

Committees: Streets and Walkways Sub-Committee <i>[for decision]</i> Projects Sub Committee <i>(for decision)</i>	Dates: 26 May 2020 27 May 2020
Subject: Bank Junction Improvements – All Change At Bank Unique Project Identifier: 11401	Gateway 3: Outline Options Appraisal (Complex)
Report of: Director of the Built Environment Report Author: Gillian Howard – City Transportation	For Decision
<h1>PUBLIC</h1>	

1. Status update	Project Description: To improve the safety, air quality and pedestrian experience of the area around the Bank junction to reflect the historic and iconic surroundings with the appropriate sense of place. RAG Status: Amber (Green at last report to Committee) Risk Status: Medium (Medium at last report to committee) Total Estimated Cost of Project (excluding risk): £5-5.6m Change in Total Estimated Cost of Project (excluding risk): Decrease of £12.4M of the upper limit since last report to Committee following the Capital Bid outcome. Spend to Date: £1,190,861 Costed Risk Provision Utilised: N/A Slippage: This report is approximately three months behind the previously suggested reporting timeline in the April 2019 report. This was partly due to an issue with continuity of funding following the early stage of the fundamental review and the need to secure alternative funding arrangements to reach Gateway 4. We also experienced team resourcing problems. Both issues have now been resolved. It is still thought that
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	<p>substantial completion by the end of 2022 is viable, with the Bank station capacity upgrade believed to be complete in late 2022.</p> <p>NB: There are several areas of project progress that could be impacted by the COVID-19 situation. This includes the furloughing of a number of TfL staff. This is an evolving situation at the time the report is being written and the impact is not yet understood.</p>
<p>2. Next steps and requested decisions</p>	<p>Next Gateway: <i>Gateway 4: Detailed Options Appraisal</i></p> <p>Next Steps:</p> <ul style="list-style-type: none"> • Following this report, undertake more detailed highway design and traffic modelling assessment on the three options taken forward to Gateway 4. To include investigating varying the vehicle mix through Bank from that currently in place and possible traffic management restrictions/relaxations for the operational arms of the junction. • Continue to liaise with Transport for London (TfL) to ensure that the closure options and operating scenarios are viable and that the impact on the road network is considered acceptable both locally and on the wider network (For bus and general traffic). • As the amount of space being reprioritised is more thoroughly understood, develop potential opportunities for public realm improvements to feed into the G4 report. • Liaise with accessibility groups to discuss any early concerns of the developing feasibility designs. • Prepare and submit a Gateway 4 report to recommend one option of which arms to close/restrict. The report will also detail viable vehicle mix and traffic management options for the remaining open arms. It will also set out the likely public realm and place making opportunities within the available budget. <p>Requested Decisions:</p> <ol style="list-style-type: none"> 1. Note the additional secured £4 million funding for the project from the 2019 Capital Bid process. 2. Note the total estimated cost of the project at £5-5.6M (excluding risk). 3. Approve Options I, IV and V as the closure/restriction options to take forward to Gateway 4 for additional feasibility design. 4. Agree the revised budget line amounts in Table 1 (section 3), which remain within the existing

	<p>approved budget allocation of £1,583,457.</p> <p>5. Delegate authority to the Director of the Built Environment to approve budget adjustments, above the existing authority within the project procedures and in consultation with Chamberlains, between budget lines if this is within the approved total project budget amount.</p>
<p>3. Resource requirements to reach next Gateway</p>	<ol style="list-style-type: none"> 1. It was agreed by Committees in January 2019 that the outlined way forward in the previous All Change at Bank gateway 3 report was no longer appropriate given the work that had been undertaken on the Bank on Safety scheme. It was agreed that Officers should instead investigate a two to three arm closure (or further restriction) at Bank. Members gave clear direction that the design should not preclude the option for full pedestrianisation in the future. 2. An issues report in April 2019, set out the methodology of how the short list of two to three arm closure/restriction options would be undertaken. This included proposing submitting a further Issues report in December 2019/January 2020 ahead of the Gateway 4 report scheduled in April/May 2020. This issues report was intended to cover the options which had been dismissed to date and focus on a smaller number of possible options to be discussed in more detail in the following Gateway 4 report. Funding to reach Gateway 4 was secured. As mentioned in Section 1 there has been some slippage on this previously identified programme and the project is approximately three months behind its identified milestones. 3. It became apparent in preparing the issues report that it was more suited to be presented as a Gateway 3 report to compare the options. However, whilst it is presented as a Gateway 3 report, funding has already been secured to reach Gateway 4 and no further funds are being requested in this report. 4. The below table sets out the required alterations to the budget lines to reflect where expenditure is now forecast to reach the next reporting stage. It remains within the current total approved budget of £1,583,457.

Table 1: Required budget breakdown

Item	Reason	Funds/ Source of Funding	Cost (£)
Environmental services/Highways staff cost	Highway engineer design	S106	52,467
P&T Staff cost	Project management, supervision and public realm input	S106/TfL	665,165
DBE Structure staff costs	Structural advice	S106	5,000
Legal staff cost	Legal advice and consultation	S106	5,000
Fees	TfL, Consultants, data collection etc.	S106/TfL	778,462
surveys	Topographical, radar etc.	S106/TfL	67,363
Revenue			10,000
Total			1,583,457

Costed Risk Provision requested for this Gateway: N/A

5. The above resources will provide up to:

- Approximately 1000 hours of dedicated project management consultancy support, 384 hours of project manager support, 480 hours of supervision and up to 168 hours of public realm input on the developing designs. These maximum hours are based on taking forward three options to Gateway 4 and allowing time for multiple operational scenarios to be tested and reviewed for each closure option, followed by the need to design multiple viable scenarios.
- Approximately 384 hours of highway engineer design time and supervision

