The carriageway will be widened to provide eastbound and westbound bus lanes between the Aztec West Business Park and Woodlands Lane. This will enable buses to avoid the queues and delays that occur on the approaches to the roundabout during the weekday morning and evening peak periods (Dwg. CO4-004).

NEW ROAD BUS LINK

- 2B.5.6 A bus gate will be formed between the north end of New Road and Briery Furlong. This will enable buses to avoid the northbound traffic queue which approaches the Church Road roundabout and railway bridge during the weekday evening peak periods (Dwg. CO4-007).

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GREAT STOKE WAY SOUTHBOUND BUS LANE

- 2B.5.7 A new southbound bus lane will be constructed between Fox Den Road and the Abbey Road roundabout. The existing carriageway will be widened to provide for the new bus lane. The bus lane will provide benefits during both the morning and evening peaks for bus services operating to Bradley Stoke, Stoke Gifford and those calling at Bristol Parkway Station.
- 2B.5.8 The existing toucan crossing will be relocated nearer to the Abbey Wood roundabout to assist pedestrians crossing Great Stoke Way and for cyclists travelling along the Ring Road (Dwg. CO4-008).

FILTON AVENUE NORTHBOUND BUS LANE

- 2B.5.9 A new northbound bus lane will be constructed between Stanley Avenue and the junction with the A4174. The bus stop in Filton Avenue will be relocated a short distance further south to alleviate the problem of stationary buses blocking this movement. (Dwg. CO4-009).

REFURBISHED LOCKLEAZE ROAD JUNCTION

- 2B.5.10 The signals at the junction with Lockleaze Road/ Wessex Avenue will be upgraded to improve control and reduce delays. Advanced Stop Lines will be provided for cyclists (Dwg. CO4-010).

BUS STOPS

- 2B.5.11 The bus stops in the corridor, would be improved as follows:

- ◆ Level 1 = 14
- ◆ Level 2 = 36
- ◆ Level 3 = 38

- 2B.5.12 For an explanation of Levels 1, 2 and 3, see Appendix 2D.

CORRIDOR 4 – SUMMARY OF PROVISIONS

- 2B.5.13 Improvements for **buses** will include:
- ◆ Two-way bus lanes along Pegasus Road between the Standing Stone roundabout and the Coach Park roundabout;
 - ◆ East and westbound bus lanes across the A38 Aztec West roundabout;
 - ◆ A northbound bus gate between New Road and Brierly Furlong;
 - ◆ A southbound bus lane along Great Stoke Way to Abbey Wood roundabout;

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- ◆ A northbound bus lane on Filton Avenue between Stanley Avenue to the Avon Ring Road; and
- ◆ Selective Vehicle Detection (SVD) priority for buses at all traffic signal controlled junctions.

IMPROVEMENTS FOR CYCLISTS, PEDESTRIANS AND OTHER ROAD USERS

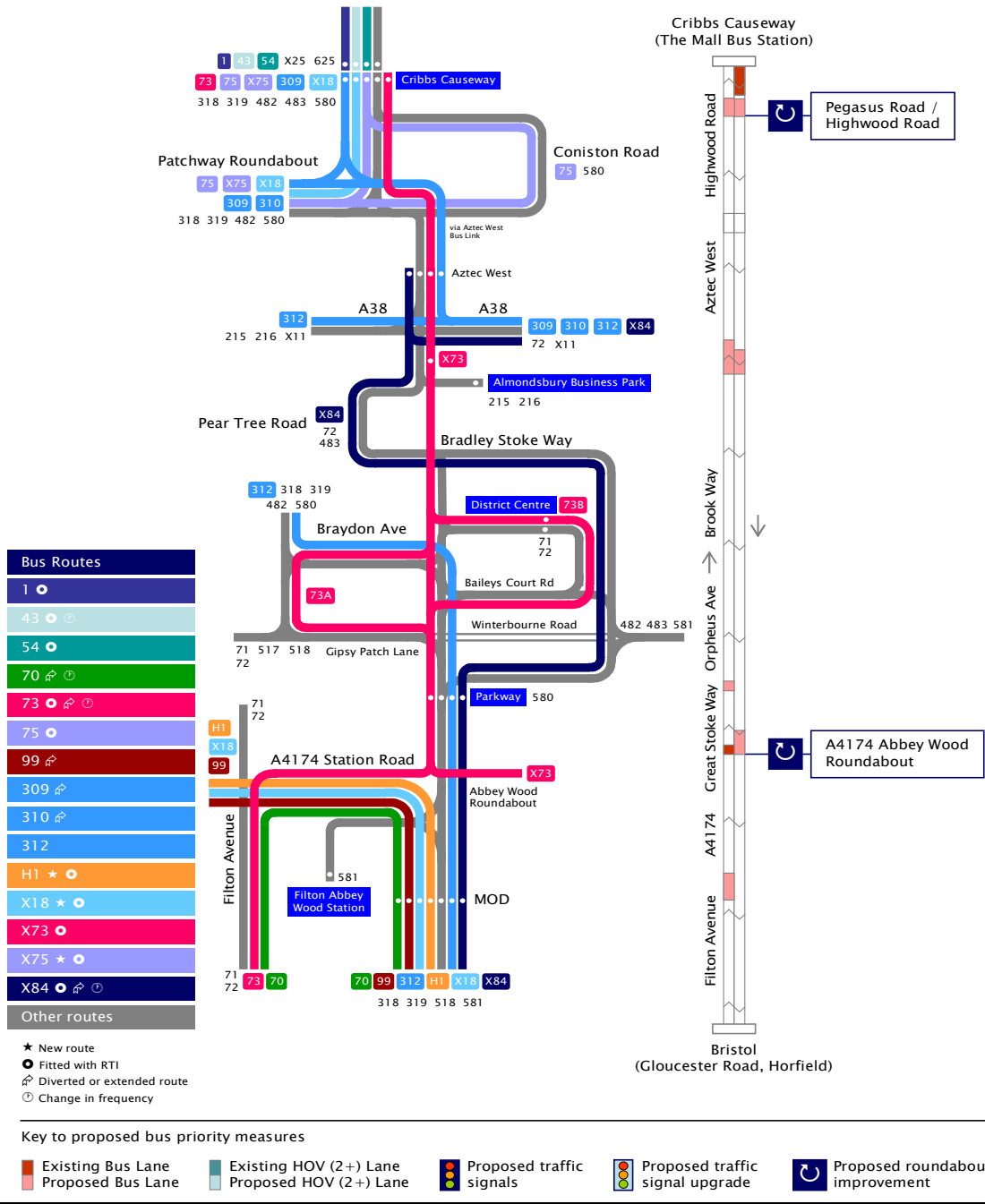
- 2B.5.14 Cyclists will be able to use the new bus lanes at:
- ◆ Pegasus Road, between the Standing Stone roundabout and the Coach Park roundabout;
 - ◆ Aztec West roundabout;
 - ◆ Great Stoke Way between Fox Den Road and the Avon Ring Road;
 - ◆ Filton Avenue, between Stanley Road and the Avon Ring Road; and
- 2B.5.15 There will be a general reduction in queues, delays and traffic congestion, which will benefit other road users.

