

OPTIONS APPRAISAL			
1. General Information			
Directorate	Inclusive Growth	Portfolio/Committee	Transport and Environment Finance and Resources
Project Title	Perry Barr Infrastructure-Options Appraisal	Project Code	CA-03030-03 CA-03028-06
Project Description	<p><u>Introduction</u></p> <p>Perry Barr/Birchfield is a focus for significant growth and is identified as a District Centre growth point in the Area Action Plan (AAP) for Aston, Newtown and Lozells and within the Birmingham Development Plan (2017). The area has the potential to accommodate a significant level of commercial growth and some 5000 new homes, the first phase of which will see around 1,400 homes delivered in the Athletes' Village for the 2022 Commonwealth Games.</p> <p>The Athletes Village will accommodate around 6,500 athletes and officials and was central to Birmingham's bid to host the Commonwealth Games. After the Games, the dwellings will be retro-fitted to provide residential units that will be suitable for sale on the open market, or rent either as affordable housing or to the private rented sector.</p> <p>To deliver the Games successfully, West Midlands Combined Authority (WMCA) is required to accelerate part of its £8bn 2026 Delivery Plan for Transport. This includes the upgrade of local railway station, improved bus interchange and bringing forward a new bus rapid transit service (SPRINT) to encourage more active and green travel. These works will improve transport connectivity for Perry Barr and Games-times movement.</p> <p>Significant highway works are necessary at the junction of the A34/A453 and at the A34/A4040 junctions to enable the land for the residential element of the Athletes' Village to be assembled and is crucial to the growth and transformation of Perry Barr District Centre.</p> <p>To support the proposed growth in Perry Barr significant investment to improve transport infrastructure is required. On the 26<sup>th</sup> June 2018 Cabinet approved the Commonwealth Games Village and the Wider Perry Barr Regeneration Programme- Outline Business Case which set out the proposed transportation infrastructure measures. The scheme objectives are to enable access to key development sites by:</p> <ul style="list-style-type: none"> <li>• Managing the movement of cyclists, buses including Sprint and general traffic both to and through the area;</li> <li>• Improve journey time reliability for public transport;</li> <li>• Provide safer infrastructure for all road users;</li> <li>• Provide high quality &amp; continuous facilities for cyclists;</li> <li>• Enhance connectivity for pedestrians and cyclists between: <ul style="list-style-type: none"> <li>➢ One Stop shopping centre;</li> <li>➢ Railway station;</li> <li>➢ Bus Interchange;</li> <li>➢ The traditional retail core at Birchfield Roundabout to the south; and</li> <li>➢ The proposed Commonwealth Games Village and future housing development.</li> </ul> </li> </ul> <p>The cost estimate for the highway infrastructure measures is between £26.4m and £30.2m (depending on the preferred option selected), which includes the reconfiguration of the A34/A453 junction and the replacement of Birchfield roundabout with a traffic signal junction.</p> <p>Planning consent was granted 20<sup>th</sup> December 2018 for the Village and legacy</p>		

housing development, the consent included the closure of a 200m section of Aldridge Road (A453) for general traffic. The road would be subject to public realm improvements and retained as a route for cyclists, pedestrians and buses. As a result of the closure of Aldridge Road the A34/A453 junction has to be reconfigured as a minimum.

This Options Appraisal considers the options to retain or remove the A34 flyover at Perry Barr and the A34 Birchfield underpass and seeks approval to proceed with the preferred option. The options considered, which go beyond the consented planning scheme are outlined below:

- Option 1: Removal of A34 flyover and the A34 underpass and replacement of the A34/A4040 roundabout with a four arm traffic signal junction.
- Option 2: Removal of A34 flyover, retention of A34 underpass and replacement of the A34/A4040 roundabout with a four arm traffic signal junction.
- Option 3: Retention of A34 flyover and A34 underpass and replacement of the A34/A4040 roundabout with a four arm traffic signal junction.

The options are shown on the drawings in Appendix B to the Executive Report. The evaluation of the three options is given in Section 2 'Options Appraisal Records' below.

Walking and Cycling – all three options provide for footways on both sides of the road and a signalised pedestrian / cycle crossing on the A34 just to the north of the bus interchange. A new pedestrian crossing is provided across Aldridge Road at the junction with A34. The existing pedestrian subway under the A34 is expected to be retained and refurbished as part of the wider infrastructure improvements. The removal of the convoluted pedestrian subway/footbridge arrangement at the A34/A4040 junction and introduction of at grade crossings incorporated into the proposed traffic signals thereby reducing the perception of crime / anti-social behaviour. A new two way cycle track is proposed on the eastern side of the A34 to connect to the Birmingham Cycle Revolution route that is now substantially complete from the City Centre to Heathfield Road. Cyclists will use the new crossing on the A34 to connect to the cycle provision that is proposed on the eastern side of the A34 from One Stop northbound. The 'closed to through traffic' section of Aldridge Road is to be retained as highway for pedestrian, cycle and bus use only and be integrated into the village development either side through public realm improvements offering opportunity for buses to service the village.