	<ul style="list-style-type: none"> • If required internal legal advice • If required internal structural advice • Fees to cover the cost of things such as the ongoing traffic modelling consultancy contract to Gateway 4, fees to TfL for items such as, but not limited to the traffic modelling audit and update and any required pedestrian analysis as well as any London Underground Structural advice. Also, any additional survey work that may be required to assist the designs and consultancy fees for further design advice or sketches to assist in communicating what might be viable at the gateway 4 report.
<p>4. Overview of project options</p>	<p><u>Background:</u> <u>What has happened to date:</u></p> <p>6. To recap what had been agreed in the previous report in April 2019:</p> <ul style="list-style-type: none"> • it was proposed that the available 35 potential combinations of either a two or three arm closure, would be assessed. Details of how this was undertaken is in Appendix 4 • This initial assessment would be used to reduce options to approximately 20. • Further technical work would then be undertaken on the 20 options with a view to presenting Members with the highest five ranked options for consideration. <p>7. This report provides more detail of the five top ranked closure options. The assessment to date has used a combination of technical evidence, some stakeholder feedback and engineering input. We are now seeking Members views on reducing the number of options from five to three for further detailed feasibility work to lead to a Gateway 4 report in September/October 2020. In order to keep to the revised programme and provide a change at Bank in time for the opening of the capacity upgrade, it is not possible to take more than three options through to detailed feasibility.</p> <p>8. In Appendix 4 there is a more detailed document explaining how the original 35 options have been assessed and at which point various options have been discarded. This work was peer reviewed internally at each stage to ensure the logic of the assessments were robust.</p> <p>9. To date, external stakeholder engagement has been focussed on TfL, particularly around bus routing and traffic modelling uses. The impact on the bus network, and acceptability of the traffic model development is a key consideration in any future TfL approvals, therefore it was</p>

considered prudent to ensure that the fundamental principles by which we have assessed the options were acceptable to them. In order to undertake the initial feasibility traffic modelling work, input from London Buses was required as to possible rerouting options for services. This has been used to assess the probable impact of the 20 closure options.

10. The feasibility traffic modelling has used the previously approved Bank on Safety traffic model with some updated traffic flow information. Before TfL would audit any proposed option, further work to update the model is required. However, for this first feasibility comparison the existing model provides enough information to be able to compare the 20 options to each other and give enough confidence in the likely journey impacts. This has then been used in this early assessment to help discard closure options.

11. Other stakeholder input that has been considered are from internal sources such as network performance, accessibility, the parking and enforcement team, historic environment and the highways teams.

12. The key assumptions the initial 20 assessments have been based on, are that:

- the existing operation of Monday to Friday 7am to 7pm for bus and cycles only remains at Bank.
- cyclists will be retained on all approach arms regardless of whether they have been 'closed'.
- that rerouted bus services will, where possible, remain operating through the junction itself; and
- that the footway extensions that are currently being provided at Bank, as part of the interim improvements to enhance the operation of the Bank on Safety scheme, is considered the new baseline for pedestrian comfort levels and increased area comparison. All reprioritised areas provided in the options appraisal are in addition to the new 600m² currently under construction. (The estimated construction costs however do include the materials and time to resurface these areas in permanent higher-quality materials).

13. Based on the above assumptions, the 20 options have been compared to each other against how well they could perform against project objectives, known network performance constraints, and engineering difficulties. The options were then assessed on probable journey time impacts on bus and general traffic times and the potential of creating space that can be reprioritised to pedestrians and to enhance the public realm environment. These

performance criteria were ranked as follows:

- a. **Impact on general journey times (15% weighting)**
- b. **Impact on bus journey times (25%)**
- c. **Pedestrian uplift – Part 1 (35%)** – reallocation of road space to provide a safer and more comfortable environment, **within** the limits of the Bank on Safety scheme (see Appendix 5)
- d. **Pedestrian uplift – Part 2 (25%)** – reallocation of road space to provide a safer and more comfortable environment, **outside** the limits of the Bank on Safety scheme (see Appendix 5)

An overall score was given to each of the 20 options and the first five options have been taken to be discussed in this report. Their ranking in each individual criteria and final score can be seen in table 2. The final score provides a balance at this stage between benefits and technical difficulty to deliver.

14. Given that there is further detailed feasibility work still to be undertaken to fully appreciate the benefits and impacts of any option, the recommendations in this report take into consideration other factors in addition to the rankings. Things such as how easy are the probable mitigation measures to achieve in the timeframe and ensuring a spread of options to give more meaningful choice at the next stage. The recommendations ensure that there is a mixture of proposed closed arms, difficulty and ambition being further investigated. This will give a better range of options at Gateway 4 in September 2020 for Members to choose from and how they each link with other emerging City proposals.

What happens next:

15. Following the decision from this report, the next stage of work will consider the way in which the three closure options could operate. This includes on the operational arms:
 - The viable traffic mix, i.e. looking to see if it is possible to introduce more vehicle types during the current restricted hours. This would include looking at taxis, motorbikes or perhaps all vehicle types. The aim is to still achieve project objectives and maintain reasonable journey times.
 - Timing of restrictions. Reviewing the current operation of timings of Monday to Friday 7am to 7pm and whether this needs to be eased or increased.
 - On the 'closed arms', which would be used to prioritise people walking, the next stage of work would consider:
 - a. whether these arms would operate best as fully

- closed to motor vehicles or time restricted.
- b. whether all arms would need to have provision for bicycles on, Or
- c. whether there is a combination of scenarios across the pedestrian priority arms to get the right balance.

16. These operating scenarios will be investigated and assessed to identify the optimum way each of the three closure options could work. Also, investigations into what might be able to be achieved in each of the three options in terms of public realm enhancements in the new and existing spaces. The results of this work will be presented in the Gateway 4 report in September 2020.

17. The recommendations may potentially consider that multiple ways of operation are viable at the Gateway 4 stage and recommend that these form part of the subsequent public consultation alongside the public realm enhancements. This is currently planned for early 2021.

Current Project Options:

The Five options for consideration now:

18. In order to assess the potential of the five options, initial feasibility designs to understand the likely requirement for carriageway space have been undertaken. The potential pedestrian space that could then be created has been used to help compare each of the options. It should be noted that these initial designs are likely to change as we progress through detailed design and therefore have not been included within this report. The assessment to date focuses on the opportunity for reprioritised space for people to walk.

19. The initial feasibility traffic modelling has also been undertaken based on some assumed bus rerouting plans. TfL would need to undertake further work in terms of consultation with wider stakeholders before they could confirm the rerouting of buses. At this early stage the rerouting has been agreed as practical for each option but is subject to change as detailed design progresses. The feasibility modelling offers a consistent basis on which to compare the various options to each other in terms of journey times. Further discussions with TfL will take place, to ensure that the options can deliver an efficient bus network through Bank and the surrounding areas. Conversations regarding reducing the number of routes or frequencies where appropriate will continue to be had.

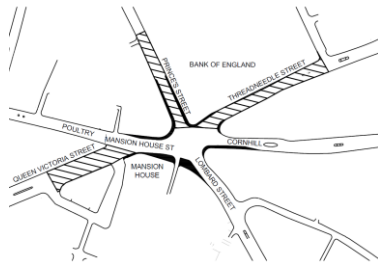
20. It should be noted that the journey time feasibility work undertaken to date does not look at possible mitigation

measures. When this is done, it may improve the journey time results that we have used in the assessments so far. They are therefore being used as a guide but are subject to change.

