

CITY AIRPORT DEVELOPMENT PROGRAMME  
(CADP1) S73 APPLICATION

# ENVIRONMENTAL STATEMENT

VOLUME 2: APPENDICES  
DECEMBER 2022



Pell Frischmann

City Airport Development  
Programme (CADP1) S73  
Application

Volume 2: Appendices  
Appendix 13.2 Flood Management Plan  
December 2022



# FLOOD MANAGEMENT PLAN

**London City Airport**

Hartman Road, London, E16 2PX

HLEF83265  
Flood Management Plan  
001  
26/10/2022

## REPORT

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### Quality Management

Revision	Status	Authored by	Reviewed by	Approved by	Review date
001	Draft	Francesca Caggiano	Jonathan Morley	Jonathan Morley	26.10.22
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### Approval for issue

Jonathan Morley

26 October 2022

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Prepared for:

**RPS Consulting Services Ltd**

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# 1 INTRODUCTION

**A COPY OF THIS REPORT SHOULD BE MAINTAINED IN THE LONDON CITY AIRPORT PREMISES. ALL STAFF SHOULD BE BRIEFED ON THE CONTENTS AND PROCEDURES OF THIS REPORT**

- 1.1.1 The London City Airport (LCY) is located at National Grid Reference 542766, 180377. The site consists of an operational Airport and extends to an area of approximately 48.5 hectares which is mostly hardstanding except for the grass which surrounds the airfield. The site includes 7.54 ha of the King George V dock.
- 1.1.2 The site is located within the River Thames tidal floodplain whereby, if no defences were present, the site would be at risk from a tidal flood event which would be expected to occur, on average, more than once every 200 years. However, the site benefits from flood defences. The Thames Barrier, which is situated about 1 km south-west of the site, is part of a system of tidal defences that currently protect London. In addition, King George V Dock Gate and a series of tidal walls and embankments along the banks of River Thames also provide protection for the site. The design standard of protection of the flood defences in this area of the River Thames is 0.1% Annual Exceedance Probability (AEP); they are designed to defend London up to 1 in 1000 year tidal flood event. Therefore the flood risk to the site results only from a breach of the flood defences. The defences are currently classified by the Environment Agency as in a 'good' or 'fair' condition. Therefore, a breach or failure of the defences is unlikely to occur.
- 1.1.3 In the event of a breach, the maximum flood level at the site would be 5.11m AOD and 5.40m AOD during the 2115 epoch for the 1 in 200-year and 1 in 1000-year events respectively. However, most of the site, including the existing terminal building would remain unaffected during these events.
- 1.1.4 This Flood Management Plan has been produced to raise awareness of the potential flood risk in the unlikely event of a defence failure and to provide guidance regarding appropriate actions to be taken in the unlikely event of flooding or receipt of a flood warning for the site.
- 1.1.5 The site partially lies within the EA Flood Warning Area "Tidal Thames at Beckton", and this Flood Management Plan has been prepared on the basis that site management will sign up to receive the free flood warnings from the Environment Agency.
- 1.1.6 The aim of the Flood Management Plan is to provide an accessible document suitable for use by site management in the event of a flood. It is purposefully brief with an emphasis on clear graphical aids. A technical explanation of the flood risk and reasoning behind the evacuation procedure is provided in Appendix B.
- 1.1.7 The report should be considered a live document which will require regular review in accordance with any local changes in procedures. As a minimum an annual review should be undertaken by LCY Site Manager, along with a review following each evacuation undertaken.

**Instructions and procedures in the FMP should be disregarded if conflicting information is given by the Emergency Services in the event of flooding.**

