



City of Westminster

Cabinet Member Report

Decision Maker:	Cabinet Member for City Management & Air Quality
Date:	12 December 2022
Classification:	For General Release
Title:	Piccadilly Road Underpass Ventilation Fans – Stage 1 – Design and Interim Safety Measures
Wards Affected:	Knightsbridge & Belgravia, West End, St James's
Policy Context:	The planned works will help to deliver a well-managed, high-quality streetscape whilst protecting and enhancing Westminster's unique heritage.
Key Decision:	Yes – affects more than one Ward
Financial Summary:	<p>The gross expenditure in respect of designing and implementing urgent safety measures is £4,250,000 of which £890,000 has previously been approved under Delegated Authority. Financial approval of £3,360,000 is therefore sought in this report.</p> <p>Provision of £4,569,000 for the scheme is fully contained within the Council's approved capital programme for 2022/23.</p>
Report of:	Amy Jones, Director of Environment

1. Executive Summary

- 1.1. This report seeks approval for the design and implementation of urgent safety measures in the Piccadilly Road Underpass. The work in this report is Phase 1 of the overall work required to replace the fans in the tunnel. A further report will be issued in 2023/24 which will encompass Phase 2 of the works to complete the design and installation of the existing ventilation fans which are nearing the end of their serviceable life.
- 1.2 Council Officers, working with appointed consultants and contractors, have been developing options for replacing the original 1960's ventilation fans for the tunnel with modern equivalents.
- 1.3 The existing fans perform a pollution control function only, i.e. they were never designed to control smoke in the event of a fire in the tunnel, any modern replacement fans however would need to perform pollution and smoke control functions. The smoke control function employs sensors to understand the location of any fire, and consequently direct smoke away from persons evacuating the tunnel on foot. It should be noted that although the existing fans were not designed to perform a smoke control function, the fans would still operate as sensors would detect smoke as pollution.
- 1.4 A smoke test carried out in November 2021 identified a risk with the exist tunnel fans whereby the fans when activated, could direct smoke over persons trying to escape the depending on the fire location, thus potentially hampering attempts to escape.
- 1.5 To mitigate this risk, officers recommended that certain measures were put into effect immediately, this included reducing the traffic lanes in both tunnel bores from two to one and reducing traffic speed to 20mph. This recommendation was approved by the Cabinet Member for City Management in December 2021, the recommendations and approval are attached to this Cabinet Member Report in Appendix A.
- 1.6 Further urgent interim safety measures were also recommended, these include:
 - The banning of vehicles carrying hazardous goods
 - Design & install a CCTV to allow the Council's Service Provider (FM Conway) to remotely view the tunnel via the internet and view any incident in the tunnel quickly.
 - Design & install a linear heat detection system with automatic alerts to the Council's Service Provider.
 - Design & install a Public Address and Voice Alarm (PAVA) system to alert drivers to evacuate the tunnel immediately.
 - Install new road safety signage in the tunnel and its approaches
- 1.7. Although these interventions could be installed alongside the main fan replacement work in Phase 2), the fan replacement works are unlikely to be

fully delivered until Autumn/Winter 2023/4. This report therefore recommends that the measures in Section 1.6 above be undertaken as soon as possible to achieve interim operating conditions which are as safe as possible until the fans are replaced.

2. Recommendations

- 2.1 It is the recommendation of this report that Cabinet Member for City Management & Air Quality approves the design & implementation of the further urgent interim safety measures identified in Section 1.6 of this report at a total estimated gross cost of **£4,250,000**, of which £890,000 has been approved previously under a Delegated Authority Report, as detailed in Section 5 of this report.

3. Reasons for Decision

- 2.2 Having identified a potential evacuation risk to users of the Piccadilly Underpass in the event of a fire in the underpass, it is essential that the Council does all it reasonably can to implement the recommended urgent interim safety measures as soon as reasonably practicable to minimise the risk to tunnel users and improve safety.
- 2.3 Implementing these urgent interim safety measures improves the safety for tunnel users and reduces the Council's risk exposure.
- 2.4 The urgent interim safety measures have been recommended by the Council's Tunnel Safety Officer (TSO) and Tunnel Manager (TM). These are both statutory roles in accordance with tunnel safety regulations, their decision takes into account recommendations from current fire regulations.
- 2.5 Failure to implement these measures could result in a recommendation that the tunnel is closed until the main scheme to replace the current ventilation fans is complete (Phase 2). These Phase 2 works are unlikely to be fully delivered until Autumn/Winter 2023/24.

