Customer, Sustainability and Operations Panel

Date: **28 November 2024**

Item: **TfL Action to Identify and Manage Physical Climate Risks**

This paper will be considered in public

1 Summary

1.1 This paper sets out TfL's work to understand its physical climate risks ahead of the publication of TfL's fourth submission to the Department for Environment, Food and Rural Affairs (Defra) under the Adaptation Reporting Power (ARP4) in December 2024. A draft version of the ARP4 Non-Technical Summary will be shared with the Panel in advance of the meeting.

2 Recommendation

2.1 **The Panel is asked to note the paper.**

3 Background

3.1 Experience shows that TfL has generally been able to recover quickly from severe weather events, such as snow and rainfall: this is known as resilience. However, London's climate conditions are changing, and we are already seeing an increase in the frequency and intensity of severe weather events. This is affecting our assets, colleagues, and customers.

3.2 If we continue to focus primarily on recovery-based activities, we will see greater service disruption, revenue loss and risk health and safety impacts. That is why TfL is working on adapting to climate change, including extreme weather: by reducing the impacts of climate change (for example, by installing flood barriers and Sustainable Drainage Systems (SuDS)), we will spend less time in recovery (such as pumping out floodwater, cleaning flooded stations, and repairing damaged assets).

3.3 Unlike climate change mitigation, which has targets for net zero carbon, there is no 'end-point' for climate change adaptation, and there are no nationally agreed targets or metrics. This contributes to building an evidence-based business case for investment in adaptation challenging. Adding to the challenge is the generally poor data available on how weather currently affects our assets and services.

3.4 While there are no national targets or metrics for climate change adaptation, TfL is subject to mandatory annual reporting of its physical climate risks as part of reporting under the International Financial Reporting Standards. This is facilitated by TfL's voluntary submissions to Defra under the Adaptation Reporting Power (ARP), which is meant to be on a five-year cycle to inform the national climate change risk assessment.

3.5 TfL's last ARP submission was under the 2021 (ARP3) reporting round. The next is due in December 2024 (ARP4): the shortened timeline is due to delays in the 2021 round, which meant the reporting cycle was out of kilter with the national climate change risk assessment timeline. Because of this, Defra advised that organisations who reported under ARP3 would only be required to provide a light-touch update, rather than a comprehensive new assessment.

4 TfL's physical climate risks

4.1 TfL's understanding of its physical climate risks is derived through workshops with internal subject matter experts, asset managers and engineers, as well as liaison with relevant external organisations, such as Network Rail. Importantly, our risk assessment includes impacts to people (colleagues and customers). More information will be included in the Non-Technical Summary to our forthcoming ARP4 submission.

4.2 ARP3 identified 333 physical climate risks and this has increased for ARP4 to 477 risks. It is important to note that this does not mean that TfL's exposure or vulnerability to climate change has increased since ARP3, but is instead due to additional business areas being included (such as London Transport Museum and the Elizabeth line) and greater awareness of the potential impacts of certain climate hazards (such as wildfire, following the 2022 heatwave).

4.3 The majority (52 per cent) of the risks are related to precipitation, both too much and too little, followed by temperature (32 per cent), both too high and too low. Rail and London Underground are the business areas with the greatest number of risks identified. Across each climate hazard category and business area, risk severity is predicted to increase over time between now, the 2050s and the 2080s.

4.4 Climate hazards do not respect organisational boundaries, and transport networks are reliant on third party infrastructure, such as power and comms. Yet the transport sector's understanding of these interdependencies is limited. Consequently, TfL commissioned work to better understand upstream and downstream interdependencies, which has received positive feedback from transport sector stakeholders, Defra, the Department for Transport and the Office of Rail and Road. TfL also worked with the boroughs to, for the first time, understand physical climate risks for London's road network as a whole. Both of these projects identified actions that we are exploring how to take forward with other transport sector stakeholders.

5 Risk and assurance

5.1 TfL's Enterprise Risk Management Framework (ERMF) provides a consistent and structured approach for managing risks across TfL. This provides assurance to the Executive Committee and Board that risks are being managed throughout TfL, in line with corporate risk tolerance and appetite. The risk management hierarchy describes the levels at which risk is managed throughout the organisation. Risks are managed at three levels, which include, Level 0 (Enterprise), Level 1 (Strategic) and Level 2 (Tactical).

