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Dear Rachel,

Following our meeting in March where we discussed our initial response to Cole Jarman's Barbican Track report, I have been working with colleagues across TfL to provide answers to the additional questions that were raised. Unfortunately this process took a lot longer than I had originally anticipated, so please accept my apologies for the delay but I do hope the below information provides clarity to you and members of the Port Health and Environmental Services Committee.

Defoe House

What were the elements of the ballasted track renewal that took place on the inner rail under Defoe House in September 2018 that led to a noise reduction of 8dB?

The combination of the new ballast, sleepers, rails and joints all improved the rail support and led to the reduction in noise. At the time of writing and subject to City of London approval, we will be carrying out the same works to the rail opposite in July 2019. We hope these works may lead to a further reduction in noise and vibration transmitted to Defoe House.

If there was no similar intervention on the outer line, can TfL confirm whether the associated noise reduction of 3 dB for trains operating on that line is likely to be within the repeatable measurement range rather than an unknown consequence of the works to the outer line?

This could be due to the improved support on the inner road. There is no physical divide between the roads so the new ballast on the inner road may have improved the outer road too.

Signalling Renewal

Can the timeline for the signalling upgrade be confirmed?

We are working towards implementing the new timetable as soon as possible but 2021 still remains our target date.

Can TfL confirm that no rail joints between Barbican and Moorgate stations will be required for signalling purposes as a result of the upgrade and existing joints will be removed?

I can confirm that no insulated rail joints between Barbican and Moorgate stations will be required after the 4LM Programme goes live and, as I indicated in my response in December, we will also look to remove the insulated rail joints along the this part of the track when we're able to do so.

Thresholds

The letter states that there are no legal limits on the amount of noise that can be emitted from trains operating on existing railways, and decibel levels are not applied to noise complaints. Can TfL offer their own insights into what levels might constitute a trigger for treating a noise complaint as being worthy of quantitative investigation or mitigation?

We treat each case on a site by site basis. In terms of groundborne vibration, complaints over 50dB are considered severe.

Can TfL confirm the approach taken to prioritising which sections of the track should benefit works when complaints are made?

We prioritise based on in-property noise level and the number of complaints (of an appropriate noise level). We introduced this process and decision making to ensure a fair and consistent method of prioritising where best to direct our resources.

Ballast Mat

Setting aside the issue of cost, it is indicated on the last page of the letter that the introduction of track matting would have little to no effect. What technical evidence can be supplied by TfL to support this statement?

It remains our engineering view that while a ballast mat may provide some noise reduction, it would not be significant in this location given the nature of the noise (impulsive noise generated over Points & Crossings or insulated rail joints) and design of the Barbican Estate's foundations.

Brandon Mews

It is indicated on the last page of the letter that replacing the bull head rail and timber sleepers (with flat bottomed rail on concrete sleepers) would in all likelihood not reduce the noise. Since this is exactly the change that led to the 8 dB noise level reduction under Defoe House can TfL be clearer on why this would be ineffective beneath Brandon Mews?

The mechanism of vibration creation is different at both locations. At Defoe House, the noise was caused by a rail joint which was dipping, and creating impulses. Improving the support conditions prevent the dipping and have a positive impact. At Brandon Mews, a track renewal would not eliminate the impulse as the points and crossing by design have gaps and joints that train wheels pass over.

The points and crossings located directly beneath Brandon Mews are considered to be the overriding feature of the track in this area that leads to high levels of noise and vibration. Can TfL confirm that they will consider seriously whether their removal is a viable proposition given that they are not required on a day to day operational basis?

Our Service Control Team have confirmed that we need to retain all points at the eastern end of the line, as Moorgate bay roads need to be available on a daily basis for routine service management issues. Removing them would cause serious reliability issues for the entire Sub Surface Railway.

Additional information requested

In addition to the above questions, I also received a request from Councilman Adrian Bastow and a Barbican resident to provide a response to the following questions:

Is it possible for TfL to implement a Temporary Speed Restriction (TSR) underneath the Barbican Estate?

The 4LM track that has been laid has been designed to achieve a more frequent service at a faster speed. Lowering the speed limit underneath the Barbican could cause the wheels to slip and impact the level of noise, possibly increasing it. A temporary speed restriction could also prolong the period of time for which residents experience a disturbance.

Indicative costings for installing trackmatting per sq metre?

As mentioned above, in July we are planning to renew 156 metres of the eastbound track between Barbican and Moorgate, beneath Defoe House. The vast majority of this track sits on floating track slab. As confirmed to Dawn Patel,

using track matting on top of the floating track would introduce too much flexibility onto the track. We are therefore unable to use it.

The cost of the track renewal work on that one section of 156m track is in excess of £750,000. This covers Labour and materials. In isolation, the track matting for this this location would cost approximately £4,000.

Indicative costings for relocating the points and crossings away from residential properties just outside Moorgate station?

As mentioned above, it costs over £750,000 to lift and renew 156m of track. We would expect significant additional costs to relocate points and crossings as we would need to:

- Remove the old crossing
- Build a new crossing
- Substantially modify the crossing's control system
- Train our staff on the change

We would also need to consider the impact that any closures would have on the rest of the transport network and the associated cost implications.

Conclusion

I hope that my response assists the City of London Corporation in understanding what we can do to reduce noise and vibration experienced by residents. We will continue to share information with the City of London Corporation and respond to residents reports of noise and vibration. I'm also planning to attend TfL's City of London Stakeholder Transport Forum on 22nd July, where I will provide an update on TfL's current position and take questions from attendees.

Yours sincerely



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