Figure 2B.4 - Corridor Four: Route 73

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Route 73 Cribbs Causeway to Bristol City Centre

Suggested Routes



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2B.6. Corridor Five – A432

2B.6.1 This route is an important commuter route serving Yate, the new development at Emersons Green, the existing residential areas to the north east of central Bristol and the Stapleton Road shopping centre and railway station. The innermost section links with the improvements being delivered as part of the A420 showcase route.

2B.6.2 The key features of the corridor are illustrated in Figure 2B.5 and described in more detail below. Annex A of the Programme Handbook (Appendix 4A) includes copies of the detailed plans.

FISHPONDS ROAD, FISHPONDS

2B.6.3 A 900m long inbound peak period bus lane will be provided from Beechwood Road to Drummond road. The bus lane will provide substantial improvements to journey times for bus passengers.

2B.6.4 The Cross Hands Junction will be fully signalised, including bus priority facilities. This will improve conditions for buses, cars and pedestrians.

2B.6.5 The zebra crossing in the vicinity of Straits Parade will be upgraded to a puffin to minimise delays to buses and provide improved access to the new bus stop arrangement. A further zebra crossing will also be converted to a puffin crossing. The junction with New Station Road will be realigned to improve safety. Cycle lanes will be provided at junctions and the parking regime will be revised (Dwgs. CO5-005, CO5-006).

LODGE CAUSEWAY, FISHPONDS

2B.6.6 An inbound peak period bus lane will be provided on either side of the Lodge Causeway junction, in order to link in with the existing bus lane. A zebra crossing will be converted to a puffin crossing and new pedestrian facilities will be provided at the junction with Lodge Causeway. These measures will improve journey times for bus passengers, particularly at the approach to the busy Lodge Causeway junction. They will also improve pedestrian crossing facilities.

2B.6.7 The parking regime will be revised (Dwg. CO5-007).

MULLER ROAD JUNCTION, EASTVILLE

2B.6.8 The improvements to the layout at the junction of Muller Road and Fishponds Road will improve capacity and traffic flows through the junction in all directions (Dwgs. CO5-008, CO5-015).

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FISHPONDS ROAD AND STAPLETON ROAD

- 2B.6.9 A new 200m inbound 24-hour bus lane with a pre-signal will be provided terminating before the East Parade junction. The junction with Robertson Road will also be upgraded to include bus priority facilities. A new pedestrian crossing will be provided at the pre-signal and a zebra crossing will be upgraded to a puffin. Stretches of cycle lane will be provided to improve conditions for cyclists.
- 2B.6.10 The zebra crossing outside Stapleton Road railway station will be upgraded to a puffin crossing.
- 2B.6.11 The parking regime will be revised (Dwgs. C05-009, CO5-010).

BUS STOPS

- 2B.6.12 The bus stops in the corridor, would be improved as follows:
- ◆ Level 1 = 62
 - ◆ Level 2 = 70
 - ◆ Level 3 = 62
- 2B.6.13 For an explanation of Levels 1, 2 and 3, see Appendix 2D.

CORRIDOR 5 – SUMMARY OF PROVISIONS

- 2B.6.14 Improvements for **buses** include:
- ◆ A revised junction at Cross Hands;
 - ◆ A new inbound bus lane on Fishponds Road between Beechwood Road and terminating after Lodge Causeway;
 - ◆ Increased capacity on the Muller Road junction; and
 - ◆ An inbound bus lane and pre-signal approaching Robertson Road.
- 2B.6.15 Improvements for **cyclists, pedestrians** and other road users
- ◆ Access for cyclists to all new bus lanes listed above;
 - ◆ Additional lengths of cycle lane along Fishponds Road;
 - ◆ Improved pedestrian facilities along Fishponds Road;
 - ◆ New crossing facilities as part of the Cross Hands, Lodge Causeway and Muller Road junction upgrades; and
 - ◆ Upgrade of zebra crossing to puffin crossings.

