

Committee(s)	Dated:
Port Health and Environmental Services	24 th September 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 Information (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 continues to affect residents and is considered a public health issue. Whilst some improvements have been achieved, further mitigation works were completed in July and August 2019 and the measured results of the effects are awaited.

LUL's Head of Track delivered a presentation and took questions on the issue at the Transport for London (TfL) and City of London (COL) Stakeholder Transport Forum in July which included members, officers and residents and agreed a further set of actions, including further investigations and mitigation.

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.

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. 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.
8. 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. This has been invaluable in understanding the issues and focussing the discussions.
9. Detailed responses have been received from LUL's Head of Track, Duncan Weir and discussions have continued with members, officers and residents at the TfL and COL Stakeholder Transport Forum on the 22nd July
10. The presentation slides from the TfL and COL Stakeholder Transport Forum are shown in Appendix 1, the minutes are in Appendix 2 which contains detailed costings for moving the Brandon Mews Crossover.
11. The Chairman of PHES's subsequently confirmed the agreed action points in a letter to Duncan Weir on the 24th July and these are held in Appendix 3.

Mitigation Actions and Commitments from LUL

12. A number of actions and commitments have been carried out and confirmed by LUL that it is hoped will have a positive effect on the noise and vibration experienced by residents, and are summarised below:
 - 156m of eastbound ballast track renewal between Barbican and Moorgate was carried out on the weekend of 12th July, it is hoped this has led to a further reduction to Defoe House residents. Noise and vibration monitoring has been 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.

- TfL have examined the current condition of points and crossings under the Barbican Estate to ensure they are operating in an optimum condition to minimize noise and vibration as a result works to pack ballast under rail joints under Defoe House and the points and crossings under Brandon Mews were carried out on the 6th and 7th August. This consisted of lifting the sleepers and tightly packing the ballast beneath the sleepers to reduce the movement when trains run over them. Noise and vibration monitoring has been carried out by LUL before and after these works to demonstrate any improvement, the results will be reported back to this committee when available.
- 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.
- The full cost breakdown to LUL for moving the Brandon Mews Crossover have been confirmed and are detailed on page 9 of appendix 2 and total £5,719,730
- Longer periods of noise and vibration monitoring (minimum one-week continuous duration) has been committed to take place in residential properties affected by noise, e.g. in Brandon Mews.
- LUL have committed to confirm the number of uses of the crossover other than for regular operational use (two movements per week), from a historic perspective, to establish the anticipated level of use during operating difficulties.
- LUL have committed undertake a detailed investigation of a Temporary Speed Limit whilst traversing the crossover, to examine both noise/vibration issues and operational implications including any additional costs.
- 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 in the autumn and LUL representatives have committed to attend and discuss these matters with residents in person.

Further Actions

13. City officers will review progress with the commitments detailed above and report progress these to this committee.

14. 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.

Financial Implications

15. The consultant costs of the investigation have been funded from underspend in the Port Health and Public Protection Service budgets.
16. The full financial implications for the London Underground of moving the Brandon Mews Crossover are detailed on page 9 of appendix 2 and total £5,719,730.

Corporate and Strategic Implications

17. 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

18. The City Corporation has carried out an investigation to determine the level and extent of the operational rail noise affecting the Barbican Estate.
19. 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.
20. LUL have undertaken some mitigation works in the form of ballast track renewal and subsequent ballast packing; noise and vibration monitoring results are awaited so that the effects of these interventions can be quantified and understood.
21. A further written response from Duncan Weir to the Chairman of PHES is awaited and costs to move the Brandon Mews Crossover have been supplied.
22. 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

Update on the issue of operational rail noise from London Underground affecting the Barbican Estate July 2019

Appendix 1

TFL Stakeholder Forum presentation slides 22nd July 2019

Appendix 2

TFL Stakeholder Forum Minutes 22nd July 2019

Appendix 3

Chairman of PHES letter to Duncan Weir – Barbican Tube Noise 24th July 2019

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