

Committees:	Dates:
Corporate Projects Board	25.06.2018
Projects Sub-Committee	18.07.2018
Planning and Transportation Committee	26.07.2018
Subject: Gateway 1 – 4 Project Proposal and Options Appraisal London Bridge Waterproofing and Bearing Replacement	Public
Report of: Director of the Built Environment Report Author: Trina deSilva	For Decision

Recommendations

1. Approval track and next Gateway	Approval track: 2. Regular Next Gateway: Gateway 5 – Authority to Start Work (Regular)																											
2. Resource requirements to reach next Gateway	<table border="1"> <thead> <tr> <th>Item</th><th>Reason</th><th>Cost (£)</th><th>Funding Source</th></tr> </thead> <tbody> <tr> <td>Preparation of Specification for works – AECOM</td><td>To enable works tender</td><td>25,000</td><td>Bridge House Estate</td></tr> <tr> <td>Early Contractor Involvement to ensure the design is buildable Contractor</td><td>To enable works tender</td><td>35,000</td><td>Bridge House Estate</td></tr> <tr> <td>Quantity Surveyor</td><td>Evaluation of costs and procurement routes</td><td>12,000</td><td>Bridge House Estate</td></tr> <tr> <td>Staff Costs</td><td></td><td>12,000</td><td>Bridge House Estate</td></tr> <tr> <td>Total</td><td></td><td>84,000</td><td></td></tr> </tbody> </table> <p>AECOM (our term consultant for the Thames Crossings) have provided a quotation to complete the works specification. A</p>				Item	Reason	Cost (£)	Funding Source	Preparation of Specification for works – AECOM	To enable works tender	25,000	Bridge House Estate	Early Contractor Involvement to ensure the design is buildable Contractor	To enable works tender	35,000	Bridge House Estate	Quantity Surveyor	Evaluation of costs and procurement routes	12,000	Bridge House Estate	Staff Costs		12,000	Bridge House Estate	Total		84,000	
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	<p>price has been obtained from a bearing replacement contractor for Early Contractor Involvement (ECI), to ensure the buildability of AECOM's design. An additional allowance has been included for a main contractor's involvement in the ECI. An estimate of time and staff charge rates has been used to estimate internal costs at £12,000, and the total works cost is estimated at £5 million. Funds have been allocated for these works in the Bridge House Estates 50 year plan.</p>
3. Next steps	<p>Instruct AECOM, under the Thames Crossings term consultancy contract, to prepare a specification for the replacement of the bearings and waterproofing at London Bridge. This engagement will be under the existing term consultancy contract. Engage a specialist bearing replacement contractor to complete the works specification in conjunction with AECOM. This will be under the existing term contractor's contract with JB Riney.</p> <p>This report covers gateways 1 – 4. As it is a replacement project, there are limited options of how the work is completed, and they are determined by the conditions on site. It is recommended that approval of the procurement process is delegated to Chief Officer. A report will be prepared for committee approval at Gateway 5, before any work starts on site.</p> <p><u>Recommendations</u></p> <ul style="list-style-type: none"> • Approve spend of £84,000 from the Bridge House Estates Funds to appoint AECOM (term consultants) and a bearing replacement contractor to prepare a specification for the bearing and waterproofing replacement. • Approval of the procurement strategy is delegated to Chief Officer in conjunction with the Chamberlain.

Project Summary

4. Context	<p>London Bridge was constructed in the early 1970s. The joints on the bridge were replaced in 2010. The waterproofing layer to the bridge is overdue for renewal. The waterproofing is planned to be renewed every 40 years. The biennial bridge inspections have identified problems with water ingress, but replacement of the waterproofing layer has been delayed over the last couple of years to avoid conflict with the road closures for works to London Bridge Station. The bridge inspections also identified defects in the bridge bearings, and replacement of the bearings has been recommended.</p> <p>This project will prevent further water ingress to the bridge and protect it from structural degradation.</p>
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5. Brief description of project	<p>Works to be carried out are:</p> <ul style="list-style-type: none"> • Renewal of the waterproofing to the bridge • Replacement of bearings at north and south abutments • Sealing of ducts in bridge pavement to prevent leaks and avoid corrosion of pre-stressing anchorages • Locating and sealing water ingress points around services <p>Access to the bearings is severely restricted. There will be enabling works required (creation of a new access to the north abutment) to allow the bearing replacement works. It is recommended that a contractor is involved in the specification of the project to minimise risk and so that the scope of the enabling works is correctly defined. It is proposed that AECOM are appointed to produce the works specification, and a contractor (probably JB Riney) is employed to review AECOM's design and ensure a contractor would be able to build it.</p>
6. Consequences if project not approved	<p>If water ingress continues, this allows corrosion of the structure, which is particularly concerning around the pre-stressing cable anchorages.</p> <p>In the extreme case, corrosion around these anchorages could result in loosening of one end of the cable and failure of the structure.</p>
7. SMART objectives	<p>Replace waterproofing and reduce water seepage through the structure</p> <p>Replace bearings</p> <p>Complete all works by winter 2019. This programme is based on the works needing to be tendered following the EU tender rules.</p>
8. Success criteria	<ul style="list-style-type: none"> • No further leakage through the structure. No risk to stability of the structure from further leakage and corrosion. • No risk to bridge movement (expansion/contraction) from further deterioration of the bearing plates or the bearings themselves. • Repairs completed on time and to budget. • Minimised traffic disruption.
9. Key Benefits	<p>Reduced leakage will ensure the safety of the structure.</p> <p>Repair of the bearings will ensure the structure can articulate without stress.</p>
10. Notable exclusions	N/A.