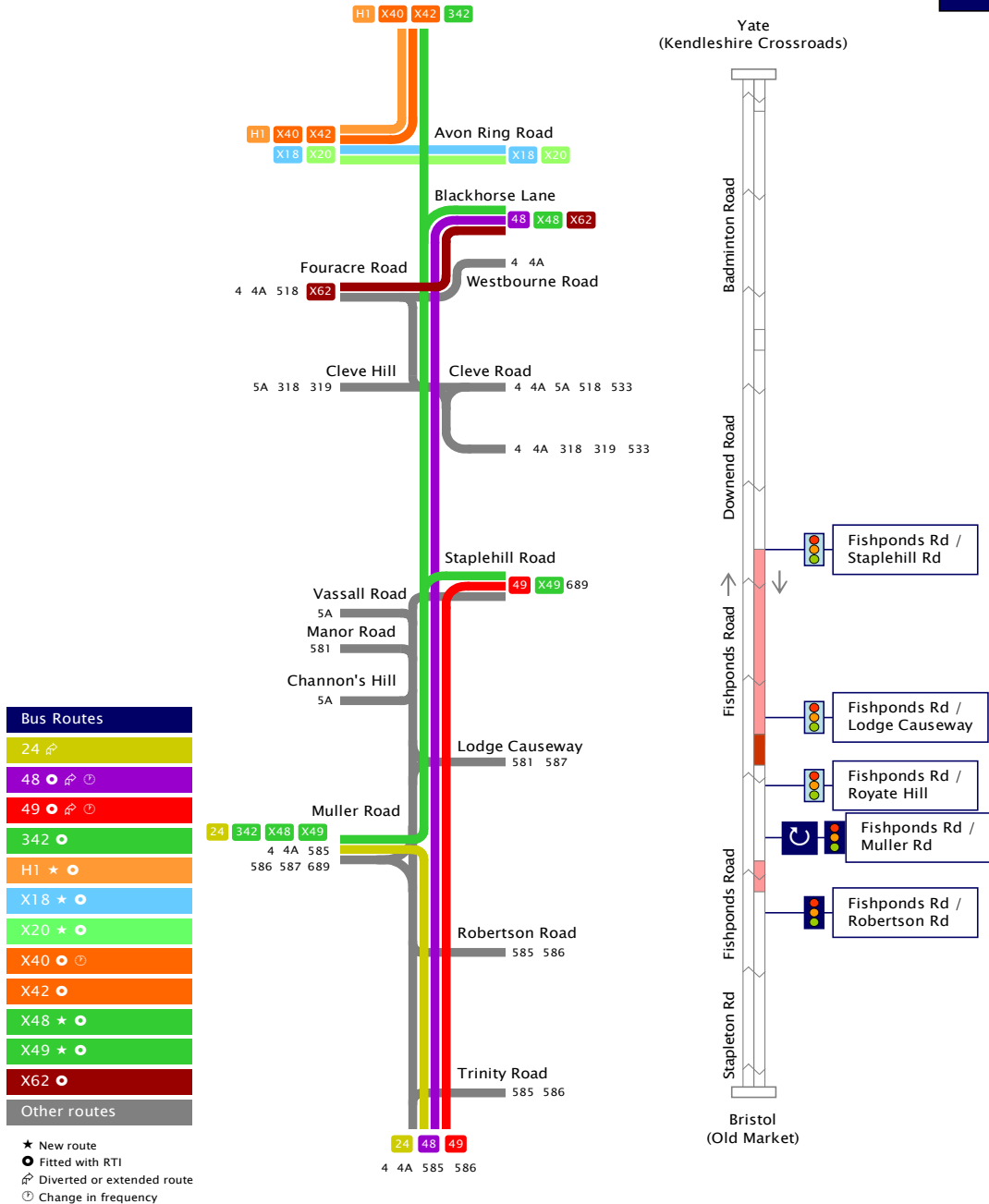
Figure 2B.5- Corridor Five: A432

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A432 Yate to Bristol City Centre

Suggested Routes

Corridor **5**



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2B.7. Corridor Six – A37

2B.7.1 This route serves residential areas in south east Bristol, as well as the Broad Walk shopping centre and Hengrove secondary school. Some of the areas it serves also experience high levels of deprivation. This route could also provide fast access to the Hengrove Park development site, one of the largest regeneration sites in the area. It then continues to Norton-Radstock, also serving intermediate villages.

2B.7.2 The key features of the corridor are illustrated in Figure 2B.6 and described in more detail below. Annex A of the Programme Handbook (Appendix 4A) includes copies of the detailed plans.

STAUNTON LANE JUNCTION

2B.7.3 The existing junction will have bus detection installed which will operate with MOVA.

ST JOHNS LANE JUNCTION

2B.7.4 The existing signal controller at the junction with St Johns Lane will be upgraded to improve bus priority. Advanced Stop Lines will be provided for cyclists. Two pelican crossings will be converted to puffin crossings to minimise vehicle delay (Dwg. C06-008, CO6-009).

BUS STOPS

2B.7.5 The bus stops in the corridor, would be improved as follows:

- ◆ Level 1 = 14
- ◆ Level 2 = 21
- ◆ Level 3 = 32

2B.7.6 For an explanation of Levels 1, 2 and 3, see Appendix 2D.

CORRIDOR 6 - SUMMARY OF PROVISIONS

2B.7.7 Improvements for **buses** will include:

- ◆ Pelican crossings changed to puffins; and
- ◆ Bus priority at St Johns Lane junction.

2B.7.8 Improvements for **pedestrians, cyclists** and other road users will include:

- ◆ Pelican crossings converted to puffins.