Bus Lanes and Bus Journey Times;

- Options 1 and 2 include provision of a bus lane in each direction for SPRINT and general buses for the majority of the scheme. Option 3 provides a bus lane in the southbound direction and a short section of bus lane in the northbound direction. The bus lanes aim to compliment the A34 SPRINT proposals being developed by Transport for West Midlands. For the purposes of developing the Options a bus lane on the A34 Southbound approach to the A453 of approximately 100m has been included, no further provision for SPRINT on the A34 to the north of Perry Barr Centre has been factored in at this stage, while TfWM refine proposals following their recent consultation process.
- A separate analysis of SPRINT bus journey times along the A34 within the limits of the proposal has been undertaken. In the AM peak (travelling into city) Option 2 improves the SPRINT bus journey time by approximately 2min, Option 3 improves the SPRINT bus journey time by approximately 3min when compared to the existing layout and to the bus services that do not use the flyover.
- In the PM peak (travelling out of city) the traffic modelling indicates there is no significant difference between Options 2 and 3 on bus journey times.
- Transport for West Midlands have provided the following journey time

data for the A34 SPRINT, this will be reviewed further at detailed design stage:

- The SPRINT scheme between Walsall and Birmingham aims to provide a reliable journey time of less than 38 minutes which is 5 minutes quicker than the current timetabled bus journey time. The SPRINT scheme also aims to provide a reliable journey time of less than 15 minutes between Perry Barr and Birmingham during peak times, which is 3 minutes quicker than the current timetabled bus journey time. Real journey time information shows that current bus trips frequently take longer than the timetabled information and there is significant fluctuation in journey times.
- The journey time for general traffic from Walsall to Birmingham in the AM peak takes approximately 9 minutes longer than the proposed SPRINT bus. The journey time from Perry Barr to Birmingham in the AM peak for general traffic is 18 minutes which is 3 minutes longer than the proposed SPRINT bus.
- In the PM peak the journey time for general traffic from Birmingham to Walsall takes approximately 8 minutes longer than the proposed SPRINT bus. The journey time from Birmingham to Perry Barr in the PM peak is similar for both general traffic and the proposed SPRINT bus.

At the detailed design stage of the traffic signals, advanced vehicle detection for Sprint and general buses will be incorporated.

### Traffic Modelling Approach

The three options have been assessed using a variety of traffic modelling software. The first assessment was to model the three options using LinSig. This software models traffic signal junctions to evaluate their effect on traffic capacity and queues. The LinSig outputs for Option 1 show:

- AM Peak - the A34 southbound and A453 Aldridge Road approaches to the A34/A453 junction are over capacity with queue lengths over 1.5km. At the Perry Barr junction, the A34 southbound and A4040 westbound approaches are also over capacity.
- PM Peak - the A34 / A453 junction, the A453 Aldridge Road approach, the A34 southbound right turn into the shopping centre and the shopping centre exit onto the A34 over capacity. The queues on the shopping centre exit are over 1km in length. At the Perry Barr junction, all arms are over capacity with queues on the two A4040 arms of over 300m, on the A34 southbound approach of over 800m and on the A34 northbound approach of over 2.5km.
- Saturday Peak - the A34/A453 junction, the A34 southbound approach, the A34 northbound approach and the shopping centre exit onto the A34 are over capacity. The A34 southbound approach queue is over 1.5km, whilst the queue out of the shopping centre is over 750m. At the Perry Barr junction, the two A34 approaches are over capacity with queues on the southbound approach of over 300m and on the northbound approach of over 1.2km.

This level of delay was considered unacceptable and as a result no further development of this option was carried out.

The second level of assessment used VISSIM which is a form of microsimulation traffic modelling software that simulates the behaviour of each individual vehicle over a local highway network. This provides a visual representation of the traffic flow, highlighting the points on the network where scheme layouts can be further refined to improve operation. VISSIM also provides data for queue lengths and journey times.

A local VISSIM model was developed and validated against observed traffic flows. This became the 'base' model against which Options 2 and 3 could be compared. VISSIM models were also developed for Options 2 and 3 to assist

in refining the layouts and to calculate queue lengths and journey times.

The VISSIM model is local in nature, so a strategic model is required to assess any potential impacts of the scheme on the wider area. Transport for West Midlands (TfWM) operates a strategic model of the West Midlands Conurbation known as PRISM. The A34 Perry Barr scheme was set up within the model to assess any wider impacts on the highway network. The outputs from the PRISM modelling show a 4% and 3% re-assignment of traffic to other routes in the AM and PM peaks respectively.

An assumption for modal shift from cars to SPRINT buses and cycling of 2% has been factored into the proposed traffic flows. This is consistent with the Transport for West Midlands forecast that 8% of SPRINT patronage will come from existing car users.

The VISSIM flows were therefore reduced by the above factors to take account of the re-assignment and modal shift and final VISSIM model runs were carried out to determine final traffic data (traffic flow, queues, and journey times).

### Traffic Modelling Conclusions

A Model Optioneering Report has been produced by consultants setting out the traffic modelling undertaken for the 3 options. The full report is available as a background document.

The conclusions from the report are given below;

- The initial LinSig analysis showed that Option 1 (flyover and underpass removal) performed the worst of the options analysed and therefore, it was not tested in further detail in VISSIM.
- The results show overall a slight preference for Option 3 in the AM peak. The queues for Option 2 on the A34 North and A453 approaches result in delays for the high volume of southbound traffic. However both options generally perform in a similar manner. The A34 North to A34 South journey time is predicted to be 43 seconds lower in Option 3 compared to Option 2.
- The results indicate that the PM Peak is the critical peak. Option 2 has fairly high northbound queues on the A34 right turn into Aldridge Road but Option 3 has much higher queues of around 2.4km on the A34 northbound approach to the new signalised roundabout, slowing journey times for traffic from the A34 South significantly. The A34 South to A34 North and A453 journey times are predicted to be between 3 and 4 minutes lower with the Option 2 layout. These results clearly indicate that Option 2 is the preferred layout in the PM peak.
- A Saturday Peak traffic model has been developed to primarily assess the impact of the options on the One Stop Shopping Centre. The results for Option 2 show improved journey times for traffic travelling from the A34 and A453 to One Stop compared to the existing situation. The journey times to One Stop for Option 3 from the A34 are quicker than existing however from the A453 the journey times are longer. The journey times from the A4040 to One Stop for both options are approximately 1min longer than the existing journey time. Option 2 performs better than Option 3 for traffic travelling to One Stop. The journey times for traffic leaving One Stop are longer than the current layout for both Options 2 and 3.