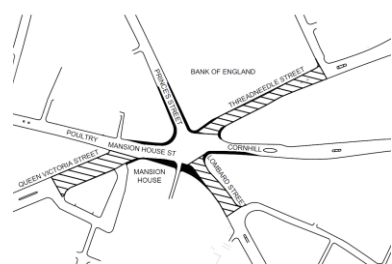
21. An overview of each closure option is explained below. More detail is contained within the appraisal matrix at the end of the report.

22. The five options: (hatched lines are closed arms). A larger copy is available in Appendix 9

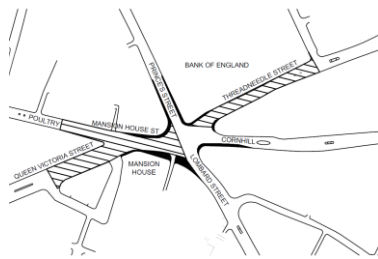
Option I is a three arm closure



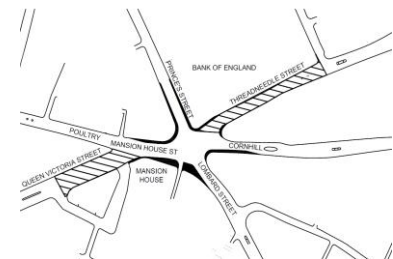
Option II is a three arm closure



Option III is a three arm closure



Option IV is a two arm closure



Option V is a three arm closure

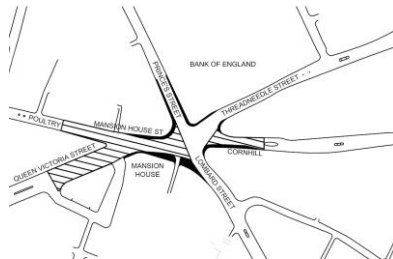


Table 2 shows where each of the above options came in the rankings and the overall score once the weighting was applied. The lower the overall score, the better performing the option was across the four criteria measured.

Table 2 – summary of the closure options ranked and weighted scores

<i>Number of Arms closed</i>	3	3	3	2	3
Option number	I	II	III	IV	V
Bus journey time combined peak rank (25%)	7	9	8	4	5
General traffic combined peak rank (15%)	5	9	11	1	8
Area 1 rank (35%)	2	1	3	10	8
Area 2 rank (25%)	2	1	3	5	9
Weighted average score	3.7	4.2	5.5	5.9	7.5
Recommended in this report	R	-	-	R	R

23. As can be seen in Table 2, some of the options based purely on metrics ranked very highly for the amount of space that could be reprioritised to pedestrians and to the public realm. One Option (IV) ranked highly for smaller impacts on the journey times for both general traffic and for bus journey times in the initial traffic modelling assessment.

24. Paragraphs 25 to 50 look in more detail at these criteria, the differences between them and the implications of some of these differences. These have been taken into consideration in making the recommendations of the report to support options I, IV and V. Each of the above five options are still challenging to achieve and each for different reasons.

Potential space for reprioritisation:

25. In appendix 5 there is an image showing the extent of the area described in Table 3 as area 1, which is the main body of the junction, and then area 2 which is moving further along the approach arms.

26. Table 3 summarises the amount of reprioritised space for pedestrians in the two identified areas in addition to the current work being undertaken to widen the footway (which is an additional 600m²).

Table 3 -summary of size of area that could be reprioritised to pedestrian use.

Option	Recommended	Queen Victoria Street	Poultry	Princes Street	Threadneedle Street	Cornhill	Lombard Street/(KWS)	Pedestrian area increases in M ²		
								Area 1	Area 2	Combined Increase M ²
I	R	x		x	x			703	1060	1763
II		x			x		x	707	1068	1775
III		x	x		x			686	984	1670
IV	R	x			x			531	882	1413
V	R	x	x			x		552	683	1235

27. Options I, II and III all provide similar gains in areas 1 and 2. One way of assessing the meaning of these gains is to consider the Pedestrian Comfort Levels (PCL's) which is a grading system of crowding and therefore comfort. Scores range from A to F, with A being very comfortable to E/F being very uncomfortable (restricted movement and little personal space). The City's Transport Strategy sets out the desire to have pedestrian comfort levels of B+.

28. Option I provides the opportunity to improve the pedestrian comfort levels (PCL) on Princes Street and Threadneedle Street which are still forecast to be at a PCL of D in the peak following the completion of the Bank on Safety improvements. A PCL of D means walking speeds are restricted and reduced and there are difficulties in bypassing slower pedestrians. This assessment is based on the numbers of pedestrians in the 2019 pedestrian count. Moving forward as the number of people walking in the City is forecast to grow, these comfort levels are likely to decrease further.

29. With Queen Victoria Street closed/restricted in each of the five options, this would also allow for the improvement to the pedestrian comfort level on Mansion House Street on the corner of Walbrook where again the comfort level is forecast to remain at D after the current improvements have completed. Further information on the forecast pedestrian comfort levels following the completion of the Bank on Safety scheme, based on existing volumes, can be found in Appendix 5.

30. Options IV and V offer the potential for less reprioritisation of space in comparison to Options I to III but Option V does

offer prioritisation of east west movement for people walking which is more likely to increase as the City Cluster buildings start to operate. Option II also offers the east/west opportunity but potentially offers a poorer experience once at the eastern end of Threadneedle Street, which is very narrow for pedestrians and outside of the current scope of this project area.

Journey Time information: Buses.

31. The below information, whilst not a specific project objective, is a key consideration regarding acceptability of any proposals to TfL and to other stakeholders in how changes at Bank may impact other movements and the time implications of this.

32. Looking at the impact on public transport, Table 4 shows the average delay to scheduled bus services within the traffic modelling area across the am and pm peaks. The rest of the table helps to show that those averages are made up of both positive and negative factors on bus journey times. The traffic model provides information on direction of travel for each bus that travels through the area, therefore the improvements and delays refer to one direction of travel only.

Table 4 – provisional forecast of average Bus journey time improvements and delay

Option	Avg of AM and PM peak periods journey time	Number of bus route directions (NB, SB, EB, WB) that:					
		in the AM Peak			In the PM peak		
		Improve	Delayed		improve	Delayed	
		Between 0-1 min	5-10 min	over 10 min	Between 0-1 min	5-10 min	over 10 min
I (R)	+1-2 mins	6	5	2	6	5	0
II	+2-3 mins	7	8	0	5	5	0
III	+1-2 mins	9	3	0	13	5	3
IV (R)	+1-2 mins	8	3	0	10	3	0
V(R)	+1-2 mins	15	3	0	11	5	3

33. The provisional journey times on some routes are considered to be challenging to overcome, but not a surprise when aiming to deliver such transformation. Greater than 5 minutes delays occur on all of the options and will require a focus on mitigation measures as we move to the next phase of work. It is unlikely to be able to fully

mitigate against all of these delays. Some option specific points are below.