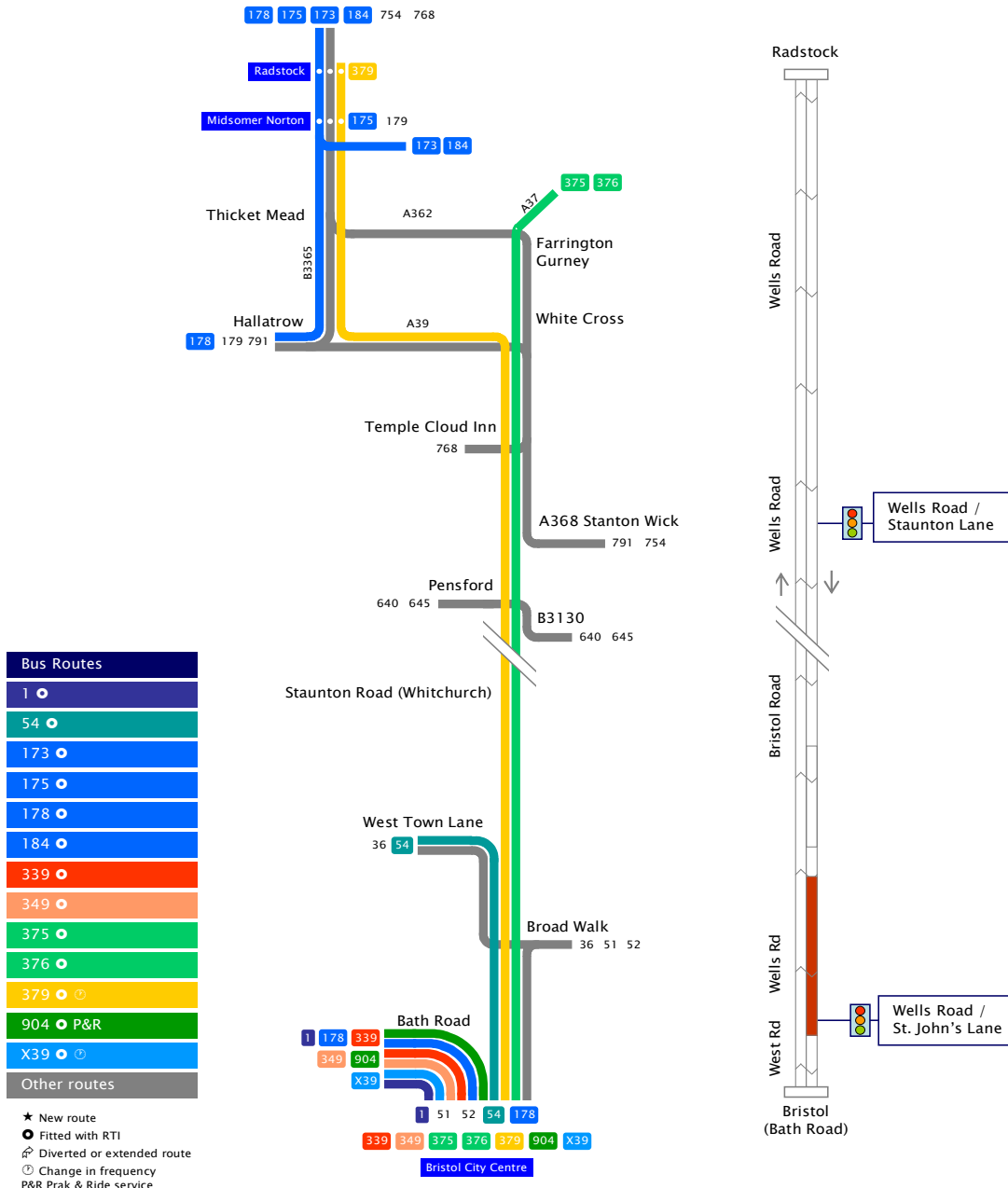
Figure 2B.6- Corridor Six: A37

Greater Bristol Bus Network Major Scheme Bid

A37 Radstock & Midsomer Norton to Bristol City Centre

Suggested Routes

Corridor **6**



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2B.8. Corridor Seven

- 2B.8.1 The A4174 Avon Ring Road serves the Northern and Eastern edge of the city and is dual carriageway for most of its length. Apart from the M4/M5 and M32 motorways it is the most heavily used road in the area and is frequently congested. The bus services are poorly developed although there has been a gradual increase in the number of express services. It serves the important employment and development sites around Filton and Harry Stoke and links to the next development at Emersons Green.
- 2B.8.2 Major opportunities for the development of new and improved services and significant developer funding is available. Measures on this corridor will support services on both the A432 and M32 corridor as well as providing opportunities for improved express services between central Bristol and Emersons Green, Bradley Stoke and the north fringe.
- 2B.8.3 The key features of the corridor are illustrated in Figure 2B.7 and described in more detail below. Annex A of the Programme Handbook (Appendix 4A) includes copies of the detailed plans.

FILTON AVENUE TO ABBEY WOOD ROUNDABOUT

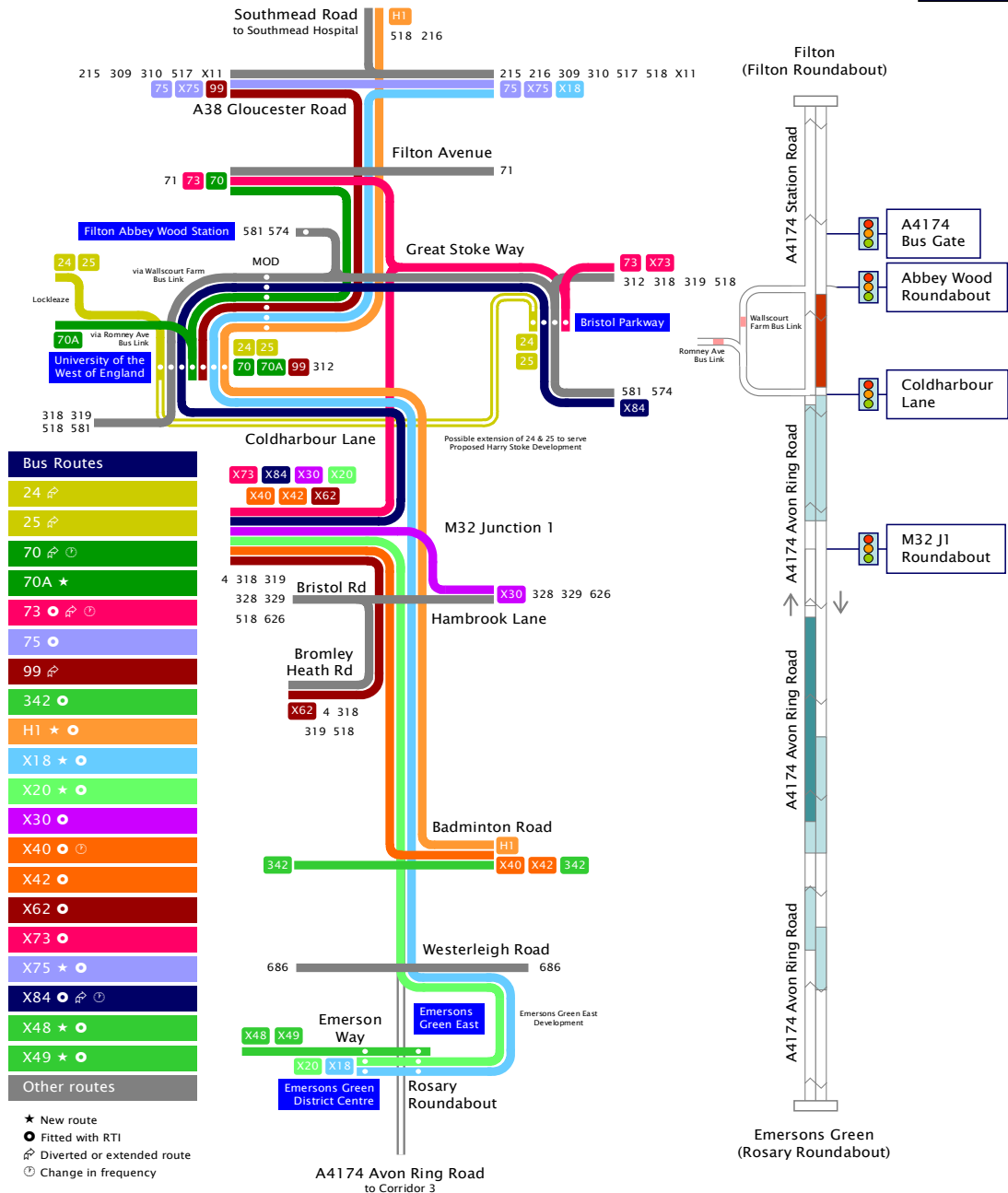
- 2B.8.4 Bus detection is to be installed in the existing bus lay-by on the eastbound Ring Road approach to Abbey Wood roundabout. This will be linked to the existing toucan crossing just to the west of the lay-by so that this can act as a bus gate. Traffic will be stopped, allowing the bus to leave the lay-by and enter the right hand lane for the roundabout which is the route that all buses use here. From the lay-by to the roundabout, a third lane of standard width will be added by widening into the existing very wide central reserve.
- 2B.8.5 A new toucan crossing on New Road will be provided from developer funding as pedestrians find it difficult to use the existing uncontrolled crossing. The crossing will also assist cyclists on this side of the road completing the link to the Sainsbury's site.
- 2B.8.6 On the south side of the Ring Road, footways along the retail park link road will be widened, using developer funding, to accommodate shared use with cyclists and a new toucan crossing will be provided (Dwg. CO7-002).

Figure 2B.7- Corridor Seven: A4174

Greater Bristol Bus Network Major Scheme Bid

A4174 Avon Ring Road: Filton to Emersons Green

Suggested Routes **Corridor 7**



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ABBEY WOOD ROUNDABOUT

- 2B.8.7 The principal change to the Abbey Wood roundabout will be the extension of the Great Stoke Way central median and the widening of the carriageway into the roundabout central island. To assist pedestrians and cyclists to cross Great Stoke Way a new toucan crossing will be provided to complete this movement across the northbound carriageway. The traffic signals at the roundabout will all include SVD sensors to ensure priority for bus services and other vehicles fitted with SVD devices. The eastbound exit will be widened using developer funding to provide a continuous bus lane to Filton Lane (Dwg. CO7-002).