4. Background, including Policy Context

- 2.6 The Piccadilly Road Underpass was built in the 1960's and takes two lanes of traffic in either direction under Hyde Park Corner linking Piccadilly and Knightsbridge. The existing tunnel ventilation fans are original from the 1960's, they operate automatically and ventilate the tunnel when pollution sensors detect that pollution levels inside the tunnel have risen above recommended levels.
- 2.7 Plans are being drawn up to replace the existing fans which are nearing the end of their serviceable life. To meet modern design standards, the replacement fans will have a smoke control function as well as a pollution control function, smoke control is essential in the event of a fire to direct smoke in the opposite direction to persons escaping the tunnel on foot.
- 2.8 In order to inform the design for smoke control, it is necessary to understand how smoke in the tunnel would dissipate naturally (without forced ventilation)

and how smoke is dissipated once the existing fans are triggered to mimic what would happen in a real fire event. In November 2021 a test was carried out mimicking fire scenarios at various locations in the.

- 2.9 The existing fan arrangement is for pollution control only, when pollution levels reach a certain threshold, the fans are activated. The polluted air is drawn to the centre of the tunnel and exhausted out of the top of the Wellington Arch on Hyde Park Corner.
- 2.10 In the event of a fire, the fans would be activated as the pollution sensors in the tunnel would recognise smoke as pollution. Analysis of the smoke test results indicated that if a fire were to occur at certain locations in the tunnel under the current fan configuration, it could result in smoke being directed towards drivers and passengers trying to evacuate the tunnel on foot as the existing fans will always direct pollution/smoke to the centre of the tunnel where the point of extraction is.
- 2.11 Once this risk was fully understood, steps were undertaken to minimise the risk of a collision by reducing the traffic lanes in both tunnel bores from two lanes to one lane and reducing speeds to 20mph. This measure not only reduces the number of vehicles in the tunnel in the event of a fire by approximately 50% and therefore reduces exposure to the risk by having fewer people in the tunnel, the spare lane also provides a clear evacuation path inside the tunnel by utilising the non-traffic lane as a dedicated evacuation route.
- 2.12 Further urgent interim safety measures are recommended as detailed in Section 1.6 of this report.
- 2.13 If the urgent interim safety measures are not implemented, it could result in a closure of the tunnel until the new replacement fans and other safety features are implemented in late 2023.
- 2.14 A Tunnel Evacuation Plan has been prepared and is currently being evaluated. The plan is based upon single traffic lanes in both tunnel bores.
- 2.15 The final decision/recommendation to make the Piccadilly Underpass permanently a single traffic lane in both directions will be made in the follow up report which will seek approval to implement the replacement of the existing life expired fans with modern jet fan equivalents (Phase 2).

Implementing the Phase 1 Work

- 2.16 To implement the measures listed in 1.6 it will be necessary to close one tunnel bore at a time. The intention is to maintain traffic flows in both directions in the other bore i.e. traffic will operate under contraflow conditions.
- 2.17 Similar work carried out in recent years has adopted the same contraflow traffic management regime where it has worked successfully. The final traffic management design will require the approval of TfL.

5. Financial Implications

5.1 The financial implications in this report cover the following for the scheme:

- Stage 1 - Feasibility
- Stage 2 - Initial Design of the Phase 1 Urgent Safety Measures
- Stage 3 – Detailed Design of the Urgent Safety Measures
- Stage 4 – Tender Stage
- Stage 5 – Implementation of Urgent Safety Measures onl

5.2 A further Cabinet Member report will be prepared in 2023/24 for the **Phase 2** works as previously described in Section 1.1 of this report.

5.3 The works within each of the stages in Section 5.1 above are collectively referred to as **Piccadilly Road Underpass Phase 1 – Design & Implementation of Urgent Interim Safety Measures**. The table below summarises the costs required for Phase 1.

Description	Estimated Cost
Stage 1 - Feasibility	
Including: <ul style="list-style-type: none">• Fan replacement options studies• Jet Fan Feasibility Study• Contract F, Compliance and Audit	£265,000
Stage 2 – Initial Design	
Including: <ul style="list-style-type: none">• Re-Tendering Costs• Smoke Test• Smoke dissipation modelling• Initial Design & Project Management Support Costs• Plant room cabling investigations• Evacuation Strategy• Risk assessments and Operational Manual• Single Lane Traffic Modelling	£835,000

Stage 3 – Detailed Design	
<ul style="list-style-type: none"> • Design & Project Management • Contract F, Compliance & Audit Support 	INCLUDED
Stage 4 – Tender Process	
Included	
Stage 5 – Implementation (of additional Urgent Safety Measures)	
<ul style="list-style-type: none"> • Design and Installation of: <ul style="list-style-type: none"> ○ Fire detection equipment, ○ CCTV ○ Public Address system. ○ Removal of redundant electrical equipment ○ UPS Batteries & Wayfinding lighting ○ Drainage modifications from DSEAR (Dangerous Substances and Explosive Atmosphere Regulations) study ○ Replacement of Security Doors ○ Signalling and lighting to implement evacuation strategy ○ Hydrant Signs 	£2,600,000
Total	£3,700,000
Risk @ 7.5%	£275,000
Contingency @ 7.5%	£275,000
Grand Total	£4,250,000
Less previously approved	£890,000
Amount for approval	£3,360,000

5.4 This report seeks approval for expenditure of **£3,360,000** (including a combined 15% allowance for risk and contingency), which can be met from provision within the capital programme for Bridges and Structures.