Option I

34. The bus diversion routes without mitigation, are predicted to put pressure on St Martin's-Le-Grand/ New Change and also the approach to the Wormwood Street/ Bishopsgate Junction with rerouted bus services. However, there may be mitigation measures that may ease these impacts which would still allow for substantial completion of the scheme in 2022 (in line with the Bank capacity upgrade opening).

Option II

35. The provisional journey times, particularly on some routes, are considered to be challenging to overcome, with possible mitigations measures being high risk to achieve. The average combined peak period impact is the highest of the five options. To get journey times to an acceptable level, it is believed that the operation of Monument Junction would need to be significantly changed. The reason for this is that this option causes all northbound bus routes travelling over London Bridge to be in the righthand lane at the Monument Junction approach so that they can travel into Gracechurch Street/Bishopsgate, as King William Street is closed. This would put immense pressure on the right hand lane and cause queuing. This then puts pressure on the amount of time available for traffic to exit Cannon Street.

36. Rectifying this with the current volumes of traffic is unlikely to be viable. Monument is a TfL junction and whilst the City can lobby for changes, it would not be in our control to ensure that improvements happened within the time frame of 2022. This would put achieving this option within the desired time frame and cost in a high-risk category. It is therefore not recommended to proceed to Gateway 4 given that Option I offers a very similar improvement in reprioritised space with less riskier mitigation strategies to minimise the journey time impacts on buses.

Option III

37. The provisional journey times are challenging to mitigate to acceptable levels, particularly on certain routes during the PM peak period. It may not be possible to provide adequate mitigation to gain the relevant approvals from Transport for London. It is one of the issues of having both east/west routes next to each other proposed to be closed, as it forces pressure on the surrounding network with all east/west buses diverted around the wider network. This puts pressure on both the approach to Monument junction and London Wall with predicted congestion eastbound. It is not to say mitigation measures could not be introduced, but

it would rely on a reduction in vehicle numbers to relieve pressure on these corridors. Again, this puts being able to achieve this option within the 2022 time frame in the high risk category. This option is not recommended to proceed to Gateway 4.

Option IV

38. The provisional journey times are considered to be challenging, particularly in the PM peak, but there is more optimism that mitigation measures are possible that would be effective. This suggests that this option would be the easier of the five options presented to obtain TfL traffic management approvals with less mitigation measures required. The consequence of this is less opportunity for public realm and place making in the future in terms of space, but potentially more funds available to provide those amenities within the overall budget envelope.

Option V

39. The journey times are challenging, particularly in the PM peak. Similar issues of congestion on Cannon Street eastbound are predicted with this option, particularly in the PM peak as there is with Option III. Option V works better in the AM peak than Option III and offers the better opportunity for providing bus journey time savings on more route directions compared to the other options, even though the PM peak is still challenging.

Rerouting of buses and practical implications:

40. Options I to IV all require Threadneedle street to be closed. The current proposed diversions would require changes to the junction at Cornhill/ Bishopsgate. This will need to be investigated further to allow alternative movements for buses. This would need to be approved by TfL as Bishopsgate is part of the Transport for London Road Network (TLRN).
41. Significant change at Monument junction is unlikely to happen in the time frame to achieve substantial completion by the end of 2022. Remaining mitigation measures are likely to require the reduction in the frequency of some bus routes to balance the increase of the number of buses being sent along that corridor in the short term. Patronage data will be assessed in the next stage of work to Gateway 4 to assess how practical this may be.

Journey time information: General Traffic

42. When looking at general traffic journey times along the four key corridors Table 5 shows a broad average of the AM, PM and combined AM and PM peak journey time impacts for general traffic of the four key corridors. The four

corridors and their approaches are:

- London Wall,
- Cannon Street,
- Bishopsgate/Gracechurch Street and
- New Change/Newgate Street Gyratory

43. These corridors are where the rerouted traffic from the closed arms are most likely to reassign to. At this stage, the information is showing the impact of the rerouted bus services on those corridors on general traffic. Option specific points are below.

Table 5 – provisional forecast of average General Traffic journey time delay on key corridors

Option	Am Peak			PM Peak			AM & PM Peak Average	
	0-1 min	1-2 mins	2-3 mins	0-1 min	1-2 mins	2-3 mins	0-1 min	1-2 mins
I		✓		✓			✓	
II			✓		✓			✓
III	✓					✓		✓
IV	✓			✓			✓	
V	✓					✓		✓

Option I

44. Delays on Bishopsgate Northbound and New Change/Newgate Street Gyratory southbound are forecast which may prove challenging to mitigate. However, the PM peak forecast is at this stage very encouraging.

Option II

45. Forecast delays on Bishopsgate both northbound and southbound in the AM peak that would be difficult to mitigate without significant reduction in the number of vehicles travelling on this corridor. There is high risk associated with being able to mitigate these increases. The requirement to allow a right turn for buses from Cornhill into Gracechurch Street, as Lombard Street/King William Street is closed in this option, puts the added pressure southbound on the Bishopsgate corridor. Combined with the higher risk mitigation measures need to help alleviate forecast journey time increases on the bus network, this option is not recommended to continue to Gateway 4.

Option III and V

46. The AM peak is forecast to work reasonably well. However, there is significant delay forecast in the PM peak on the Newgate Street Gyratory/New Change corridor. This is linked to Monument Junction not having the capacity to deal with the increased volume of buses moving along Cannon Street. Vehicles exiting New Change onto Cannon Street

are forecast to not be able to enter the traffic flow on Cannon Street in large number, therefore potentially queuing several rounds of traffic lights before they can merge. It is believed that to fully resolve this, it would require a significant reduction in the number of vehicles at Monument and is therefore high risk at this stage of being able to achieve this before the end of 2022. Option III is not recommended to proceed. Option V is recommended but recognises this as a significant challenge.

Option IV

47. Again, the AM peak for this option is forecast to work reasonably well, with the PM peak showing some difficulty on the southbound Newgate Street Gyratory / New Change Corridor which may prove challenging to reduce to acceptable levels.

Other things to consider

48. The main focus to date has been on assessing the options by comparing criteria that we can provide/calculate a metric for. There are however other considerations in choosing the three options to take forward for further detailed feasibility work, which should be noted.

49. Options I, II, III and IV all require vehicles servicing businesses in Cornhill to travel through Bank Junction (in one direction) if servicing were to continue to occur throughout the day during the existing timed restrictions on vehicles. It might be necessary to consider imposing tighter servicing restrictions to balance out the increased number of buses using Cornhill.

50. In both Options III and V, vehicles requiring access to St Mildred's Court (Between the Natwest and The Ned) are likely to be required to reverse across potential formalised cycle lanes. How this is undertaken safely would need to be considered during the design.