COLDHARBOUR LANE BUS LANES

- 2B.8.8 On Coldharbour Lane an additional southbound general purpose lane will be added from the A4174 to the UWE roundabout and for safety reasons a central median will be added. Coldharbour Lane will, therefore, become a dual carriageway with two lanes each way. The northbound bus/2+ lane will be converted to a bus lane. Bus stops will be relocated including a new bus lay-by behind the bus/2+ lane. The existing toucan crossing will be replaced with a staggered toucan crossing in a similar location (Dwg. CO7-004).

ROMNEY AVENUE BUS LINK AND HEWLETT PACKARD DEVELOPMENT

- 2B.8.9 Romney Avenue Bus Link is a proposed bus-only route between Lockleaze (in Bristol) and the University of the West of England. The link allows buses to bypass traffic congestion on Filton Avenue and the Ring Road. The link will also include a bus gate between Hewlett Packard and the MoD, Hewlett Packard and UWE are effectively diverting off the Ring Road into a series of cul-de-sacs; the Romney Avenue Bus Link allows these destinations to be served as part of a more linear route. This bus link has the support of local bus companies and would be used by them as part of a formal bus service agreement.
- 2B.8.10 It is anticipated that the whole cost of the Romney Avenue Bus Link and MoD-HP Bus Gate will be funded by developers at no cost to the Council.

COLDHARBOUR LANE TO M32 JUNCTION 1

- 2B.8.11 A new lane is proposed in each direction designated as a bus/2+ lane. The provision of these lanes is considered to be essential to ensure the long term viability and competitiveness of new bus services proposed as part of the Council's bus strategy.
- 2B.8.12 A footway will be provided from Coldharbour Lane to Maules Lane on the eastbound carriageway. The lay-by on this side of the road to the west of M32 Junction 1 will be removed as a result of the widening. The lay-by on the opposite (westbound) carriageway will also be removed, as its continuing use would conflict with the operation of the 2+ lane.

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- 2B.8.13 The widening to enable the bus/2+ lanes will be accomplished entirely on the northern side of the road which will require land. The existing embankment will be widened to carry the new road construction and in addition an environmental bund will be constructed along the length. At the M32 (east) end additional land will be required for the construction of drainage facilities including a sediment fore bay and a wetland. These will treat and control run off from the existing and new sections of road. New street lighting will be provided along the route (Dwg. CO7-005).

M32 JUNCTION 1

- 2B.8.14 At M32 Junction 1 the south, west and east sides of the circulatory carriageway will be widened by one lane as part of this year's Avon Ring Road (ARR) Major Scheme Bid.
- 2B.8.15 The remaining north side of the circulatory carriageway will be widened by one lane and the M32 exit slip roads will be widened to provide an additional lane at the stop line. The A4174 eastbound entry will be widened to four lanes. The A4174 westbound entry will be widened to three lanes straight ahead/right, and two lanes left on to the M32 southbound. The A4174 westbound exit from the junction will be widened to three lanes, the eastbound exit having been widened last year as part of the ARR Major Scheme Bid.
- 2B.8.16 The through pedestrian and cycle route across the south side of the junction will have positive signal control at each crossing point, and a shared use width of 3m will be provided throughout (Dwg. CO7-006).

HAMBROOK CROSSROADS

- 2B.8.17 The traffic signals at Hambrook Crossroads will be fitted with SVD to provide further benefit to existing bus services, and to any additional services that may operate from the Nibley MMI (south of Yate) via Bristol Road.
- 2B.8.18 In the westbound direction the left turn lane will be extended. The right turn lane may be extended as part of a planned developer funded North Fringe major scheme. The bus/2+ lane will be continued through the junction (Dwg. CO7-007).

BROMLEY HEATH ROUNDABOUT

- 2B.8.19 The signal equipment will include SVD detectors to ensure priority for existing bus services and for the proposed multi-modal interchanges (MMIs) at Nibley (Yate), Emersons Green and Longwell Green.

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BROMLEY HEATH ROUNDABOUT TO WICK WICK ROUNDABOUT

- 2B.8.20 During the current financial year the existing westbound bus/2+ lane will be extended eastwards by the conversion of lane 1 to the closest practical point to Wick Wick roundabout. This scheme will be funded from last year's successful supplementary bid.
- 2B.8.21 An eastbound bus/2+ lane will be provided from future developer funding by conversion of the eastbound lane 1. This lane will commence 300 metres east of Bromley Heath roundabout and end 350 metres west of Wick Wick roundabout.

WICK WICK ROUNDABOUT TO WESTERLEIGH ROAD ROUNDABOUT

- 2B.8.22 A bus/2+ lane will be provided from future developer funding by conversion of the westbound lane 1. The bus/2+ lane will commence approx 250m west of Westerleigh Road roundabout.
- 2B.8.23 A bus/2+ lane will be provided from developer funding by conversion of the eastbound lane 1. The bus/2+ lane will commence approx 500 metres east of Wick Wick roundabout and continue into Westerleigh Business Park.

BUS STOPS

- 2B.8.24 The bus stops in the corridor, would be improved as follows:
- ◆ Level 1 = 4
 - ◆ Level 2 = 0
 - ◆ Level 3 = 2
- 2B.8.25 For an explanation of levels 1, 2 and 3, see Appendix 2D.

CORRIDOR 7 - SUMMARY OF PROVISIONS

- 2B.8.26 Improvements for **buses** will include:
- ◆ Selective Vehicle Detection (SVD) priority for buses at all traffic signal controlled junctions;
 - ◆ A bus gate giving priority to buses leaving the lay-by on the eastbound approach to the Abbey Wood roundabout;
 - ◆ A continuous eastbound bus lane between Abbey Wood roundabout and Filton Lane;
 - ◆ Romney Avenue Bus Link;
 - ◆ MoD-Hewlett Packard Bus Gate;
 - ◆ Existing Harry Stoke bus link retained;
 - ◆ New bus stops and southbound bus lane on Coldharbour Lane; and



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- ◆ New bus/2+ lanes in both directions on the west of the M32, and extension of existing bus lanes to the east of the M32.

2B.8.27 Car sharers and general traffic will benefit from:

- ◆ For car sharers, the new bus/2+ lanes in both directions on the west of the M32, and extension of existing westbound bus/2+ lanes and new eastbound bus/2+ lanes to the east of the M32, will provide many advantages;
- ◆ Additional capacity for right turning traffic into Abbey Wood;
- ◆ Additional capacity on Bristol Road, Hambrook approaching the A4174;
- ◆ Additional capacity at M32 junction 1 to reduce queuing on the motorway and A4174 approaches; and
- ◆ Improved safety gained by greater control of traffic during the inter-peak periods.