Traffic queue lengths and journey times for the AM, PM and Saturday peaks is further detailed in the Traffic Modelling Data attached as Appendix E to the Executive Report.

Based on the PM Peak and Saturday Peak results, Option 2 is the preferred layout, whilst the AM Peak is fairly neutral between the two options.

### Capital Funding

The capital cost of Option 2 is estimated at £27.1m. This is funded from

	<p>Government Infrastructure Grant of £24.7m, Prudential Borrowing (to be repaid using receipts from sale of dwellings) of £1.13m and Local Growth Fund (LGF) of £1.27m, includes £1.1m LGF from Birmingham Cycle Revolution for cycle measures.</p> <p><u>Revenue Consequences</u></p> <p>This project will both remove and create assets that will form part of the highway upon completion of the project; as such they will be maintained within the overall highway maintenance programme. The estimated net cost / saving of any removal and newly created assets within the highway maintenance process will be established once the design for the preferred option has been further developed and reported in the Full Business Case report along with the funding source. The detail design will be developed with a view to minimising the future maintenance liability on the City Council.</p> <p><u>Social Value</u></p> <p>Compliance with the BBC4SR is a mandatory requirement that will form part of the conditions of this contract. The contractors undertaking this project work under the Commonwealth Games Village contract or using the Council's Highways and Infrastructure Framework Agreement are certified signatories to the BBC4SR and will provide additional actions proportionate to the value of each contract awarded. These additional actions will be identified by the project team and will include employment opportunities and will be monitored and managed during the contract period.</p> <p><u>PFI Contract Alignment</u></p> <p>Liaison will take place with the Council's Highway Maintenance and Management contractor (Amey) to avoid conflicts in programming of the work and to seek opportunities of joint working where this is possible. As major changes to the highway infrastructure are planned as part of this scheme, opportunities regarding resurfacing of the highway in this area, replacement of street lighting and footway works can be combined.</p> <p><u>Consultation</u></p> <p>The consultation implications are detailed in section 5 of the Executive Report.</p> <p><u>Air Quality</u></p> <p>To assess the impact of the final option following full public consultation on air quality, the City Council will adopt the approach set out in the Design Manual for Roads and Bridges (DMRB) Advice Note HA 207/07 Air Quality.</p>
<b>Links to Corporate and Service Outcomes</b>	<p>The proposals set out in this report will support the delivery of the Council Plan and Budget 2018+. They will support the delivery of the ambition set out in the adopted Birmingham Development Plan (BDP), as well as the Aston Newtown Lozells Area Action Plan (AAP), Birmingham Connected, and the City's role as Host City for the 2022 Commonwealth Games.</p> <p>The transport infrastructure proposals support development activity that will help to create jobs and support supply chain industries, supporting the local economy.</p>
<b>Project Benefits</b>	<p>The removal of the Perry Barr flyover is a key element of proposed strategic highway improvements as well as the placemaking in Perry Barr, and is crucial to the growth and transformation of Perry Barr District Centre. The flyover is a physical and visual barrier that contributes to the traffic and highways infrastructure dominating and bisecting the Centre. Its removal will deliver a much more attractive, legible and connected urban centre, whilst promoting sustainable forms of transport. It will create a better quality environment and access for sites fronting the highway, including residential and commercial development delivered here, and will improve development value thereby improving viability.</p>
<b>Project Deliverables</b>	<p><u>Project deliverables for Option 2:</u></p> <p>A. <u>Improvements to Birchfield Roundabout/Aston Lane/Wellington Road</u></p>



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	<ul style="list-style-type: none"> <li>Replacement of the existing roundabout with a traffic signal crossroads junction. This will include the construction of a new deck over the A34 Underpass. ;</li> <li>Introducing traffic signals on four arms of the junction to replace the current roundabout junction arrangement;</li> <li>Providing toucan crossing facilities within the signalised junction on all arms.</li> <li>The removal of the convoluted pedestrian subway / footbridge arrangement at the A34 / A4040 junction and introduction of at grade crossings incorporated into the proposed traffic signals thereby reducing the perception of crime / anti-social behaviour.</li> <li>Unnecessary guard railing would be removed;</li> <li>Provide for wider footways to provide opportunity for public realm.</li> <li>Cycle track provision on the A34 eastern footway.</li> </ul> <p>B. <u>Improvements to A34/A453 Perry Barr Gyratory</u></p> <ul style="list-style-type: none"> <li>Remove general traffic from the section of A453 fronting the former Birmingham City University site. This section of Aldridge Road to become a public realm area integrated into the residential development. Highway status retained for pedestrian, cycle and buses;</li> <li>Removal of the A34 Perry Barr flyover;</li> <li>New all movement traffic signal junction at the A34 / A453.</li> <li>Provision of bus lanes on both sides of the A34 and on the A453 approach to the A34.</li> <li>Provision of cycle track on the eastern side of the A34 and on the western side from One Stop northbound.</li> <li>New toucan crossing for cyclists and pedestrians on the A34 connecting the residential development to One Stop / Bus Interchange / Rail Station.</li> </ul> <p>C. <u>Birmingham Cycle Revolution (BCR) A34 Perry Barr</u></p> <ul style="list-style-type: none"> <li>Extend BCR route from Heathfield Road to Perry Barr Centre on the eastern side of the A34.</li> </ul> <p>D. <u>A34 SPRINT route through Perry Barr Centre</u></p> <ul style="list-style-type: none"> <li>Northbound and Southbound Bus Lanes for SPRINT and general buses;</li> </ul>	
<b>Procurement Implications</b>	The procurement implications are detailed in Section 7.4 of the Executive Report.	
<b>Taxation Implications</b>	There should be no adverse VAT implications for the City Council in this scheme as the maintenance of highways is a statutory function of the City Council such that any VAT paid to contractors is reclaimable.	
<b>Accountable Body</b>	N/A	
<b>Key Project Milestones</b>		<b>Planned Delivery Dates</b>
Options Appraisal for Highway Scheme to Cabinet		Feb 2019
Appoint Contractor for detail design		Spring 2019
Public Consultation on Preferred Option		Spring 2019
Detailed Design and firm up target cost		Summer/Autumn 2019
FBC Approval		Autumn 2019
Appoint Contractor for Construction		Autumn 2019
Construction Start		Early 2020
Construction End		Late 2021