51. All of these options offer the opportunity to simplify the junction layout, reduce collisions for vulnerable road users and reduce pedestrian crowding. There is also an opportunity to improve air quality at Bank by reducing the number of vehicles, however the redistribution impact is not understood at this stage, particularly outside of the current restriction hours if the vehicle mix, or restriction times were changed. This would need further investigation. They all offer opportunities for providing space that could be used to enhance the public realm in this historic setting.

52. At this stage of the assessments there is still additional design work to be undertaken to be fully comfortable that

	<p>the options can be achieved. Difficulties have been highlighted above for each option and there is no easy option that will meet the project objectives and timeframes without impacting on journey times. Therefore, a more pragmatic approach to recommending the three options to be taken forward to Gateway 4 has been made to provide a balance of arm closure options. This ensures there is still a mix of proposed arm closures and a mix of two and three arm proposals on which the detailed work can be completed.</p> <p>53. Options I, II and III offer similar improvements in terms of area size, but Option I, on average, performs better in terms of journey times than Options II and III.</p> <p>54. Option V is the only shortlisted option that keeps Threadneedle Street open for motorised vehicles. Whilst this option provides the smallest opportunity for reprioritised space at this stage it would be good to retain an option to be further assessed that permitted vehicular movement in Threadneedle Street. Also, this option provides a link through to the City Cluster programme of changes which are being developed and which may offer benefits greater than are currently understood by having Cornhill closed to vehicles. The possible journey time impacts are still challenging.</p>
<p>5. Recommendation</p>	<p><u>Recommendations</u></p> <p>55. After consideration of all of the factors, it is recommended that the following three closure options are taken into the next stage of investigation. These are closures of:</p> <ul style="list-style-type: none"> • Option I - Queen Victoria Street/ Princess Street and Threadneedle Street • Option IV - Queen Victoria Street and Threadneedle Street. • Option V - Queen Victoria Street/ Poultry and Cornhill. <p>The reasoning for this is that:</p> <p>56. Option I is a challenging option to achieve, but it offers very good opportunities to provide significant reprioritisation of space to benefit the increasing pedestrian population in the area. Recognising that current budget limits will constrain the scale of place making, this option looks to offer the opportunity to ensure that the space is captured and could be improved over time as funding became available. This option also would enable the focus of improving pedestrian comfort levels on sections of street that we are aware will still be uncomfortable despite the current footway enhancements being undertaken.</p>

	<p>57. Option 1 is likely to require some funding to be spent at Cornhill/Bishopsgate junction to potentially modify the layout to allow alternative bus turning movements. This is similar in four out of the five shortlisted options presented. It does not substantially rely on Monument Junction being significantly modified and therefore funding towards this larger project would not be required, which is a benefit with a relatively limited budget. Also, across the categories that have so far been assessed, this option has scored the best weighted average. It is therefore recommended that this option should be further investigated to assess its viability.</p> <p>58. Options II and III pose higher risk elements to the potential ability to mitigate the journey time impacts. The space created is not too dissimilar to that in Option I and so it is recommended that efforts are concentrated on Option I rather than spending time on higher risk options that would be difficult to deliver within the ideal timeframe of the end of 2022.</p> <p>59. Option IV as a two-arm closure option offers significant opportunity to make a difference with potentially limited interventions around the wider network and with what might be considered more palatable journey time impacts. Retaining this option at this stage provides a mixture of two and three arms to Gateway 4, giving flexibility.</p> <p>60. Option V is recommended to be retained to ensure that up to gateway 4 there is a variety of closure options proposed given that when investigating in more detail there is still a possibility that something is uncovered which would render a proposal to close a particular arm too difficult to achieve or overcome. Also, in terms of future demand for people walking, enhancing an east west corridor for pedestrian and cyclists is likely to be beneficial with the forecast growth of employment in the City Cluster. This option provides less space opportunity, but if Threadneedle Street were needed to be retained for vehicles, this options still offers an opportunity to overcome this.</p>
<p>6. Risk</p>	<p>61. There is a yet unquantified risk regarding the work we are doing with TfL because of the impact the COVID-19 pandemic has had on TfL operations. At the time of writing it is unclear what areas of TfL will be furloughed and whether this is going to impact the ability of the traffic modelling work to continue and how this might impact our third-party approvals timeframe. This increases the risk of not being able to substantially complete by the end of 2022.</p> <p>62. This continues to be an area that is being assessed but</p>

	<p>requires more time to fully understand all of the potential impacts to project delivery as well as possible opportunities that may become apparent. This includes the COVID-19 recovery work that the City is proposing which, if approved, will deliver change to movement in this area in the short to medium term. This may offer opportunities to this project to learn from, as well as some potential risks to its programme.</p> <p>63. Outside of the impact of COVID-19, the key risks associated with taking forward the recommended three options to Gateway 4:</p> <ul style="list-style-type: none"> • Specific technical challenge associated with this project includes the London Underground structures which are situated under Bank Junction, and which are subject to further investigation and analysis. • There is a risk that the impacts on bus journey times, does not receive the level of support and approval from TfL required on any of the proposed options. Officers will continue to liaise with TfL during the development stages of the scheme to ensure all mitigation measures to reduce impacts on bus journey times have been investigated. • The options have the potential to negatively impact certain groups of people, particularly those with disabilities. This has been highlighted in the test of relevance which is in appendix 6. mitigation of this is planned by involving various accessibility groups as we develop the initial designs to consider identified issues. <p>64. Further information available in the Risk Register (Appendix 2) and Options Appraisal.</p>
<p>7. Procurement approach</p>	<p>65. Procurement of consultancy support had already been approved in the previous April 2019 report. The previously agreed PT4 form is in Appendix 3.</p> <p>66. The Consultancy contract has since been let through the Bloom Framework.</p>

Appendices

Appendix 1	Project Coversheet
Appendix 2	Risk Register (for recommended option)
Appendix 3	PT4 Procurement Form
Appendix 4	Methodology of assessment of 35 options
Appendix 5	Pedestrian Priority areas
Appendix 6	Equalities – test of relevance.
Appendix 7	Programmes
Appendix 8	Finance Tables
Appendix 9	Closure option diagrams