2B.8.28 Cyclists and pedestrians will benefit from:

- ◆ Measures along the line of the A4174 to strengthen and complete the cycle route along the full length of route;
- ◆ Three toucan crossings in vicinity of the re-modelled Abbey Wood junction; and
- ◆ New developer funded cycle lane southbound on Bristol Road as far as A4174 with improved facilities within the junction.

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2B.9. Corridor Eight – A370

2B.9.1 This corridor links Bristol and Weston-super-Mare and also serves a number of intermediate villages and connections to Nailsea and Clevedon. Peak period journey times are nearly twice as long as those in the off-peak due to significant congestion at a number of locations along the route. Within Bristol it also serves the new Harbourside development and will take advantage of existing priority measures along Hotwells road.

2B.9.2 The corridor already benefits from recently installed bus priority measures such as the Long Ashton Bypass HOV lane and MOVA/SVD at key junctions; the additional MSB features of the corridor are illustrated in Dwg.C08-001 and are illustrated further in Figure 2B.8. Annex A of the Programme Handbook (Appendix 4A) includes copies of the detailed plans.

2B.9.3 The following bus priority measures are proposed:

B3440 LOCKING ROAD, WESTON-SUPER-MARE

2B.9.4 The Locking Moor Road signal junctions will have their controllers upgraded with MOVA and SVD (Dwg.C08-002).

A370, WESTBOUND APPROACH TO M5 JUNCTION 21

2B.9.5 A 350m westbound 24-hour bus lane approaching the motorway (Dwg.C08-005).

A370 CONGRESBURY

2B.9.6 A 250m 24-hour westbound bus lane on approach to the B3133 (Dwg.C08-006).

PLIMSOLL BRIDGE, CUMBERLAND BASIN

2B.9.7 Electrical improvements to the signals on Plimsoll Bridge (Dwg.C08-009).

BUS STOPS

2B.9.8 There are 210 bus stops in the corridor, which would be improved according to the specification for 'rural' stops described in Appendix 2D.

- ◆ Level 1 = 78
- ◆ Level 2 = 105
- ◆ Level 3 = 27

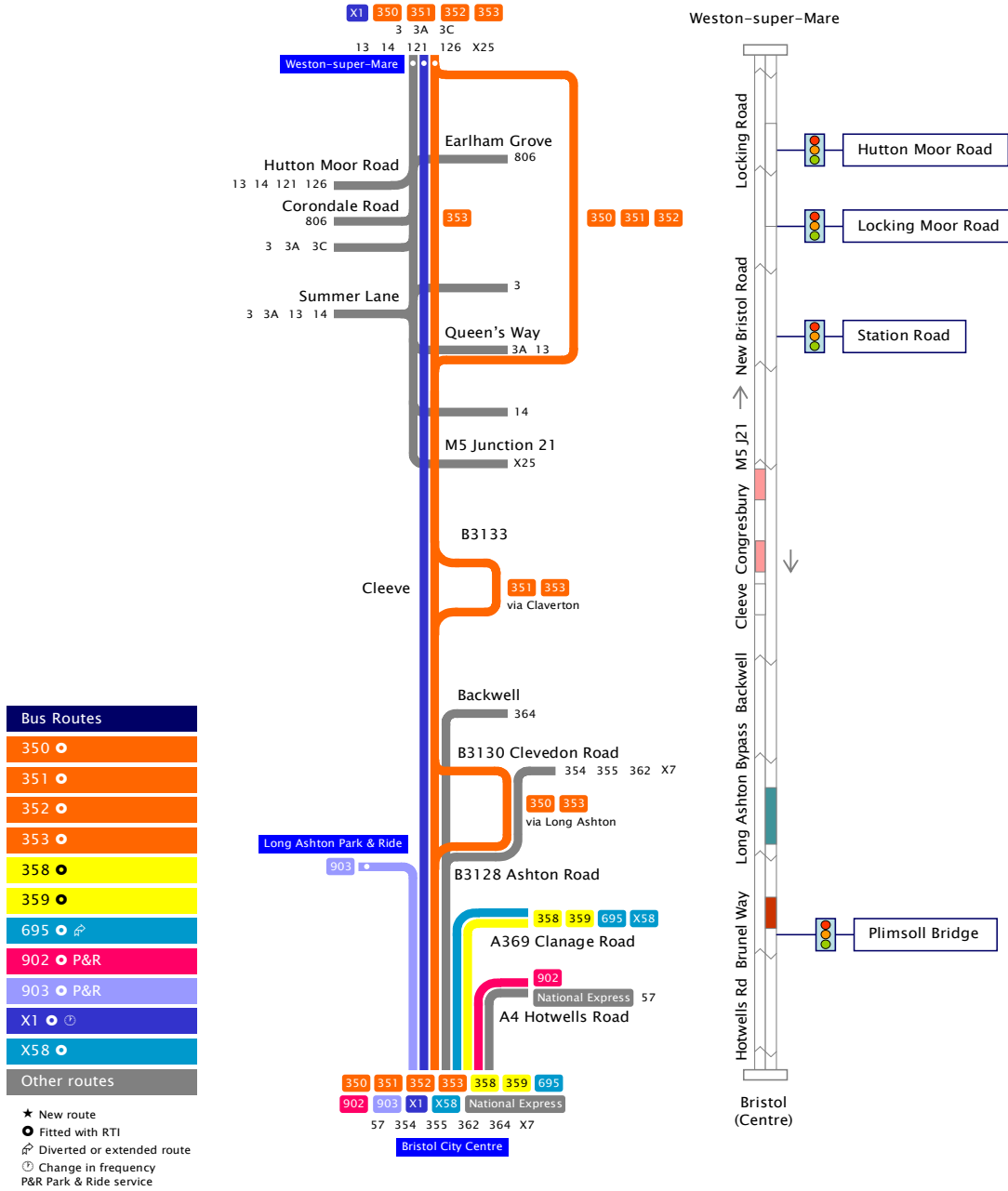
Figure 2B.8- Corridor Eight: A370

Greater Bristol Bus Network Major Scheme Bid

A370 Weston-super-Mare to Bristol City Centre

Suggested Routes

Corridor **8**





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2B.9.9 In addition, an interactive public transport information point is proposed for Weston town centre.

CORRIDOR 8 - SUMMARY OF PROVISIONS

2B.9.10 Improvements for **buses** will include:

- ◆ Substantially reduced peak period journey times;
- ◆ Westbound bus lane approaching M5 J21; and
- ◆ Westbound bus lane at Congresbury.

2B.9.11 Improvements for **pedestrians, cyclists** and other road users will include:

- ◆ Junction improvements to assist the flow of traffic and enable safer pedestrian crossing movements.

ATKINS

2B.10. Corridor Nine – A369

2B.10.1 This corridor links Portishead with Bristol. Increasing congestion along the route, particularly around Junction 19 of the M5, and the development of over 3000 houses and employment in Portishead creates a requirement for faster and more reliable journeys. This route connects with the A370 in Cumberland Basin and also serves Harbourside and Hotwells Road.