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Post Implementation Review		Late 2022	
Dependencies on other projects or activities	<p>Elements of the highway alignment are subject to confirmation of the Compulsory Purchase Order (CPO) made under the Town and Country Planning Act 1990 the details of which were set out in the OBC to Cabinet dated 26<sup>th</sup> June 2018.</p> <p>The scheme will be subject to confirmation of Section 247 (stopping up) or Traffic Regulation Orders that will restrict traffic on the lower section of A453 Aldridge Road.</p>		
Achievability	<p>A Programme Board has been established to oversee the development and delivery of the projects set out in the Outline Business Case reported to Cabinet 26<sup>th</sup> June 2018.</p> <p>The project will be managed in accordance with the City Council's Standing Orders, Financial Regulations and Governance Arrangements as set out in the Council's Constitution. The Infrastructure Delivery Team within the Transportation &amp; Connectivity section of the Inclusive Growth Directorate will take the lead for Perry Barr highway infrastructure works.</p> <p>The Infrastructure Delivery Team has engaged Aecom to carry out feasibility study, traffic modelling, preliminary design and tender document preparation. Significant internal resource is already committed to the highway infrastructure works and additional resources will be secured through a Design and Build Contract to ensure the delivery of the works by December 2021.</p> <p>The delivery of the changes to the highway will result in some disruption to users. The project team will work Transport for West Midlands (TfWM) to endeavour to keep traffic disruption to a minimum through (i) a phased construction approach; (ii) co-ordination of the highway contract with adjoining contracts e.g. Village, Bus Interchange, Rail Station and SPRINT and (iii) the introduction of a Travel Demand Management strategy to promote travel time and mode shift. The contractor's temporary traffic management proposals for the highway works are subject to approval in accordance with the Council's Traffic Management Protocol process.</p> <p>The Infrastructure Delivery Team has successfully delivered to time and budget a number of major highway improvement projects including Ring Road 'Pinch Point' Improvements (£14m), Longbridge Connectivity (£8m) and Selly Oak New Road (Phase 1A and 2) (£58m).</p>		
Project Manager	<p>Jas Chahal</p> <p>Email: <a href="mailto:jaswant.s.chahal@birmingham.gov.uk">jaswant.s.chahal@birmingham.gov.uk</a></p> <p>Tel: 0121 303 7403</p>		
Project Accountant	<p>Guy Olivant</p> <p>Email: <a href="mailto:Guy.olivant@birmingham.gov.uk">Guy.olivant@birmingham.gov.uk</a></p> <p>Tel: 0121 303 4752</p>		
Project Sponsor	<p>Ian McLeod</p> <p>Email: <a href="mailto:ian.mcleod@birmingham.gov.uk">ian.mcleod@birmingham.gov.uk</a></p> <p>Tel: 0121 464 9831</p>		
Proposed Project Board Members	<p>A project board is established with representatives of partners responsible for monitoring and delivering the Perry Barr infrastructure works. This includes:</p> <ul style="list-style-type: none"><li>BCC (planning, housing, Birmingham Property Services, procurement, finance, transportation) including the Assistant Director, Transportation and Connectivity and the Assistant Director, Regeneration</li><li>Transport for West Midlands</li><li>Homes England</li><li>West Midlands Combined Authority</li></ul>		
Finance Business	Guy Olivant	Date of FBP Approval	18 <sup>th</sup> January 2019

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Partner (FBP)			
Other Mandatory Information			
• Has project budget been set up on Voyager?			Yes
• Issues and Risks updated (Please attach a copy to the PDD and on Voyager)			Yes



## 2. Options Appraisal Records

The following sections are evidence of the different options that have been considered in arriving at the proposed solution. All options should be documented individually.

Option 1	Removal of the A34 Perry Barr Flyover and the A34 Birchfield Underpass. Birchfield Roundabout would be capped and converted into a four arm at-grade signalised junction with integrated pedestrian crossing, cyclist and public transport facilities.	
Information Considered	Scheme layout plan. Traffic Modelling outputs. Development proposals. Other transport infrastructure proposals e.g. SPRINT, Bus Interchange, Rail Station and cycling. Access / egress to / from One Stop Shopping Centre.	
Pros and Cons of Option	<b><u>What were the advantages/positive aspects of this option compared to the existing layout?</u></b>	
	Journey Times and Traffic Queues	No advantages were identified. The level of delay was considered unacceptable and as a result no further development of this option including journey time analysis.
	Access to One Stop Shopping Centre	<ul style="list-style-type: none"><li>All turning movements in and out of One Stop provided at new signalised junction at northern access.</li></ul>
	Buses	<ul style="list-style-type: none"><li>Bus lanes provided on both sides of Walsall Road for regular and SPRINT services.</li><li>Bus lane provided on short section of Aldridge Road approach to Walsall Road.</li><li>The 'closed to through traffic' section of Aldridge Road would be available to buses heading southbound and a bus stop provided to serve the village.</li></ul>
	Cyclists and Pedestrians	<ul style="list-style-type: none"><li>Segregated two way cycle lane provided along Walsall Road from the Birmingham Cycle Revolution scheme that currently terminates at Heathfield Road.</li><li>Shared use cycle/footway provided on the western side of Walsall Road from One Stop.</li><li>Toucan crossing provided across A34 at One Stop.</li><li>The 'closed to through traffic' section of Aldridge Road would become public realm.</li><li>Toucan crossings provided for all 4 arms of the proposed traffic signal junction at Birchfield Island location.</li><li>Pedestrian subways and footbridge at Birchfield Island removed.</li></ul>
	Public Realm	<ul style="list-style-type: none"><li>The flyover is a physical and visual barrier that contributes to the traffic and highways infrastructure dominating and bisecting the Centre. Its removal will deliver a much more attractive, legible and connected urban centre, whilst promoting sustainable forms of transport. It will create a better quality environment and access for sites fronting the highway, including residential and commercial development delivered here, and will improve development value thereby improving viability.</li><li>The closure to through traffic of part of Aldridge Road will create a single site for the residential development scheme.</li><li>Changing Birchfield roundabout to a traffic signal</li></ul>

