

Committee(s)	Dated:
Port Health and Environmental Services	23 rd July 2019
Subject: Update on the issue of operational rail noise from London Underground affecting the Barbican Estate.	Public
Report of: Director of Markets and Consumer Protection	For Decision (PHES)
Report author: Rachel Pye, Assistant Director, Public Protection.	

Summary

Operational rail noise from London Underground Limited (LUL) sub-surface Circle, Hammersmith and City and Metropolitan lines running beneath the Barbican Estate, between Barbican and Moorgate Stations and whilst some improvements have been achieved, it continues to affect residents of the Barbican Estate.

The importance of this as a public health issue is recognised and officers commissioned an independent investigation and subsequent report which has been put to LUL and a response received.

The response is presented here and will be used to inform further discussions with LUL as to when mitigation measures may be implemented to gain a reduction in the noise and vibration experienced.

This work meets the key aims of the City's Noise Strategy 2016 to 2026 and the Corporate Plan outcome 'People enjoy good health and wellbeing'.

Recommendation

The contents of this report be noted and that the further actions in paragraphs 16 to 19 be endorsed.

Main Report

Background

1. Parts of the Barbican Estate, specifically Brandon Mews, Defoe House and Lambert Jones Mews are affected by noise and vibration generated by London Underground trains running on the Circle, Hammersmith and City and Metropolitan Lines between Moorgate and Barbican Stations.
2. Vibration created by LUL train services propagates through the ground and surrounding structures and results in the vibration of floors, walls and ceilings, this can be heard as a low frequency 'rumbling' sound.

3. The effects of noise and vibration from the railway were considered when the existing railway was realigned and enclosed in 1965; historical records show that mitigation in the form of separation to the railway and the Barbican structure and the placing of the precast deck on rubber blocks was part of the design.
4. Complaints however, began to emerge in the late 1970's and there is written evidence of complaints and subsequent noise studies dating back to the 1990s in LUL and City archives.
5. More recently residents are reporting an increase in the noise and vibration experienced and a number of previously unaffected properties have raised complaints.
6. City officers have been in discussion with LUL for some time to determine the level and extent of the disturbing noise and vibration, the primary causes and an examination of measures that could be implemented to mitigate it.
7. The Chairmen of Port Health and Environmental Services (PHES) and Planning and Transportation Committee's raised the issue of operational train noise in July 2016, November 2017 and again in July 2018 in letters to Mark Wild, the Managing Director of London Underground. Positive responses were received and LUL have shown a positive attitude to date in resolving the matter.
8. Whilst improvements have been secured by activities such as rail grinding and partial ballast track replacement; and issues with construction noise on the running tunnels and stations have now been resolved, the disturbance from operational rail noise under the Barbican remains caused in part by rail discontinuities, joints and points.
9. To assist the investigation the City appointed independent expert consultancy, Cole Jarman to review the work undertaken to date, carry out independent measurements and present suggestions in a report as to what mitigation measures might be available in order to mitigate the effects of the operational railway on Barbican residents.
10. This report was presented to LUL in December 2018 and a response received in January 2019. The response lacked the technical rigour expected by the PHES committee and officers pressed for a more detailed response in a meeting with the Head of Track, Duncan Weir on 11th March. The issues that remained to be resolved are detailed in Appendix 1 and Duncan Weir's detailed response is held in Appendix 2.

Mitigation Commitments from LUL

11. A number of commitments have been received from LUL that it is hoped will have a positive effect on the noise and vibration received by residents, and are summarised below:
 - 156m of eastbound ballast track renewal between Barbican and Moorgate is proposed for the weekend of 12th July, it is hoped this will lead to a further reduction to Defoe House residents. Noise and vibration

monitoring will be carried out by LUL before and after these works to demonstrate any improvement, the results will be reported back to this committee when available. The westbound ballast track renewal was carried out in September 2018 and a noise reduction of 8dB achieved.

- A target date for the signalling upgrade has been confirmed as 2021 and subsequent to this the rail joints are between Moorgate and Barbican will be removed as they will no longer be required.

Outstanding issues

12. LUL have advised that in terms of groundborne vibration, complaints over 50dB are considered severe, it is the City's view that this does not answer the question posed as to what level could be considered a reasonable threshold. The description of the approach taken to prioritising complaints outlined in Duncan Weir's letter does not provide comfort that a structured and equitable process is employed.
13. LUL have provided an engineering view as to the effectiveness of ballast matting in noise reduction but have not provided the requested technical evidence to support their views and this will now be sought.
14. The issue of the points and crossings located directly beneath Brandon Mews remains in that LUL have confirmed that the points are required to be retained for routine service management.
15. The response advises that a temporary speed restriction under the Barbican may result in wheel slip and that this could lead to higher noise levels. It is not clear why lower speed is associated with wheel slip and why wheel slip is associated with higher noise levels. Clarification on this matter will be sought.

Further Actions

16. LUL have committed to undertaking further measurements in properties previously assessed to better understand quantitatively the reduction in noise levels provided by the new section of eastbound track. City officers will review these measurements once complete.
17. LUL have committed to a quarterly Residents Transport Forum to enable liaison between residents and LUL on matters related to the underground railways including Crossrail. The next forum meeting is to be held on 22nd July and Duncan Weir has committed to attend and discuss these matters with residents in person.
18. The Barbican Estate are reviewing the mitigating option of ensuring the space between the running tunnels structure and the Barbican structure is clear of any bridging and have carried out an initial scoping exercise to consider the ownership, feasibility, and funding implications of carrying out the works. The outcome of LUL's commitments detailed above will be considered alongside the information already gathered.

19. City officers supported by Cole Jarman Associates will continue to work closely with LUL and press for improvements to the noise and vibration experienced by residents of the Barbican Estate including seeking clarity on the outstanding issues, the expeditious approval of works to facilitate the signalling upgrade programme and revisiting the necessity for the points and crossings to remain located under Brandon Mews.
20. I propose that, subject to comments received, the above actions are progressed.

Financial Implications

21. The consultant costs of the investigation have been funded from underspend in the Port Health and Public Protection Service budgets.
22. The financial implications for the London Underground of implementing any mitigation measures are considered and detailed in Duncan Weir's response in Appendix 2.

Corporate and Strategic Implications

23. The work on noise supports the aims and objectives of the City of London Noise Strategy 2016 to 2026 and the key Corporate Plan outcome: 'People enjoy good health and wellbeing'.

Conclusion

24. The City Corporation has carried out an investigation to determine the level and extent of the operational rail noise affecting the Barbican Estate.
25. A report on the primary causes and recommendations as to what measures can be implemented to mitigate it has been produced and provided to LUL for their consideration and a response has been received.
26. The response does make some positive commitments which are welcomed; however, it does not meet expectations in that it does not contain the robust technical detailed responses that were expected.
27. Officers continue to meet LUL and lobby for noise and vibration mitigation to be considered and implemented.

Background Papers

Update on the issue of operational rail noise from London Underground affecting the Barbican Estate September 2018

Measurement and mitigation options for operational rail noise from London Underground affecting the Barbican Estate January 2019

Appendix 1

Cole Jarman: Barbican Estate, LUL Noise and Vibration request for detailed response 19.03.19

Appendix 2

Duncan Weir response – Barbican Tube Noise June 2019

Contact:

Rachel Pye

Rachel.pye@cityoflondon.gov.uk

020 7332 3313