## 2 FLOOD ACTION PLAN

### 2.1 Preparing for a Flood

- 2.1.1 The Site Manager should sign up to the free Flood Warnings Direct Service offered by the Environment Agency, specifically the Tidal Thames at Beckton Flood Warnings. They can sign up online (<https://www.gov.uk/sign-up-for-flood-warnings>) or by calling Floodline on 0345 988 1188. Warnings can be provided by telephone, mobile, email, SMS text message or fax. The recipient will be notified when flooding is expected which could affect the site.
- 2.2 Additionally, the site manager is advised to sign up online for the Met Office e-mail weather warnings (<https://service.govdelivery.com/accounts/UKMETOFFICE/subscriber/new>). This will give site users early warning of any heavy rainfall events.
- 2.1.1 A breach of the flood defences is not always predictable so there may be limited warning of such an event. However, a breach is more likely to occur when the tide is particularly high. It is anticipated that the Environment Agency can provide at least 12 hours warning of extreme tides (i.e. an event with a return period of 1 in 200 years or less). Significantly less warning is likely to be available of an impending breach of the defences. As there may not be time following receipt of a severe flood warning to safely evacuate the site should a breach occur, site users should seek refuge within the Terminal building (the building is not indicated to be affected by flooding should a breach occur). This safe refuge area is indicated in Appendix A of this report, it is set at 5.57m AOD and provides a sheltered location until floodwaters recede. Any flooding is expected to be short lived due to its tidal nature, so staff and passengers are unlikely to need to seek refuge for a significant length of time.
- 2.1.2 In the unlikely event of flooding occurring on site, the response will be co-ordinated by the emergency services as flooding would occur in the whole docklands area. Should this occur, it is advisable that site users remain on site, in the indicated safe refuge area, until the emergency services arrive as the site is at a lower flood hazard than surrounding roads. Considering the tidal nature of the flooding, it is expected to be of short duration (less than 12 hours), so occupants are unlikely to need to seek refuge for a significant length of time.
- 2.1.3 The EA has been consulted as part of this application through EA Pre-Planning advice. They have commented that a conservative estimate of data is used in the Flood Management Plan to ensure the evacuation of passengers in a breach scenario. Data from the original FRA at the site dated 2013 states that if the flood gate fails, it will take 2 hours for the docks to be inundated, and it would take between 2 and 13 hours for the surrounding to become inundated. This means that there will be sufficient time for people to evacuate upstairs in the terminal building from the lower areas.
- 2.1.4 It is recommended that the Site Manager prepares a number of 'Flood Kit' sets to be distributed amongst the staff in order to ensure that they have essential items in a readily accessible place to last them for a few hours if the wider area becomes surrounded by flood water. The following items are recommended for inclusion (these items should either be stored permanently in a central location in the Terminal building, or be collated and moved internally if flooding is imminent):
- Fully charged mobile phone;
  - Torch;
  - Spare batteries;
  - First aid kit;
  - Local council / emergency services contact numbers and local radio frequencies (see Section 4); and

- Any essential medication for staff members.
- 2.1.5 The Environment Agency has previously advised that they would issue a Flood Warning or Severe Flood Warning in the unlikely event that in-channel levels are forecast to exceed a pre-determined threshold. A Flood Warning or Severe Flood Warning could also be issued if a breach were to occur in the walls / embankments along the riverbank.
- 2.1.6 Information regarding the latest flood warning status can also be obtained via the following sources:
- The Environment Agency website: <https://flood-warning-information.service.gov.uk/warnings>
  - Calling the Environment Agency's Floodline on 0345 988 1188; and
  - Local television or radio.

## **2.2 If a Warning is Received**

- 2.2.1 The Environment Agency's flood warning service uses three types of warning, as described in the table in Annex A. The table includes actions to be taken upon receipt of each level of flood warning.

## **2.3 Responding to a flood warning – further information**

**The instructions of the Emergency Services over-ride any advice given within this plan and must be followed at all times.**

- 2.3.1 It should be noted that flooding could occur with no prior flood warnings issued. In this case, the emergency response will be co-ordinated by the Emergency Services, but seeking refuge in the Terminal building is advised whilst the emergency response is awaited.
- 2.3.2 Actions to be taken to respond to a flood warning event are described in the table in Annex A.

### 3 STAFF TRAINING

- 3.1.1 All staff should review this plan as part of their standard induction, and designated personnel should be appointed to co-ordinate any required evacuation off-site or to the safe refuge area (it is anticipated that responsibilities will be similar to a fire evacuation). As limited warning may be given of an impending breach flood event, it is important that all staff are aware of the flood risk and are prepared to react quickly if required.
- 3.1.2 Training should include:
- awareness of the potential for flooding;
  - the specific nature of the flood risk to the site – the low probability of flooding, but potential rapid inundation of surrounding areas in the event of a breach of the defences;
  - the method by which flood warnings will be received;
  - the location of the 'Flood Kit';
  - methods for communicating evacuation to staff and passengers; and
  - evacuation procedures.
- 3.1.3 Refresher training should be undertaken on an annual basis, or in the event that an evacuation has been undertaken (whichever occurs first).
- 3.1.4 An annual Flood Warning drill should be undertaken on site, to ensure that all staff members are rehearsed in the protocol should a warning be received.
- 3.1.5 London City Airport holds an internal Flood Emergency Response Plan which is reviewed if a flood occurs, or annually at a minimum. It includes a risk classification of specific infrastructures / assets within the site, potential consequences caused by flooding and risk classification. Additionally, it details measures to be taken by the team or their department. All staff should review this plan as part of their standard induction and every time it is updated.