2B.10.2 The key features of the corridor are illustrated in Figure 2B.9. Annex A of the Programme Handbook (Appendix 4A) includes copies of the detailed plans.

2B.10.3 The following bus priority measures are proposed:

A369 MARTCOMBE ROAD

2B.10.4 An 800m eastbound 24-hour HOV lane terminated by a new MOVA signal junction at Portbury High Street and passing through a new MOVA/SVD signal junction at St. George's Hill (Dwg.C09-005, CO9-006);

A369 ABBOTS LEIGH ROAD / BEGGAR BUSH LANE

2B.10.5 A 750m eastbound 24-hour HOV lane terminating at the B3129 Beggar Bush Lane signal junction, which will be upgraded with MOVA/SVD (Dwg. C09-009).

A369 ABBOTS LEIGH ROAD / BRIDGE ROAD

2B.10.6 Signal upgrade to MOVA/SVD at the B3129 Bridge Road junction (Dwg.C09-011).

BUS STOPS

2B.10.7 There are 126 bus stops in the corridor, which would be improved according to the specification for 'rural' stops described in Appendix 2D.

- ◆ Level 1 = 65
- ◆ Level 2 = 40
- ◆ Level 3 = 21

2B.10.8 In addition, an interactive public transport information point is proposed for Portishead town centre.

2B.10.9 Improvements for **buses** will include:

- ◆ Substantially reduced peak period journey times;
- ◆ Westbound HOV on A369 Martcombe Road with MOVA/SVD at two junctions; and

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- ◆ Eastbound HOV lanes on A369 at Abbots Leigh Road with MOVA/SVD at two junctions.

2B.10.10 Improvements for **pedestrians, cyclists** and other road users will include:

- ◆ A number of junction improvements which will assist the flow of traffic and provide for safer pedestrian crossing movements.

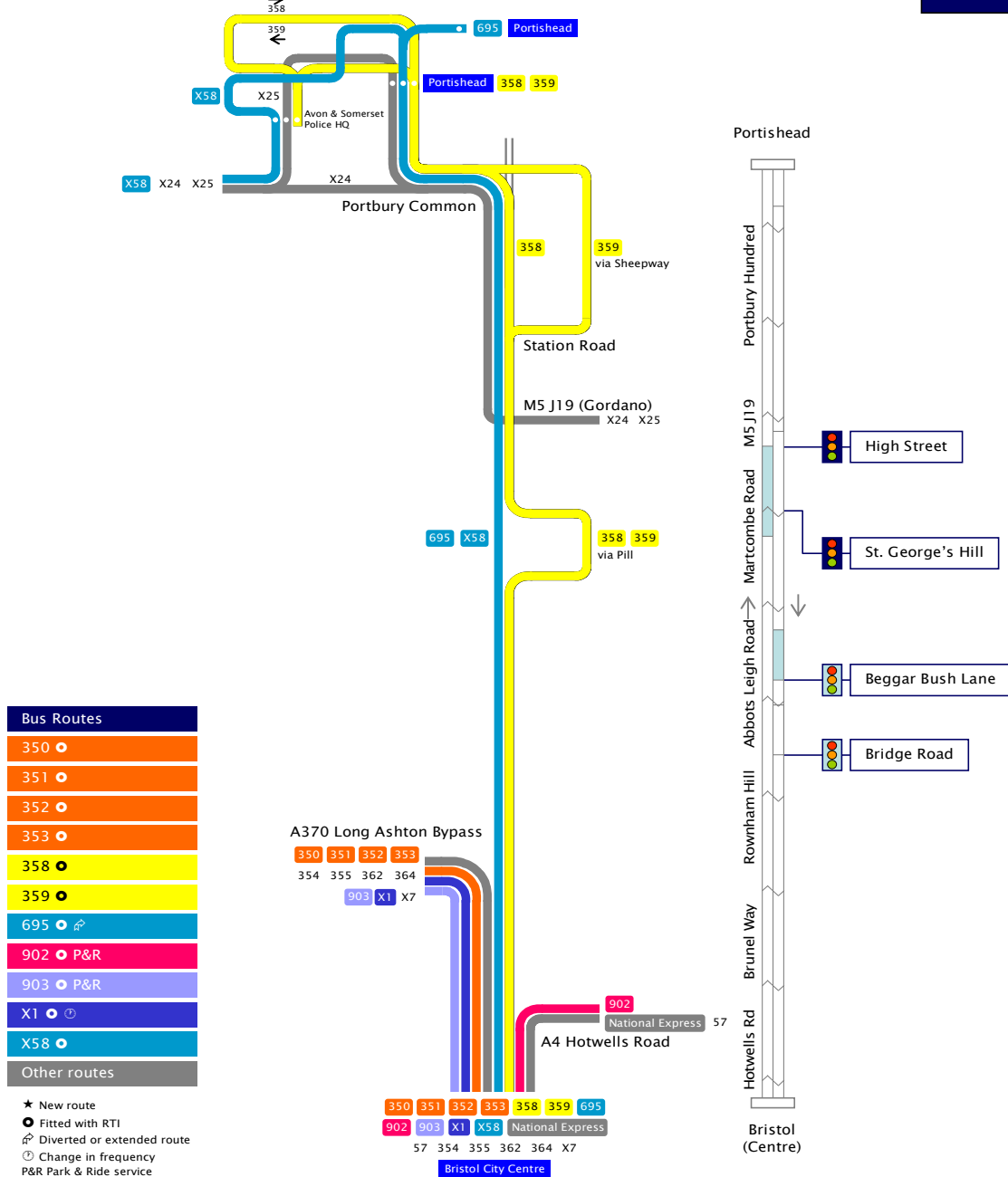
Figure 2B.9 - Corridor Nine: A369

Greater Bristol Bus Network Major Scheme Bid

A369 Portishead to Bristol City Centre

Suggested Routes

Corridor 9



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2B.11. Corridor Ten – A367

2B.11.1 This corridor links Bath, Peasedown St. John and Norton Radstock. Congestion is a problem at both ends of the route and the hilly terrain adds to journey times. A Park & Ride serves Bath at Odd Down.

2B.11.2 The key features of the corridor are illustrated in Figure 2B.10 and described in more detail below. Annex A of the Programme Handbook (Appendix 4A) includes copies of the detailed plans.

2B.11.3 The following bus priority measures are proposed:

ODD DOWN PARK & RIDE

2B.11.4 The existing carriageway will be widened. The additional width will be used to provide a northbound bus lane between Fuller Earthworks and 100m north of the Odd Down Park & Ride roundabout. This will enable buses to avoid the queue of traffic approaching the roundabout during the morning peak. A new signalised junction for the Park & Ride will be provided at the southern end of the site. This will enable northbound vehicles entering the Park & Ride to avoid the queue of traffic approaching the roundabout.