5.5 Expenditure of £890,000 has previously been approved under a Delegated Authority Report dated 21st June 2021, refer to Appendix B.

- 5.6 It should be noted that the Council own the digital media screens above the tunnel portals, the screens are licensed to Global Outdoor who pay the Council a fee of £700k per annum for the rights to display third party commercial advertising at the site. The Phase 1 (and Phase2) work are likely to impact on these annual revenues.
- 5.7 Whilst any commercial impact won't be determined until the full scale and duration of the works/tunnel closures are confirmed, a reduction to the current license fee is expected due to the operational and visual impacts that the works will have on the site.
- 5.8 Officers anticipate that Global will look to revisit the current arrangement whereby they are wholly liable for business rates associated with the screens which is circa £900,000 per annum.

6. Legal Implications

- 5.9 The Council, as local highway authority, has a duty under the Highways Act 1980 to ensure the effective maintenance and management of the Council's highway and highway assets (including bridges & structures), and that they remain safe and effective.
- 5.10 The proposal for the feasibility and design of the age expired ventilation fans in the Piccadilly Underpass and the design & implementation of the Phase 1 urgent interim safety measures will help discharge the Council of its duty in this respect.
- 5.11 Legal Services (ref: Isaac Carter) has reviewed this report and is satisfied that the proposed measures are consistent with 6.1 and 6.2 above.

7. Carbon Impact

- 5.12 A carbon emissions calculation using the 'Cost-Based Carbon Assessment' in the Council's Carbon Impact Evaluation Tool (CIET) has estimated that the carbon emissions from the scheme could be in the order of 1,500 Tonnes of CO₂e.
- 5.13 During the design and delivery phase of the scheme, the project team will attempt to drive down carbon emissions by considering low carbon materials choices where possible and reducing carbon emissions at an operational level by eliminating diesel as much as possible, electrifying plant and equipment and reducing transportation distances by sourcing construction materials and equipment as locally as possible.
- 5.14 The carbon impact of the scheme will be monitored throughout the design and implementation phases of the scheme are recorded in the carbon calculation tool.

8. Equalities Impact

- 5.1 An Equality Impact Assessment (EQIA) has been completed for this scheme and issued to the EQIA Team.
- 5.2 The result of the EQIA analysis was that the work proposed in the tunnel did not affect people with protected characteristics and a full detailed impact assessment is not required.

9. Consultation

The Piccadilly Road Underpass is on the boundary of the Knightsbridge & Belgravia, St James's Ward, and West End Wards. All three wards have been briefed on the contents of the Cabinet Member Report, minor comments were received from St James's Ward requesting a second set of traffic counts for the single traffic lanes in both directions of the tunnel which have been in place since December 2021.

If you have any queries about this Report or wish to inspect any of the Background Papers, please contact:

**Andy Foster on 07885 3997653 or email
afoster1@westminster.gov.uk.**

APPENDICES

Appendix A – Briefing Note for the approval of Urgent interim safety measures
December 2021

Appendix B – Delegated Authority Approval for Feasibility and Design – June 2021

BACKGROUND PAPERS

None

NB: For individual Cabinet Member reports only

For completion by the **Cabinet Member for City Management & Air Quality**

Declaration of Interest

I have <no interest to declare / to declare an interest> in respect of this report

Signed:  Date: 12/12/22

Cllr Paul Dimoldenberg, Cabinet Member for City Management & Air Quality

NAME: **Cllr Paul Dimoldenberg**

State nature of interest if any:

(N.B: If you have an interest, you should seek advice as to whether it is appropriate to make a decision in relation to this matter)

For the reasons set out above, I agree the recommendation(s) in the report entitled

Piccadilly Road Underpass Ventilation Fans – Stage 1 – Design and Interim Safety Measures and reject any alternative options which are referred to but not recommended.

Signed:



Cabinet Member for **Councillor Paul Dimoldenberg, Cabinet Member for City Management & Air Quality**

Date: _____

If you have any additional comment which you would want actioned in connection with your decision you should discuss this with the report author and then set out your comment below before the report and this pro-forma is returned to the Secretariat for processing.

Additional comment:

If you do not wish to approve the recommendations, or wish to make an alternative decision, it is important that you consult the report author, the Director of Law, City Treasurer and, if there are resources implications, the Director of People Services (or their representatives) so that (1) you can be made aware of any further relevant considerations that you should take into account before making the decision and (2) your reasons for the decision can be properly identified and recorded, as required by law.

Note to Cabinet Member: Your decision will now be published and copied to the Members of the relevant Policy & Scrutiny Committee. If the decision falls within the criteria for call-in, it will not be implemented until five working days have elapsed from publication to allow the Policy and Scrutiny Committee to decide whether it wishes to call the matter in.