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		junction enables surface level crossings and improvements to the public realm by increasing footway widths.
	<b><u>What are the Disadvantages/negative aspects of this option compared to the existing layout?</u></b>	
	Journey Times and Traffic Queues	<p>The level of delay was considered unacceptable and as a result no journey time analysis was carried out. The high level queue summary is given below:</p> <ul style="list-style-type: none"> <li>• AM Peak - the A34 southbound and A453 Aldridge Road approaches to the A34 / A453 junction are over capacity with queue lengths over 1.5km. At the Perry Barr junction, the A34 southbound and A4040 westbound approaches are also over capacity.</li> <li>• PM Peak - the A34 / A453 junction, the A453 Aldridge Road approach, the A34 southbound right turn into the shopping centre and the shopping centre exit onto the A34 over capacity. The queues on the shopping centre exit are over 1km in length. At the Perry Barr junction, all arms are over capacity with queues on the two A4040 arms of over 300m, on the A34 southbound approach of over 800m and on the A34 northbound approach of over 2.5km.</li> <li>• Saturday Peak - the A34 / A453 junction, the A34 southbound approach, the A34 northbound approach and the shopping centre exit onto the A34 are over capacity. The A34 southbound approach queue is over 1.5km, whilst the queue out of the shopping centre is over 750m. At the Perry Barr junction, the two A34 approaches are over capacity with queues on the southbound approach of over 300m and on the northbound approach of over 1.2km</li> </ul>
	Access to One Stop Shopping Centre	<p><u>Southern Access</u></p> <ul style="list-style-type: none"> <li>• Right turn provision from One Stop to A34 southbound removed for cars and HGV's.</li> </ul>
	Buses	<ul style="list-style-type: none"> <li>• Buses that stop at the bus interchange that wish to head south towards Birmingham would have a slightly longer route as they would have to use Aldridge Road to make this manoeuvre (via the 'closed to through traffic' section of Aldridge Road.</li> </ul>
	Cyclists and Pedestrians	None identified
	Public Realm	The removal of Birchfield Underpass would result in greater delays to traffic compared to Options 2 and 3 with a consequential adverse impact on access to the village and local centre.
<b>People Consulted</b>	As detailed in section 5 of the Executive Report	
<b>Recommendation</b>	Abandon this Option.	
<b>Principal Reason for Decision</b>	The traffic queues indicated by the modelling outputs are significant and unacceptable.	

Option 2	Removal of the A34 Perry Barr Flyover and retention of A34 Birchfield Underpass. The Birchfield Roundabout would be capped and converted into a four arm at-grade signalised junction with integrated pedestrian crossing, cyclist and public transport facilities.	
Information Considered	Scheme layout plan. Traffic Modelling outputs. Development proposals. Other transport infrastructure proposals e.g. SPRINT, Bus Interchange, Rail Station and cycling. Access / egress to / from One Stop Shopping Centre.	
Pros and Cons of Option	<b><u>What were the advantages/positive aspects of this option compared to the existing layout?</u></b>	
	Journey Times and Traffic Queues	<p>Refer to Plans 1 to 4 in Appendix E to the Executive report. It should be noted that the queue lengths for the existing layout and Option 2 are not necessarily measured from the same point due to layouts being different.</p> <p>The queues lengths are shown on the Plans.</p> <p>The journey times provide a better reflection of the performance of the proposal and the key outcomes are given below:</p> <ul style="list-style-type: none"><li>• AM - A34 Southbound is 15 seconds quicker than existing;</li><li>• PM - A34 to A453 is 1minute and 4 seconds quicker than existing;</li><li>• Saturday – Compared to the existing the A34 northbound and southbound to One Stop is quicker by 1 minute 25 seconds and 2 minutes 55 seconds respectively, and the A453 to One Stop is quicker by 2 minutes 43 seconds.</li></ul>
	Access to One Stop Shopping Centre	<ul style="list-style-type: none"><li>• All turning movements in and out of One Stop provided at new signalised junction at northern access.</li></ul>
	Buses	<ul style="list-style-type: none"><li>• Bus lanes provided on both sides of Walsall Road for regular and SPRINT services.</li><li>• Bus lane provided on short section of Aldridge Road approach to Walsall Road.</li><li>• The ‘closed to through traffic’ section of Aldridge Road would be available to buses heading southbound and a bus stop provided to serve the village.</li><li>• Option 2 improves the SPRINT bus journey time by approximately 2mins when compared to the existing layout and to the bus services that do not use the flyover.</li></ul>
	Cyclists and Pedestrians	<ul style="list-style-type: none"><li>• Segregated two-way cycle lane provided on the eastern side of Walsall Road from the Birmingham Cycle Revolution scheme that currently terminates at Heathfield Road.</li><li>• Shared use cycle/footway provided on the western side of Walsall Road from One Stop northbound.</li><li>• Toucan crossing provided across A34 at One Stop.</li><li>• Introduction of a pedestrian controlled crossing on Aldridge Road at the junction with A34.</li><li>• The ‘closed to through traffic’ section of Aldridge</li></ul>

