

Committees: Corporate Projects Board <i>[for information]</i> Planning and Transportation Committee <i>[for decision]</i> Markets Board <i>[for information]</i> Projects and Procurement Sub Committee <i>[for information]</i>	Dates: 08 October 2025 21 October 2025 06 November 2025 18 November 2025
Subject: Pipe Subways of Holborn Viaduct and Snow Hill over Thameslink Unique Project Identifier: 9845	Gateway 4 Complex Issue Report
Report of: Executive Director of Environment Department Report Author: Jagdeep Bilkhu	For Information
PUBLIC	

1. Status update	Project Description: Refurbishment/maintenance/replacement to extend the life of existing structures and to mitigate the Corporation's risk from third party claims. RAG Status: Amber (Amber at last report to Committee) Risk Status: Medium (Medium at last report to committee) Total Estimated Cost of Project (excluding risk): £2,862,000 Change in Total Estimated Cost of Project (excluding risk): Increase of £196,000 since last report to Committee in Oct 2019. Spend to Date: £305,000 Costed Risk Provision Utilised: Zero Slippage: This scheme has been delayed since 2020 giving priority to the City Corporation's major scheme of re-locating the Museum of London (MOL) to its new home in Smithfield Market. The previous focus has been on the refurbishment of structures 33/18, 33/22 and 33/23 around the market and working collaboratively with colleagues on the MOL Tunnels Lids project
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	(see plan contained in Appendix 2 showing these structure locations).												
2. Requested decisions	Next Gateway: Gateway 5 - Authority to Start Work (Light) Requested Decisions: 1. That an additional budget of £196,000 is approved for Gateway 4 to allow for analytical work to be carried out; 2. Note the total estimated cost of the project at £2,862,000 (excluding risk) up from £2,666,000 reported in September 2019; 3. That a Costed Risk Provision (CRP) of £135,000 is approved (to be drawn down via delegation to Paul Monaghan, Assistant Director Engineering). 4. That the recommended option in 5.2 is agreed.												
3. Budget	3.1 Members are advised that City of London have applied for external funding in the sum of £196,000 to Transport for London via the bidding mechanism of the London Bridges Engineering Group (LoBEG). Limited funding is made available to all London boroughs through this bidding process for highway structures that are maintainable at public expense. Funding for carrying out structural assessments, particularly for structures that are over railway, are bus routes or strategically important highways should feature highly in the bidding process. Unfortunately, despite meeting the aforementioned criteria, LoBEG have confirmed that the City Corporation were unsuccessful on this occasion with our bid for funding. 3.2 A Costed Risk Provision at Gateway 4 of £75,000 was agreed in September 2019. The CPR requested herein of £135,000 is inclusive of the previously agreed CPR which is still considered to be required, therefore an additional CRP of £60,000 is requested. <table><tr><th>Item</th><th>Reason</th><th>Funds/ Source of Funding</th><th>Cost (£)</th></tr><tr><td>Consultant Fees</td><td>Detailed modelling and assessment work.</td><td>On-Street Parking Reserve (OSPR)</td><td>40,000</td></tr><tr><td>Contractor Costs</td><td>For surveys and investigations to support detailed</td><td>OSPR</td><td>96,000</td></tr></table>	Item	Reason	Funds/ Source of Funding	Cost (£)	Consultant Fees	Detailed modelling and assessment work.	On-Street Parking Reserve (OSPR)	40,000	Contractor Costs	For surveys and investigations to support detailed	OSPR	96,000
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		modelling and assessment.		
	Staff Fees		OSPR	10,000
	Network Rail Basic Asset Protection Agreement	Agreement with Network Rail for access on to their land to conduct surveys and investigations.	OSPR	50,000
	Total			196,000
Costed Risk Provision requested for this Gateway: £135,000 (as detailed in the Risk Register – Appendix 1)				
4. Issue description	4.1 All the pipe subways that are the subject of this project have been found to have weak roof elements that fail for accidental wheel loading. Since the inception of the project, other remedial works to keep the pipe subways in a good state of repair have become necessary, including concrete and metal repairs, as well as undertaking waterproofing. <u>Snow Hill Pipe Subway</u> 4.2 Following the Gateway 4 report dated Oct 2019, the project has progressed by completing a design for the pipe subways traversing over the railway and present under both the footways on Snow Hill, collectively known as structure number 33/P11 (see Appendix 2 for location plan). 4.3 Both these pipe subways comprise a relatively simple structural form, i.e. wrought iron buckle plates forming the roof that supports the footway, which in turn are supported on steel girders that form the walls of each pipe subway. The base of the pipe subways are steel joists encased in concrete. These two pipe subways have seen some, but no major modification to them since they were constructed, circa 1860s. <u>Holborn Viaduct Pipe Subways</u> 4.4 The pipe subways on Holborn Viaduct do not have a fully completed design, unlike Snow Hill Pipe Subway. 4.5 These pipe subways traverse also the railway and support the footways on Holborn Viaduct and are known independently as structure numbers 33/P12 and 33/P13			

	in the north and south footways respectively. They are more complex in their structural form than those on Snow Hill. 4.6 They contain a higher number of utilities, which are supported in a more complicated manner inside the subways, some of which are hung on a steel gantry that is suspended from the roof of the subways. The roof itself has been modified over the years and comprises not one, but several different structural elements that form the deck as well as the side walls of the pipe subways. 4.7 The primary deck elements are 3no.wrought iron girders. The two outer girders are supported upon lattice girders. The base slabs are beams encased in concrete. The portion of these subways over the railway could be described as a miscellany of different elements. There are also further beams that support a skin of masonry on the outer face (on the railway side). It is not clear why this detail was constructed. There are also further beams on both the north and south side that support the footway just adjacent to the 3no. wrought iron girders that form the roof of the subways. All of these elements in some way provide support or share load from the highway, mainly the footway. 4.8 In progressing the design of these two pipe subways, the consultant has identified possible reserve capacity from interconnected elements that may potentially have a load sharing effect. 4.9 It is proposed to use 3-D computer modelling software to structurally analyse the form of the subway in a holistic manner rather than rely on the assessment of individual elements in the way that has been done previously. This has the advantage of understanding how interconnected elements share load between each other based on various loading scenarios. Ultimately, this could result in elements that were previously deemed to fail, actually having more capacity than previous calculated. Consequently, the option for remediation could change to refurbishment or strengthening rather than replacement of specific elements. 4.10 The above would also allow the capture of the existing condition, which could have deteriorated, into the assessment.
5. Options	5.1 Continue to finalise the design for the Holborn Viaduct subways without further modelling and assessment, basing the design on limited information for some elements. This could mean more elements may need strengthening or replacement when exposed during the

	construction stage. This approach could impact the programme and increase risk to the works over the railway by adding more complexity to the construction works. 5.2 Undertake further assessment that would help understand the capacity of elements for which no such information is available. Help reduce the possibility of having to strengthening or replace some elements, and in doing so potentially de-risk the project by needing to manage more complicated works over the railway. This is the recommended option.
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Appendices

Appendix 1	Risk Register
Appendix 2	Plan showing location of structures over railway corridor

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