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Options Appraisal Matrix

<i>Option Summary</i>	<i>Option I</i>	<i>Option II</i>	<i>Option III</i>	<i>Option IV</i>	<i>Option V</i>
1. Brief description of option	- This three arm closure option of the junction would see motorised vehicles removed from: <ul style="list-style-type: none"> • Queen Victoria Street • Princess Street and • Threadneedle Street. 	- This three arm closure option of the junction would see motorised vehicles removed from: <ul style="list-style-type: none"> • Queen Victoria Street • Threadneedle Street and • King William Street. 	- This three arm closure option of the junction would see motorised vehicles removed from: <ul style="list-style-type: none"> • Queen Victoria Street/ • Poultry and • Threadneedle Street. 	- This two arm closure option of the junction would see motorised vehicles removed from: <ul style="list-style-type: none"> • Queen Victoria Street and • Threadneedle Street. 	- This three arm closure option of the junction would see motorised vehicles removed from: <ul style="list-style-type: none"> • Queen Victoria Street/ • Poultry and • Cornhill.
	- The junction would be reconfigured to create a safer and more pedestrian friendly environment at Bank. Road space will be reallocated to increase footway areas at the junction and on the closed arms to improve pedestrian comfort and offer opportunity for public realm enhancement.				
2. Scope and exclusions	In the work done to date it is assumed that: <ul style="list-style-type: none"> - The current operating restrictions at Bank allowing buses and cyclists only, Mon-Fri, 7am-7pm, would apply on the remaining open arms of the junction. - Bus routes that may be displaced from a closed arm as part of the work would, where possible, continue to travel through Bank on an alternative route - Redistribution of road space from motor vehicles to pedestrians to reduce pedestrian overcrowding is the priority. - Cyclists would continue to travel through Bank on all approaches rather than on alternative routes. - The area of the footway widening scheme currently taking place at Bank is not included in the additional 				

Option Summary	Option I	Option II	Option III	Option IV	Option V
	<p>areas suggested in this appraisal for each option.</p> <p>TO NOTE</p> <ul style="list-style-type: none"> - Investigating varying the vehicle mix (taxis, all traffic, etc) and the operating scenario (times, days etc) on the remaining operational arms will be undertaken at the next stage, as will whether it is possible to have a completely pedestrianised space within one of the proposed closed/restricted arms. 				
Project Planning					
<p>3. Programme and key dates</p>	<p><i>Overall project:</i> The timescales to meet substantial completion in time for the London Underground capacity upgrade at Bank to open in late 2022 is tight for all options. Given that there is unlikely to be significant public realm /Place making elements in the forthcoming design, at this stage it is still felt that options I, IV and V could all be functionally substantially completed by the end of 2022 with minor works completing in 2023.</p> <p>An outline of the anticipated milestones dates are covered below but all rely on the ability to get the relevant approvals in a reasonable timeframe. (NB – these time frames do not take into account the current COVID 19 impacts, particularly around the resources at TfL)</p>				
	<p>Gateway 4 Submission September 2020</p> <p>Public Consultation January/February 2021</p> <p>TfL approvals May/June 2021</p>	<p>Gateway 4 Submission September 2020</p> <p>Agree changes for Monument Junction in order to go out to public consultation May/June 2021</p>	<p>Gateway 4 Submission September 2020</p> <p>Work up the designs for the mitigation measures for TfL approvals (on strategic roads and also TLRN) require</p>	<p>Gateway 4 Submission September 2020</p> <p>Public Consultation January/February 2021</p> <p>TfL approvals May/June 2021</p>	<p>Gateway 4 Submission September 2020</p> <p>Public Consultation January/February 2021</p> <p>TfL approvals May/June 2021</p>

<i>Option Summary</i>	<i>Option I</i>	<i>Option II</i>	<i>Option III</i>	<i>Option IV</i>	<i>Option V</i>
	<p>Gateway 5 submission September/October 2021</p> <p>Construction could start December 2021.</p>	<p>TfL approvals September/October 2021</p> <p>Gateway 5 submission January /February 2022</p> <p>Construction could start April 2022 but would be dependent upon the linkages with the changes to Monument.</p>	<p>agreement prior to public consultation.</p> <p>Public consultation June/July 2021</p> <p>Final TfL approvals November/December 2021</p> <p>Gateway 5 submission February/March 2022</p> <p>Construction could start May 2022 but would depend upon how the programme for the mitigation measures needed to be delivered.</p>	<p>Gateway 5 submission September/October 2021</p> <p>Construction could start December 2021.</p>	<p>Gateway 5 submission September/October 2021</p> <p>Construction could start December 2021.</p>

Option Summary	Option I	Option II	Option III	Option IV	Option V
4. Risk implications	Overall project option risk: Medium	Overall project option risk: Medium	Overall project option risk: Medium	Overall project option risk: Low	Overall project option risk: Medium
<p><i>Summarise the main risks and their impact for each option.</i></p> <p>Further information available within the risk register (appendix 2)</p>	<ul style="list-style-type: none"> - High level strategic modelling needs to be undertaken with a future base traffic model to inform where traffic reassigns to. This traffic model is currently being updated to account for schemes that have been built after 2014 and for other future schemes that need to be taken into consideration to ensure that the scheme traffic reassignment modelling is fit for purpose. - There is likely to be some opposition from TfL buses, due to likely increases in some bus journey times as buses are displaced from the proposed closed arms. - Air quality levels may increase away from Bank Junction due to an increase in traffic congestion, caused by buses being displaced from the closed arms. - Options one to four all include the closure of Threadneedle Street which will require more traffic to use Cornhill/ Bishopsgate Junction. As this junction is on the TfL road network there is a risk that these changes will be more difficult to be approved. - Servicing St Mildred's Court could prove problematic with options three and five, Vehicles requiring access to St Mildred's Court are likely to be required to reverse across potential cycle lanes in this option - London Underground currently collect refuse from Mansion House Place underground entrance. This could cause conflict with pedestrians waiting on the newly created footway space outside Mansion House. 				
5. Stakeholders and	<p>Other teams within DBE</p> <ul style="list-style-type: none"> • Other departments within the City Corporation (Chamberlain's, City Police, Comptroller and City 				

<i>Option Summary</i>	<i>Option I</i>	<i>Option II</i>	<i>Option III</i>	<i>Option IV</i>	<i>Option V</i>
consultees	Solicitor's, Town Clerk's) <ul style="list-style-type: none"> • Transport for London • Greater London Authority • Road user groups • Accessibility groups • Local residents and businesses and their workers. <p>An outline stakeholder engagement programme has been included in appendix 7</p>				
6. Benefits of option	<p>The options allow for the reallocation of road space to pedestrians, to help reduce pedestrian overcrowding, a key objective of the All Change at Bank project. Table 1 in appendix 5 shows the incremental changes prior to, and after the Bank on Safety footway widening scheme, which is currently under construction. It also shows the proposed additional areas of newly created pedestrian spaces for each of the All Change at Bank options in this report.</p> <p>The locations where pedestrian congestion levels are predicted to be the highest around the main body of the Junction, are along Princess Street (W), Threadneedle Street (N), Mansion House Street (N&S on the eastern end of the street) and Poultry (N). The expected pedestrian comfort levels, based on 2019 pedestrian counts and following completion of the Bank on Safety work, are shown in table 2 appendix 5 for reference. Additional pedestrian analysis will be undertaken during the next stage, to work towards achieving the Transport Strategy aims for comfort levels of B+ as a minimum standard</p>				
	Options I to IV allow for maximum tightening of the junction geometry, helping to reduce casualties by simplifying the junction and slowing vehicle movements in the areas with the most pedestrians.				Option V does tighten the geometry of the junction, but to a lesser extent.
	Option I is the only option that potentially provides additional	Option II potentially provides additional footway space at two	Option III provides additional footway space at two of the	Option IV potentially provides additional footway space at two	Option V potentially provides additional footway space at one