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		<p>Road would become public realm for pedestrian, cycle and bus use.</p> <ul style="list-style-type: none"> <li>Toucan crossing provided for all 4 arms of the proposed traffic signal junction at Birchfield Island location to replace the uninviting Pedestrian subway and footbridge at Birchfield Island is to be removed.</li> </ul>
	Public Realm	<ul style="list-style-type: none"> <li>The flyover is a physical and visual barrier that contributes to the traffic and highways infrastructure dominating and bisecting the Centre. Its removal will deliver a much more attractive, legible and connected urban centre, whilst promoting sustainable forms of transport. It will create a better quality environment and access for sites fronting the highway, including residential and commercial development delivered here, and will improve development value thereby improving viability.</li> <li>The closure to through traffic of part of Aldridge Road will create a single site for the residential development scheme.</li> <li>Changing Birchfield roundabout to a traffic signal junction enables surface level crossings and improvements to the public realm by increasing footway widths.</li> </ul>
	<p><b><u>What are the Disadvantages/negative aspects of this option compared to the existing layout?</u></b></p>	
	Journey Times and Queue Lengths	<p>Refer to Plans 1 to 4 in Appendix E to the Executive report. It should be noted that the queue lengths for the existing layout and Option 2 are not necessarily measured from the same point due to layouts being different.</p> <p>The queues lengths are shown on the Plans.</p> <p>The journey times provide a better reflection of the performance of the proposal and the key outcomes are given below:</p> <ul style="list-style-type: none"> <li>AM - A453 to A34 Southbound is 41 seconds slower than the existing journey time.</li> <li>PM - No significant disadvantages identified.</li> <li>Saturday - A34 Southbound through the signal junction is 1minute 38 seconds slower than existing. A34 Northbound to A453 is over 1minute slower than existing. Journey times from One Stop to all routes are up to 2 minutes 20 seconds slower than existing.</li> </ul>
	Access to One Stop Shopping Centre	<p><u>Southern Access</u></p> <ul style="list-style-type: none"> <li>Right turn provision from One Stop to A34 southbound removed for cars and HGV's.</li> </ul> <p><u>Northern Access</u></p> <ul style="list-style-type: none"> <li>The access has increased queuing, which is partly due to the introduction of the traffic signal junction and the restrictions at the southern access. See also 'Journey Times and Queue Lengths' above.</li> </ul>
	Buses	<ul style="list-style-type: none"> <li>Buses that stop at the bus interchange that wish to travel south towards Birmingham would have a slightly longer route as they would have to use Aldridge Road to make this manoeuvre (via the 'closed to through traffic' section of Aldridge Road).</li> </ul>

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	Cyclists and Pedestrians	None identified
	Public Realm	None identified.
<b>People Consulted</b>	As detailed in section 5 of the Executive Report	
<b>Recommendation</b>	Proceed.	
<b>Principal Reason for Decision</b>	<p>This Option provides on balance a better overall scheme taking into consideration the following;</p> <ul style="list-style-type: none"> <li>• The management of the movement of people to / from Perry Barr and along the A34 using sustainable modes of travel whilst recognising the A34 as a strategic route;</li> <li>• The delivery of transport infrastructure to support the development of new commercial and residential uses in the district centre which create a sense of arrival.</li> <li>• The provision of direct pedestrian crossing between the new village and the shopping centre, bus interchange and rail station.</li> <li>• The provision of bus lanes on both sides of the A34 between Birchfield Island and Aldridge Road and bus journey times through the junction.</li> <li>• Access to One Stop Shopping Centre through the creation of a focal point all movement traffic signal junction at A34/A453.</li> </ul> <p>In summary the removal of the Perry Barr flyover is a key element of proposed strategic highway improvements as well as the placemaking in Perry Barr, and is crucial to the growth and transformation of Perry Barr District Centre. The flyover is a physical and visual barrier that contributes to the traffic and highways infrastructure dominating and bisecting the Centre. Its removal will deliver a much more attractive, legible and connected urban centre, whilst promoting sustainable forms of transport. It will create a better quality environment and access for sites fronting the highway, including residential and commercial development delivered here, and will improve development value thereby improving viability.</p>	