11. Governance arrangements	Spending Committee: Planning and Transportation Committee Senior Responsible Officer: Paul Monaghan The project does not require a project board.
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Prioritisation

12. Link to Strategic Aims	2. To provide modern, efficient and high quality local services and policing within the Square Mile for workers, residents and visitors with a view to delivering sustainable outcomes
13. Links to existing strategies, programmes and projects	This work is additional to the routine annual maintenance of the Thames Crossings.
14. Project category	7b. Major renewals, typically of a one-off nature (supplementary revenue)
15. Project priority	A. Essential

Options Appraisal

16. Overview of options	The project is replacement of the waterproofing and bearings on London Bridge. As a replacement job, there are limited options and they will be determined by the circumstances on site. For example – a waterproof membrane or spray-applied waterproofing system could be used, the choice of which (or possibly use of both) will be determined by the number and arrangement of services. For this reason, an options appraisal matrix has not been included in the report. A specification for the works will be put together by our term consultants, AECOM, in conjunction a contractor appointed for the pre-construction phase. This will clarify what enabling works are required to replace the bearings and minimise risks at construction stage.
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Project Planning

17. Programme and key dates	Overall programme: 6 months on site Key dates: July – October 2018: Preparation of Specification November 2018 – July 2019: Works Tender (Conservative assessment of timescales, based on completing an EU-rules tender) August 2019 – January 2020: Works on site
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	<p>Other works dates to coordinate:</p> <p>Co-ordination with construction works at London Bridge Railway Station and Thames Tideway will be necessary. The works have not been able to go ahead so far because of closures at Tooley St. Unfortunately, it will not be possible to combine these works with the emergency gas works currently in place at Monument Junction, as those works will be completed by July.</p>
18. Risk implications	<p>Overall project risk: Green</p> <p>Project risks:</p> <ul style="list-style-type: none"> • Obtaining lane closures when required – Transport for London may restrict the amount of the bridge that can be closed at any one time. Early Contractor Involvement will allow liaison with TfL during the design. • Damage to services during jacking
19. Stakeholders and consultees	<p>Approvals for lane closures will be necessary from Transport for London.</p> <p>Statutory Authorities will be notified of the works, to ensure they can mitigate the effects of jacking the bridge, if necessary.</p> <p>The occupants of the bridge abutments (the Gun Club and the Gym) will be notified of the works. ECI with the bearing replacement contractor is recommended to ensure disruption to the Gym is avoided during the works.</p> <p>An equalities 'Test of Relevance' has been undertaken and no Equality Impact Assessment is considered necessary.</p>

Resource Implications

20. Total estimated cost	<p>Likely cost range:</p> <p>2. £250k to £5m</p> <p>The works are estimated to cost £5,000,000.</p>
21. Funding strategy	<p>This project is already included in the Thames Crossings 50 year plan. A sum of £2.8 million has been included over the next two financial years. £84,000 of this is now required to progress this scheme.</p> <p>The cost of the works is likely to be higher than the levels stated in the 50 year plan. The Thames Crossings 50 year plan will be amended to meet these additional costs.</p>
22. On-going revenue implications	None.

23. Investment appraisal	Not applicable.
24. Procurement strategy/Route to Market	<p>AECOM, the Thames Crossings term consultant, will be engaged to provide a specification for the works in conjunction with a contractor involved for the pre-construction phase of works.</p> <p>The works will be tendered by City Procurement in accordance with the City's Procurement Rules.</p> <p>The procurement strategy will be agreed with City Procurement and recommended in a subsequent Gateway report. It is recommended that the approval of the procurement strategy is delegated for Chief Officer approval.</p>
25. Legal implications	None.
26. Corporate property implications	<p>Access will be needed through the South Abutment of the bridge. This access is shared with the Gun Club.</p> <p>Access to the north abutment is currently either through a manhole in the pavement or through Fitness First. An alternative access to avoid going through the gym will be explored.</p>
27. Traffic implications	The waterproofing works will require lane closures. The timing of this will need to be agreed with Transport for London. TfL may require that we pay lane rental for the lane closures needed.
28. Sustainability and energy implications	None.
29. IS implications	None.
30. Equality Impact Assessment	An equalities 'Test of Relevance' has been undertaken and no adverse impacts have been identified. Therefore, no Equality Impact Assessment is considered necessary.

Appendices

Appendix 1	Photos
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Contact

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Appendix 1 – Photos



Photo 1: Cracked and broken top plate on bearing at south abutment



Photo 2: Staining due to water ingress around service duct.



Photo 3: Water ingress from a duct in the southern half-joint