5.2 Physical climate risks are considered at each level in the hierarchy:

(a) Level 0 Enterprise Risk 3: Environment including climate adaptation (ER03);
(b) Level 1 (there are six Green Level 1 risks in total) GRN-01: Failure to adapt our assets and operations to a changing climate;
(c) Level 2: work has been undertaken to identify and tag those Level 2 risks currently in TfL's Active Risk Manager software that are climate-related, though further work is required. A project is also underway to create summary risks from ARP4 data to integrate with the Level 2 risks.

5.3 While our adaptation actions are being developed, implemented, and embedded (see the following section), we are working with our Control Centre and Asset Operations colleagues to help bridge the gap between day-to-day resilience activities and longer-term climate change adaptation. For example, TfL's first exercise involving extreme heat (this was also the first exercise that considered multiple climate hazards) was held this summer.

5.4 Internal Audit has also conducted audits to evaluate the design and effectiveness of plans and activities to embed requirements for climate change adaptation and resilience into high-level governance and internal controls, and will continue this work at lower levels of TfL.

5.5 We are also working to explicitly capture the investment required for resilience (and, where known, adaptation) as part of our business planning process, and our Safety, Health and Environment Management System now includes a section on climate risk and adaptation that sets out responsibilities and resources for all parts of the value chain.

6 TfL's adaptation actions

6.1 A key area of interest for Defra as part of ARP4 submissions is the action taken to manage climate risks since ARP3.

6.2 In March 2023, TfL published its first Adaptation Plan, which sets out more than 50 short-, medium- and long-term actions to keep our staff and customers safe while providing sustainable, reliable and attractive services. The actions are split across six key themes, and examples of successfully completed or underway actions under these categories are included in Table 1.

Table 1: Adaptation Plan categories and examples of actions in each	
Leadership and governance	Continuing TfL's contribution to the development of the forthcoming London Surface Water Strategy, including part-funding new London-wide SuDS Opportunity Modelling
Organisation and people	Developed and piloted adaptation and green infrastructure training for our colleagues, to be rolled out in 2025
Risk management	Completion of Phase 3 of the London Comprehensive Review of Flood Risk
Information management	We have commissioned a project through Greater London Authority (GLA) Property to understand the GLA Family's tidal

	flood defence locations and, where possible, condition (results are due in 2025) We have almost completed a pilot project to include weather as a contributory factor into a London Underground incident reporting system (to improve our understanding of weather-related impacts), which will be in place in 2025
Capital and operational delivery	Met our Adaptation Plan SuDS target (an additional 5,000 sqm of SuDS catchment installed each year) two years in a row
Collaboration, communication and reporting	Collaborated with London's road and rail sector to better understand interdependencies for ARP and mandatory climate reporting

6.3 An update on the implementation of the Adaptation Plan in the two years since its publication will be brought to the meeting of the Panel on 13 March 2025. However, TfL's progress is reflected in the Rail Safety and Standards Board's recent assessment of change in rail sector adaptive capacity since 2023. TfL was identified as having progressed from Response Level 2 to 3 (of six), in comparison with average capacity level for organisations in the GB rail sector remaining at Response Level 2.

7 Conclusion

7.1 Climate change will affect every part of TfL. While there remains more to be done, over the past three years we have greatly increased our understanding of our physical climate risks and are making progress on embedding this understanding into our processes and decision-making. This is particularly important in the context of insurance, as that industry is changing rapidly in response to global weather-related catastrophes.

7.2 There is now more scrutiny than ever on TfL's work to understand and manage its physical climate risks, and ARP4 provides an excellent example of the leadership we are starting to demonstrate in this field. We welcome the Panel's thoughts on both this paper and the draft ARP4 Non-Technical Summary.

List of appendices to this report:

None

List of Background Papers:

Mayor's Transport Strategy
TfL Corporate Environment Plan
TfL Green Infrastructure & Biodiversity Plan
TfL Climate Change Adaptation Plan
Climate adaptation maturity in GB rail: 2024 (Report by the RSSB)

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