<b>Option 3</b>	Retention of the A34 Perry Barr Flyover and Birchfield Underpass. Birchfield Roundabout would be capped and converted into a four arm at-grade signalised junction with integrated pedestrian crossing, cyclist and public transport facilities.								
<b>Information Considered</b>	Scheme layout plan. Traffic Modelling outputs. Development proposals. Other transport infrastructure proposals e.g. SPRINT, Bus Interchange, Rail Station and cycling. Access / egress to / from One Stop Shopping Centre.								
<b>Pros and Cons of Option</b>	<p><b><u>What were the advantages/positive aspects of this option compared to the existing layout?</u></b></p> <table border="1"> <tr> <td>Journey Times and Queue Lengths</td><td> <p>Refer to Plans 1 to 4 in Appendix E to the Executive report. It should be noted that the queue lengths for the existing layout and Option 3 are not necessarily measured from the same point due to layouts being different.</p> <p>The queues lengths are shown on the Plans.</p> <p>The journey times provide a better reflection of the performance of the proposal and the key outcomes are given below:</p> <ul style="list-style-type: none"> <li>• AM – A34 Southbound journey time through the junction is 58 seconds quicker than existing.</li> <li>• PM – The journey time from A4040 West to A4040 East is 1 minute 20 seconds quicker than existing.</li> <li>• Saturday – A34 Southbound to One Stop is 1minutes 33 seconds quicker than existing. The A34 Northbound to One Stop is 51 seconds quicker than existing.</li> </ul> </td></tr> <tr> <td>Access to One Stop Shopping Centre</td><td> <ul style="list-style-type: none"> <li>• Cars and HGV's using the southern access can use the proposed roundabout to travel south (currently traffic from the southern access uses Aldridge Road to make the 'U' Turn to head south).</li> <li>• Visitors to One Stop from A34 heading south will be able to use the roundabout under the flyover as opposed to the Birchfield Island to make a 'U' turn, thereby having a shorter journey time.</li> </ul> </td></tr> <tr> <td>Buses</td><td> <ul style="list-style-type: none"> <li>• Bus lanes provided on east side of Walsall Road (Southbound).</li> <li>• Short length of Bus Lane provided on west side of Walsall Road (Northbound)</li> <li>• Bus lane provided on short section of Aldridge Road approach to Walsall Road.</li> <li>• Option 3 improves the SPRINT bus journey time by approximately 3minutes when compared to the existing layout and to the bus services that do not use the flyover.</li> </ul> </td></tr> <tr> <td>Cyclists and Pedestrians</td><td> <ul style="list-style-type: none"> <li>• Segregated two-way cycle lane provided along Walsall Road from the Birmingham Cycle Revolution scheme that currently terminates at Heathfield Road.</li> <li>• Shared use cycle/footway provided on the western side of Walsall Road from One Stop</li> <li>• Toucan Crossing provided across A34 at One Stop.</li> <li>• The 'closed to through traffic' section of Aldridge</li> </ul> </td></tr> </table>	Journey Times and Queue Lengths	<p>Refer to Plans 1 to 4 in Appendix E to the Executive report. It should be noted that the queue lengths for the existing layout and Option 3 are not necessarily measured from the same point due to layouts being different.</p> <p>The queues lengths are shown on the Plans.</p> <p>The journey times provide a better reflection of the performance of the proposal and the key outcomes are given below:</p> <ul style="list-style-type: none"> <li>• AM – A34 Southbound journey time through the junction is 58 seconds quicker than existing.</li> <li>• PM – The journey time from A4040 West to A4040 East is 1 minute 20 seconds quicker than existing.</li> <li>• Saturday – A34 Southbound to One Stop is 1minutes 33 seconds quicker than existing. The A34 Northbound to One Stop is 51 seconds quicker than existing.</li> </ul>	Access to One Stop Shopping Centre	<ul style="list-style-type: none"> <li>• Cars and HGV's using the southern access can use the proposed roundabout to travel south (currently traffic from the southern access uses Aldridge Road to make the 'U' Turn to head south).</li> <li>• Visitors to One Stop from A34 heading south will be able to use the roundabout under the flyover as opposed to the Birchfield Island to make a 'U' turn, thereby having a shorter journey time.</li> </ul>	Buses	<ul style="list-style-type: none"> <li>• Bus lanes provided on east side of Walsall Road (Southbound).</li> <li>• Short length of Bus Lane provided on west side of Walsall Road (Northbound)</li> <li>• Bus lane provided on short section of Aldridge Road approach to Walsall Road.</li> <li>• Option 3 improves the SPRINT bus journey time by approximately 3minutes when compared to the existing layout and to the bus services that do not use the flyover.</li> </ul>	Cyclists and Pedestrians	<ul style="list-style-type: none"> <li>• Segregated two-way cycle lane provided along Walsall Road from the Birmingham Cycle Revolution scheme that currently terminates at Heathfield Road.</li> <li>• Shared use cycle/footway provided on the western side of Walsall Road from One Stop</li> <li>• Toucan Crossing provided across A34 at One Stop.</li> <li>• The 'closed to through traffic' section of Aldridge</li> </ul>
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Access to One Stop Shopping Centre	<ul style="list-style-type: none"> <li>• Cars and HGV's using the southern access can use the proposed roundabout to travel south (currently traffic from the southern access uses Aldridge Road to make the 'U' Turn to head south).</li> <li>• Visitors to One Stop from A34 heading south will be able to use the roundabout under the flyover as opposed to the Birchfield Island to make a 'U' turn, thereby having a shorter journey time.</li> </ul>								
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		<p>Road would become public realm for cycle, pedestrian and bus use.</p> <ul style="list-style-type: none"> <li>Toucan crossing provided for all 4 arms of the proposed traffic signal junction at Birchfield Island location to replace the uninviting Pedestrian subway and footbridge at Birchfield Island is to be removed.</li> </ul>
	Public Realm	<ul style="list-style-type: none"> <li>The closure to through traffic of part of Aldridge Road will create a single site for the residential development scheme.</li> <li>Changing Birchfield roundabout to a traffic signal junction enables surface level crossings and improvements to the public realm by increasing footway widths.</li> </ul>
	<p><b><u>What are the Disadvantages/negative aspects of this option compared to the existing layout?</u></b></p>	
	Journey Times and Queue Lengths	<p>Refer to Plans 1 to 4 in Appendix E to the Executive report. It should be noted that the queue lengths for the existing layout and Option 3 are not necessarily measured from the same point due to layouts being different.</p> <p>The queues lengths are shown on the Plans.</p> <p>The journey times provide a better reflection of the performance of the proposal and the key outcomes are given below:</p> <ul style="list-style-type: none"> <li>AM – The journey time from A453 to A34 Southbound is 46 seconds slower than existing.</li> <li>PM – The A34 Northbound through the junction is over 3 minutes slower than existing journey time. The A34 Northbound to A453 is over 2 minutes slower than the existing journey time.</li> <li>Saturday – The following journey times are slower than existing: <ul style="list-style-type: none"> <li>➤ A453 to A34 Southbound – 3 minutes 51 seconds</li> <li>➤ A453 to One Stop – 2 minutes 10 seconds.</li> <li>➤ A4040 to One Stop – 1 minutes 26 seconds.</li> <li>➤ A34 Northbound to A453 – 1 minutes 10 seconds.</li> <li>➤ From One Stop to all routes – journey takes between 55 seconds and over 2 minutes longer than existing.</li> </ul> </li> </ul>
	Access to One Stop Shopping Centre	<ul style="list-style-type: none"> <li>The traffic modelling indicates queues on both the southbound and northbound egress points that are longer than the existing.</li> </ul>
	Buses	<ul style="list-style-type: none"> <li>Only short length of bus lane provided on west side of Walsall Road (Northbound)</li> </ul>
	Cyclists and Pedestrians	None identified.
	Public Realm	<ul style="list-style-type: none"> <li>The flyover would be retained as a physical and visual barrier that continues to contribute to the visual domination of highways infrastructure and forms a barrier between the proposed village and the commercial and transport facilities on the west side of the A34. This would reduce the opportunities to improve the local environment for residential and commercial development. Retaining the flyover would provide less</li> </ul>