2B.11.5 The signalisation of the Park & Ride roundabout was considered, however this option would not improve morning peak traffic queues. Extending the length of the bus lane further south along the A367 was considered, however this was discounted as the benefit did not justify the cost (Dwg. CG9140-102).

MIDFORD ROAD TO RED LION

2B.11.6 In the southbound direction one of the two traffic lanes will be designated as a bus lane. This will enable buses to avoid the queue of traffic approaching the roundabout during the evening peak (Dwg. C10-004).

WELLSWAY (LOWER)

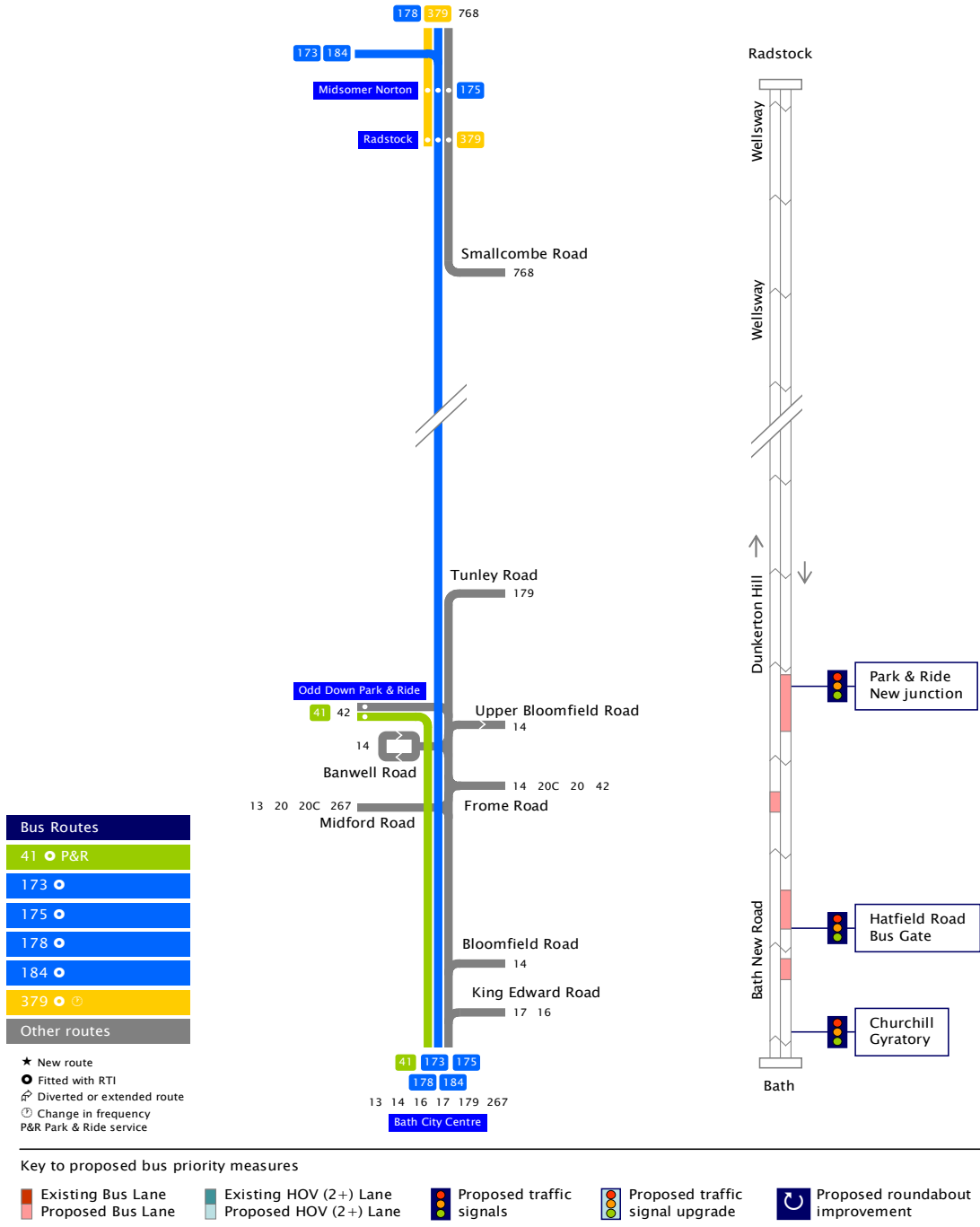
2B.11.7 In the northbound direction one of the two traffic lanes will be designated as a bus lane. Signals will be installed at the end of the bus lane. Bus detection will stop cars as buses approach the signals allowing buses to join the traffic lane.

Figure 2B.10 - Corridor Ten: A367

Greater Bristol Bus Network Major Scheme Bid

A367 Radstock to Bath City Centre

Suggested Routes
Corridor 10



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- 2B.11.8 Omitting the signals and allowing bus to merge with traffic was not selected on safety grounds. Extending the length of the bus lane further south was discounted as the additional length provided no added benefit to buses (Dwg. C10-005).

WELLSWAY, BEAR FLAT

- 2B.11.9 In the northbound direction one of the two traffic lanes will be designated as a bus lane. This will enable buses to avoid the queue of traffic and access the bus stop (Dwg. C10-006).

CHURCHILL GYRATORY

- 2B.11.10 The signalisation of Churchill Gyratory will be provided from developer funding. The signals will include SVD sensor to ensure priority for bus services and other vehicles fitted with SVD devices.

BUS STOPS

- 2B.11.11 There are 71 bus stops in the corridor, which would be improved as follows:
- ◆ Level 1 = 29
 - ◆ Level 2 = 18
 - ◆ Level 3 = 24
- 2B.11.12 For an explanation of what Levels 1, 2 and 3 refer to, see Appendix 2D.
- 2B.11.13 In addition, an interactive public transport information point is proposed for Radstock and Midsomer Norton Town Centre.

CORRIDOR 10 - SUMMARY OF PROVISIONS

- 2B.11.14 Improvements for **buses** will include:
- ◆ Northbound bus lane to Odd Down Park & Ride;
 - ◆ Conversion of existing carriageway to bus lane at Midford Road;
 - ◆ Conversion of existing carriageway on Wellsway to bus lanes; and
 - ◆ Priority for buses at Churchill gyratory.
- 2B.11.15 Improvements for **pedestrians, cyclists** and other road users will include:
- ◆ A number of junction improvements that will assist the flow of traffic and enable safer pedestrian crossing movements.

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2B.12. Summary

- 2B.12.1 The schemes described above will improve journey times for bus users along the ten corridors in the Greater Bristol area. This will enable bus operators to provide improved bus services that are more efficient, punctual and appealing within Bristol and the surrounding area.