Option Summary	Option I	Option II	Option III	Option IV	Option V
	<p>footway space at the three locations where pedestrian congestion levels are the highest:</p> <p>a) Princess St(W) b) Mansion House Street (S) c) Threadneedle Street (N)</p> <p>It is the only option that provides for additional footway space on Princess St.</p> <p>Options I, II and IV allow for access from Poultry for vehicles servicing St Mildred's Court.</p>	<p>of the locations where pedestrian congestion levels are the highest:</p> <p>a) Mansion House Street (S) b) Threadneedle Street (N)</p> <p>The only option that provides additional footway space on King William Street, though pedestrian flows are not considered an issue at this location under the current pedestrian patterns/flows. However, the new Bank Station Entrance on Cannon Street could change this, but further work on predicted flow increases needs to be undertaken to</p>	<p>locations where pedestrian congestion levels are the highest:</p> <p>a) Mansion House Street (S), b) Threadneedle Street (N)</p> <p>Along with option V potentially provides the highest amount of footway space on Mansion House Street (S).</p> <p>Options III and V, subject to further investigation, appear to be the most likely options where cyclists can be rerouted away from one of the closed arms (Poultry), and the space reallocated for pedestrian use/ place making opportunities.</p>	<p>of the locations where pedestrian congestion levels are the highest:</p> <p>a) Mansion House Street (S), b) Threadneedle Street (N)</p> <p>Option IV is the only two arm closure option, making the potential to mitigate against increased journey times more likely for this option.</p>	<p>of the locations where pedestrian congestion levels are the highest:</p> <p>a) Mansion House Street (S)</p> <p>Along with option III, provides the potential for the highest amount of footway space on Mansion House Street (S).</p> <p>Option V is the only option that retains servicing to Cornhill, via Threadneedle Street, thus preventing the need for serving vehicles to pass through the junction.</p> <p>Option V provides the maximum footway space of all the options, on the south side of</p>

<i>Option Summary</i>	<i>Option I</i>	<i>Option II</i>	<i>Option III</i>	<i>Option IV</i>	<i>Option V</i>
		understand this further.			Cornhill/ Bank junction to help facilitate with pedestrian movements to the east which is expected to increase as the cluster grows. Options III and V, subject to further investigation, appear to be the most likely options where cyclists can be rerouted away from one of the closed arms (Poultry), and the space reallocated for pedestrian use/ place making opportunities
7. Disbenefits of option	Vehicles currently service local businesses in Cornhill via Threadneedle Street. The closure of Threadneedle Street in options one to four would require servicing vehicles to travel through Bank Junction. How this operated would need to be established in the next stage of the design and whether this was something which could be managed to avoid peak pedestrian and cyclist times of day investigated.				Due to the servicing of business on Cornhill, via Threadneedle Street, this option retains the greatest amount of carriageway space at the junction to allow

<i>Option Summary</i>	<i>Option I</i>	<i>Option II</i>	<i>Option III</i>	<i>Option IV</i>	<i>Option V</i>
					the required turning circles for large vehicles. This limits opportunities to improve the look and feel of the eastern side of the main junction.

Option Summary	Option I	Option II	Option III	Option IV	Option V
	Options I, II, III and V are all three arm closure options, making the potential to mitigate against increased journey times more difficult for these options.	Options I, II, III and V are all three arm closure options, making the potential to mitigate against increased journey times more difficult for these options.	Options I, II, III and V are all three arm closure options, making the potential to mitigate against increased journey times more difficult for these options. For options III and V the serving of Mildred's Court, whilst not frequent, would require vehicles to manoeuvre along cycling tracks on Poultry and Queen Victoria Street. leading to potential conflict with cyclists.	Options I, II, III and V are all three arm closure options, making the potential to mitigate against increased journey times more difficult for these options.	For options III and V the serving of Mildred's Court, whilst not frequent, would require vehicles to manoeuvre along cycling tracks on Poultry and Queen Victoria Street. leading to potential conflict with cyclists.

Resource Implications					
8. Total estimated cost	<p>Likely cost range Two of the five options have been estimated with the smallest area change to the largest. Estimated costs for other changes for mitigation have also been included, excluding for Option II changes to Monument Junction which at this stage are not understood and not proposed to proceed with.</p> <p>This gives a likely cost range of between £5 and £5.6million in total (inclusive of spend to date to completion) for the recommended Options I, IV and V at this stage. Funding has been secured up to £5.6 million</p> <p>There may also be a cost owed to London Buses for diverting and/or delaying services. This has yet to be determined.</p>				
9. Funding strategy	<p>To date the project has been funded by S106 contributions from developments in the local area as well as some Transport for London Funding. This funding will see the project through to the Gateway 4 reporting stage.</p> <p>Whichever option is taken forward at Gateway 4 will be funded from a £4m allocation of Capital funding agreed through the annual bid process which started in December 2019 (and any remaining S106 funds already approved not utilised to reach G4). This £4m is to cover detailed design, consultation, construction package and build.</p> <p>There may be opportunities to bid for further funding from external sources, possibly internal sources; however the project team are working on the basis that the £4m is the ceiling limit and are working on the principle that the proposals at the Gateway 4 will be deliverable within the existing budget envelope. This is likely to mean that function dominates the design, whilst creating spaces that could alter be improved in terms of public realm and place making at a later opportunity.</p> <p>It is expected that it may be difficult to deliver change using a continuous palette of high quality materials throughout the project area with the agreed budget limits, but that this does not mean that the functionality of what we are aiming to achieve is not possible.</p>				
10. Investment	<p>No investment appraisal methodology is proposed to compare the functional changes of the five options.</p>				