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		opportunity than Options 1 and 2 in terms of knitting the Perry Barr Community back together.
<b>People Consulted</b>	As detailed in section 5 of the Executive Report	
<b>Recommendation</b>	Abandon this Option.	
<b>Principal Reason for Decision</b>	Option 3 experiences significant PM peak traffic queuing and delays, whilst it does not provide for transformation at Perry Barr nor would act as a catalyst for further development.	

### 3. Summary of Options Appraisal – Price/Quality Matrix

	Options (score out of 100)			Weighting	Weighted Score		
	1	2	3		1	2	3
<b>Criteria</b>							
Total Capital Cost	87	97	100	20	17.4	19.4	20
Full Year Revenue Consequences	100	90	80	10	10	9	8
Quality Evaluation Criteria							
1) Meeting Service Outcomes and Priorities	50	100	75	40	20	40	30
2) Deliverability to meet CWG timescale	75	75	100	30	22.5	22.5	30
<b>Total</b>				<b>100%</b>	69.9	90.9	88.0

<b>4. Option Recommended</b>	Option 2 is recommended - The removal of the Perry Barr flyover is a key element of proposed strategic highway improvements as well as the placemaking in Perry Barr, and is crucial to the growth and transformation of Perry Barr District Centre. The flyover is a physical and visual barrier that contributes to the traffic and highways infrastructure dominating and bisecting the Centre. Its removal will deliver a much more attractive, legible and connected urban centre, whilst promoting sustainable forms of transport. It will create a better quality environment and access for sites fronting the highway, including residential and commercial development delivered here, and will improve development value thereby improving viability.
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5. Budget information						
	Voyager Code	Financial Year 2018/19	Financial Year 2019/20	Financial Year 2020/21	Financial Year 2021/22	Total
<b>Capital Costs &amp; Funding</b>		<b>£'000</b>	<b>£'000</b>	<b>£'000</b>	<b>£'000</b>	<b>£'000</b>
Capital Expenditure		170	3,000	14,000	9,930	27,100
<b>Totals</b>		<b>170</b>	<b>3,000</b>	<b>14,000</b>	<b>9,930</b>	<b>27,100</b>
<b>Funding</b>						
Local Growth Fund		170	0	0	0	170
Local Growth Fund (BCR)		0	1,100	0	0	1,100
Prudential Borrowing (to be repaid through receipts from sale of dwellings)		0	0	0	1,130	1,130
Government Infrastructure Grant		0	1,900	14,000	8,800	24,700
<b>Totals</b>		<b>170</b>	<b>3,000</b>	<b>14,000</b>	<b>9,930</b>	<b>27,100</b>

#### Revenue Implications

This project will both remove and create assets that will form part of the highway upon completion of the project; as such they will be maintained within the overall highway maintenance programme. The estimated net cost/saving of any newly created assets within the highway maintenance process will be established once the design for the preferred option has been further developed and reported in the Full Business Case report along with the funding source. The detail design will be developed with a view to minimising the future maintenance liability on the City Council.

6. Project Development Requirements/Information	
<b>Products required to produce Full Business Case</b>	<ul style="list-style-type: none"> <li>Detailed design on preferred option including detailed cost estimates;</li> <li>Full assessment of revenue and maintenance cost implications;</li> <li>Full public consultation on the preferred option;</li> <li>Stage 1 and 2 Road Safety Audits;</li> <li>Review of existing Traffic Regulation Orders and the changes required;</li> <li>A refined and detailed project delivery programme;</li> <li>Traffic Management Plan;</li> <li>Updated Equalities Analysis;</li> <li>Air Quality assessment on final option post public consultation;</li> <li>Updated project risk register;</li> <li>Refined traffic modelling taking into final option and future year forecasts.</li> </ul>
<b>Estimated time to complete project development</b>	Full Business Case report is expected Autumn 2019, the project will be developed further from February 2019 up to Full Business Case submission.
<b>Estimated cost to complete project development</b>	The estimated project development cost up to this Options Appraisal is £150,000, the estimated cost to progress the project to Full Business Case is £500,000 including fees, surveys, site investigation works and consultation costs.
<b>Funding of development costs</b>	Local Growth Fund

<b>Planned FBC Date</b>	Autumn 2019	<b>Planned Date for Technical Completion</b>	December 2021
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