## 4 USEFUL CONTACT INFORMATION

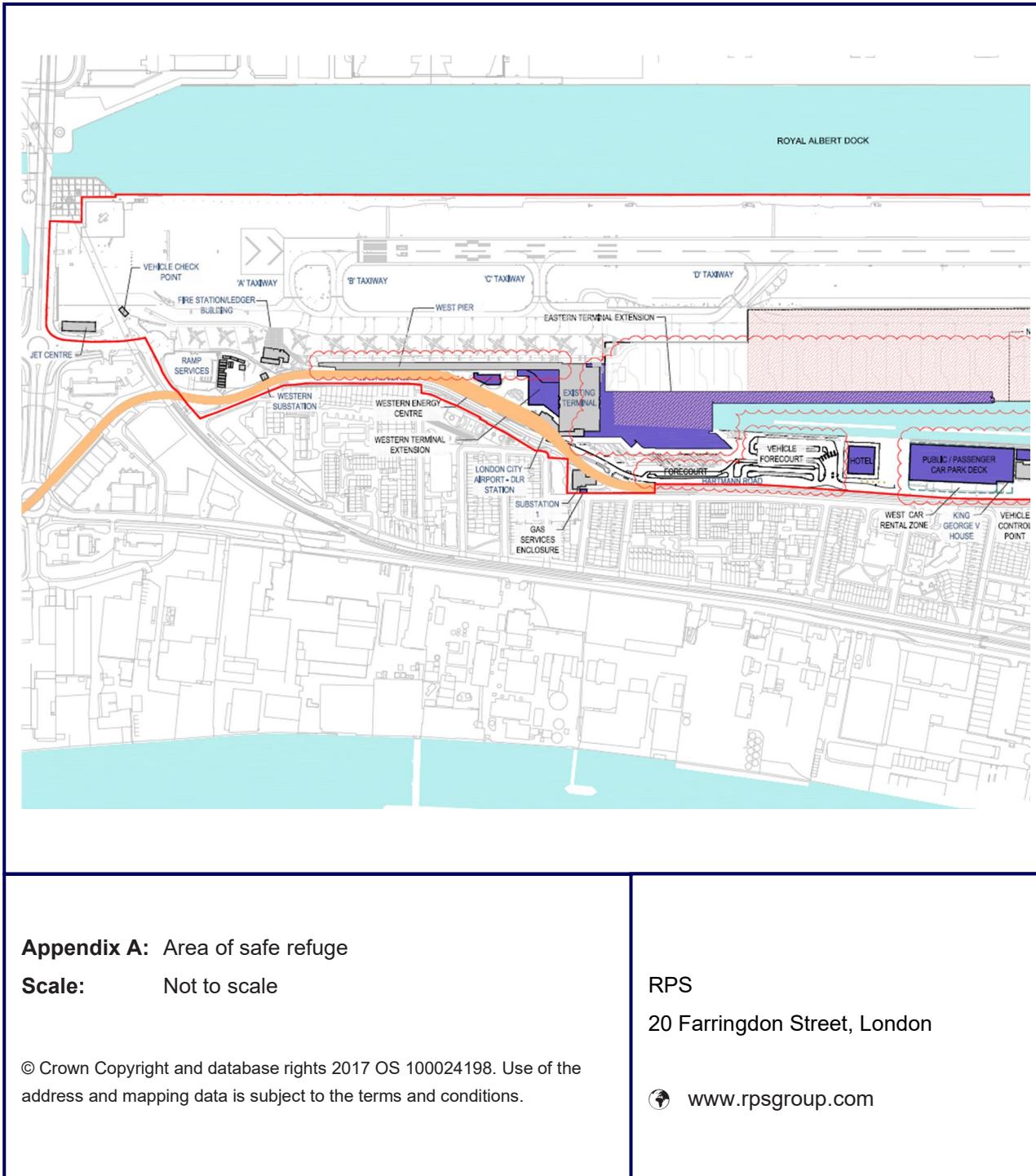
- 4.1 The following contacts may be of assistance in the event of flooding:

Contact	Details
<b>Emergency Services</b>	999
<b>Airport Duty Manager</b>	07590 486108
<b>EA Floodline</b>	0345 988 1188 (select option 1 and enter Quickdial number 174313)
Newham Borough Council Switchboard (Monday to Friday 9am – 6pm)	020 8430 2000
<b>Environment Agency</b>	03708 506 506
<b>If you smell gas</b>	0800 111 999
<b>Electricity provider</b>	0800 3163105
<b>Metropolitan Police non-emergency number</b>	101