<i>Option Summary</i>	<i>Option I</i>	<i>Option II</i>	<i>Option III</i>	<i>Option IV</i>	<i>Option V</i>
appraisal					
11. Estimated capital value/return	At this stage it is not believed that there will be a physical capital return on the investment to the Corporation. The return is in improved safety and environment which contributes to the Corporate plan outcomes 1, 9, 11 and 12				
12. Ongoing revenue implications	At this stage without looking at the way in which the junction will operate in the future it is not possible to quantify the revenue implications as the revised junction will not require the same level of enforcement measures in the future with a number of arms closed. There is likely to be a maintenance implication, but the scale of this will be dependent upon the choice of materials in the detailed design.				
13. Affordability	£5.6million is secured through a £4m Capital Bid and approximately 1.6m S106 and TfL allocations (which have already been spent and claimed) since the project was initiated.				
14. Legal implications	<p>The project team have taken legal advice from the Comptroller and City Solicitor team regarding the City's powers as Traffic Authority to implement changes to traffic. The advice is that as traffic authority, the City Corporation has wide powers under the Road Traffic Regulation Act 1984 to prescribe routes to be followed by traffic (or by any class or classes of traffic), and to prescribe streets which are not to be used for traffic by vehicles (or by vehicles of any specified class or classes). Any restrictions can be implemented either generally or between any specified times.</p> <p>When making decisions, the City Corporation must have due regard to the need to eliminate unlawful conduct under the Equality Act 2010, the need to advance equality of opportunity and the need to foster good relations between persons who share a protected characteristic and those who do not (the public sector equality duty). It is the intention that an Equality Analysis will be carried out as work moves forward, and this will assist the City Corporation in discharging this duty.</p>				
15. Corporate property	At Bank, the Corporation has some property interest. The options may require altered servicing in some cases but will not impact the integrity of the properties. The improved junction area should enhance the setting of the listed				

<i>Option Summary</i>	<i>Option I</i>	<i>Option II</i>	<i>Option III</i>	<i>Option IV</i>	<i>Option V</i>
implications	buildings.				
16. Traffic implications	Feasibility traffic modelling has been undertaken on the five options, and the probable impacts on journey times are shown in more detail in appendix 9. In summary, option IV is predicted to have the least impact on journey times for buses and general traffic during peak hours. Both options I and V had similar predicted impacts on journey times as each other but were worse than option IV. Options II and III had similar impacts on journey times as each other and are the worst of all the options for traffic implications.				
	<p>-In the am and pm peaks, southbound movement on St Martin's-le-Grand is forecast to become congested due to bus routes being diverted along this street with Princes Street being closed.</p> <p>-In the pm peak, eastbound approach on London Wall/ Wormwood Street to the junction with Bishopsgate experiences congestion due to</p>	<p>-In the am peak, the northbound approach from London Bridge to the Monument junction is forecast to be congested.</p> <p>The junction already operates at capacity, this option changes the distribution of buses through the junction. This is because the buses that currently proceed from London Bridge to King William Street</p>	<p>-In the am peak, the eastbound approach to Monument on Cannon Street experiences additional congestion due to routes being diverted eastbound on Cannon Street as both Poultry and Queen Victoria Street are closed in this option.</p> <p>-In the pm peak, this same approach is expected to be even busier and unable to</p>	<p>-In the am peak, the northbound approach (London Bridge) to the Monument junction experiences additional delay due to a bus route being diverted from King William Street to Bishopsgate. This reduces capacity on this approach.</p> <p>-In the pm peak, eastbound approach on London Wall/ Wormwood Street to the junction with</p>	<p>-In the am peak, the eastbound approach to Monument on Cannon Street experiences additional congestion due to routes being diverted eastbound on Cannon Street as both Poultry and Queen Victoria Street are closed in this option.</p> <p>-In the pm peak, this same approach is expected to be even busier and</p>

<i>Option Summary</i>	<i>Option I</i>	<i>Option II</i>	<i>Option III</i>	<i>Option IV</i>	<i>Option V</i>
	<p>the bus diversions. It is assumed that these buses use the stop nearest to the junction, which exacerbates the queuing.</p>	<p>are diverted to go up Bishopsgate. This change means that all northbound buses all use the middle and right lanes to go to Bishopsgate. This would create queues and delays if existing traffic levels are maintained.</p>	<p>clear through the Monument Junction because the junction is working at its capacity.</p> <p>The impact of this extends beyond Cannon Street as it is forecast that congestion would impact the New Change/ Cannon Street junction. Therefore vehicles (particularly buses) are unable to turn left form New Change into Cannon Street. It is possible this would then lead to traffic queuing back to Newgate Street gyratory.</p> <p>-The eastbound</p>	<p>Bishopsgate experiences congestion due to the bus diversions. It is assumed that these buses use the stop nearest to the junction, which exacerbates the queuing.</p>	<p>unable to clear through the Monument Junction because the junction is working at its capacity.</p> <p>The impact of this extends beyond Cannon Street as it is forecast that congestion would impact the New Change/ Cannon Street junction. Therefore vehicles (particularly buses) are unable to turn left form New Change into Cannon Street. It is possible this would then lead to traffic queuing back to Newgate Street gyratory.</p> <p>The eastbound</p>

Option Summary	Option I	Option II	Option III	Option IV	Option V
			<p>approach on London Wall/ Wormwood Street to the junction with Bishopsgate experiences congestion due to the bus diversions. It is assumed that these buses use the stop nearest to the junction, which exacerbates the queuing.</p>		<p>approach on London Wall/ Wormwood Street to the junction with Bishopsgate experiences congestion due to the bus diversions. It is assumed that these buses use the stop nearest to the junction, which exacerbates the queuing.</p>
	<p>Conclusions:</p> <p>The provisional results show that the Monument Junction is likely to be the major capacity constraint on the network. The options where northbound buses over London Bridge are diverted from King William Street to Bishopsgate are forecast to cause significant delays to buses and general traffic in the AM peak hour. The options where buses are diverted eastbound on Cannon Street are forecast to generate queues and delays that extend along Cannon Street and impact on to the Newgate Street gyratory. This is most acute in the PM peak, but does affect the am peak as well.</p>				
17. Sustainability and energy	<i>N/A at this stage. Detailed design will address this.</i>				

<i>Option Summary</i>	<i>Option I</i>	<i>Option II</i>	<i>Option III</i>	<i>Option IV</i>	<i>Option V</i>
implications					
18. IS implications	N/A				
19. Equality Impact Assessment	<p>The test of relevance which is in Appendix 6 has highlighted that a full Equality Analysis will need to be undertaken. At this stage it is possible that changes could impact negatively, as well positively on some protected characteristic groups of people. A more detailed analysis will be undertaken for the G4 with a final version on the final proposal being submitted with the Gateway 5 report. It is the intention to work with groups to try and design out issues as we progress and the implications of the options are developed.</p>				
20. Data Protection Impact Assessment	N/A				
21. Recommendation	<i>Recommended</i>	<i>Not recommended</i>	<i>Not recommended</i>	<i>Recommended</i>	<i>Recommended</i>