## FIGURES AND APPENDICES

## Appendix A

## Safe Refuge Location



## Appendix B

### Technical Justification

- B.1 The National Planning Policy Framework (NPPF) requires that flood risk is appropriately managed for new developments so that they remain safe throughout their lifetime, taking climate change into account. Safe access and egress routes should be provided.
- B.2 The site is located within an area which could be impacted by tidal flooding from River Thames *if no defences were present*. The flood defences defend the site against an event which has an annual probability of 1 in 1000 (i.e. an unlikely but severe event). Therefore, whilst the flood defences are functioning properly, the likelihood of flooding is very low. Part of the site is at residual risk of flooding from breach of flood defences however the terminal building will remain flood free during all modelled scenarios.
- B.3 The Flood Risk Assessment supporting the Section 73 ‘minor- material amendment’ planning application at London City Airport (RPS report ref. HLEF83265) identifies that only part of the site is at residual risk from flooding should a breach of the defences occur (the existing terminal building would however remain flood free during all modelled scenarios). Surrounding roads would be inundated and may prevent safe access and egress from the site. However, given the tidal nature of the flood risk at the site, sufficient warning may be available in order to facilitate evacuation prior to flooding occurring. However, should a breach of the defences occur with little or no warning, site users can seek safe refuge within the Terminal Building on-site (as this would remain dry).
- B.4 The Site Manager will be registered with the Environment Agency’s Flood Warnings Direct service. Staff and passengers will seek refuge within the Terminal building on receipt of a Severe Flood Warning, or if flooding of the surrounding roads occurs unexpectedly (i.e. if a breach has occurred with no prior warning, or in the event of surface water flooding).
- B.5 The safe refuge area is considered appropriate given that it is designed to accommodate a significant number of customers and the majority would be within the Terminal building already.
- B.6 The approach of seeking refuge within the building is considered appropriate given the nature of tidal flooding: site users would only need seek refuge for a short period of time before the tide recedes and access is available again.

## **Appendix C**

### **Emergency Procedure**

## EMERGENCY PROCEDURE

Level of Alert	Warning Symbol	What it means	When it's used	What to do
Flood Alert		<p>Flooding is possible. Be prepared.</p>	<p>Two hours to two days in advance of flooding.</p>	<p>Listen to local radio () and watch local news for further information  Site management to call Floodline (0345 988 1188) to hear recorded flood warnings  Monitor the flood forecast on the Environment Agency website (updated every 15 minutes, 24 hours a day, 7 days a week)  Notify members of staff and passengers of possibility of evacuation  Consider the needs of any staff and passengers with mobility requirements  Have Flood Kit to hand in case of need to seek internal refuge if required (see Section 2.1)  Charge mobile phones</p>
Flood Warning		<p>Flooding is expected. Immediate action required.</p>	<p>Half an hour to one day in advance of flooding (likely at least 12 hours).</p>	<p>Follow local media coverage  Continue to monitor flood warning levels  Notify key staff members of imminent evacuation to Terminal building  Initiate evacuation to Terminal building  Check all external areas and smaller buildings are vacated</p>

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				If warning received outside of operational hours, notify staff by phone that the facility is closed and notify the public / passengers via website / text
Severe Flood Warning		Severe flooding. Danger to life.	When flooding poses a significant risk to life.	All site users to seek refuge in the Terminal building (see Appendix A) unless otherwise instructed by emergency services  Co-operate with emergency services  Site manager to act as central contact for liaison with emergency services  Call 999 if in immediate danger
Actual breach flooding event (with no prior warning)	N/A	Severe flooding Danger to life.	N/A	All site users to seek refuge in the Terminal building (see Appendix A) unless otherwise instructed by emergency services  Site manager to act as central contact for liaison with emergency services  Follow instructions of the emergency services  Call 999 if in immediate danger
Warnings No Longer in Force	None	No further flooding is currently expected in the area.	When river or sea conditions begin to return to normal.	If flooding has occurred, site to be inspected for safety prior to reoccupation  Call insurance company if site affected  Site management to consult utilities company before re-connecting services  Be aware of sharp objects or pollution in floodwaters

## **RPS HEALTH, SAFETY & ENVIRONMENT**

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### **General Notes**

The following notes should be read in conjunction with the report:

1. This report contains only that available factual data for the site, which was obtained from the sources, described in the text. These data were related to the site on the basis of the location information made available to RPS by the client.
2. The assessment of the site is based on information supplied by the client. Relevant information was also obtained from other sources.
3. The report reflects both the information provided to RPS in documents made available for review and the results of observations and consultations by RPS staff.
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