Gatwick Airport Northern Runway Project

Flood Compensation Delivery Plan Technical Note

Book 10

VERSION: 1.0

DATE: JUNE 2024

Application Document Ref: 10.42

PINS Reference Number: TR020005

APFP Regulations 5(2)(q) **Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009**

1 Introduction

1.1. Background

1.1.1 The Northern Runway Project (the Project) is primarily located within Flood Zone 1 (areas with a low probability of river or sea flooding) and has sought to minimise flood risk impacts but there are elements of the Project that are unavoidably located within Flood Zones 2 (medium probability) and 3 (high probability), see **ES Appendix 11.9.6 Flood Risk Assessment** (FRA) Figure 5.2.2 [AS-078]. Minimising the impact on flood risk has been a key factor in the design of the Project.

1.2. Purpose of this Technical Note

1.2.1 Throughout the Project a number of measures have been secured to minimise the impact of the Project on flood risk through the **draft DCO** [REP5-055]. These range from locations for particular developments and design principles, to specific flood compensation areas and are set out in Section 7 of the FRA [AS-078].

1.2.2 There are three specific works which are to mitigate impacts on fluvial flood risk which are collectively referred to as the "**Fluvial Mitigation Works**" in this Note:

- Work No. 31(b) and (c) constructing a flood compensation area at Car Park X
- Work No. 38(a) constructing a flood compensation area at the Museum Field Environmental Mitigation Area; and
- Work No. 39(a) - (c) and (e) works to divert and extend the course of the River Mole.

1.2.3 For the Fluvial Mitigation Works to be effective they need to be constructed in sequence with the works carried out in Flood Zone 2 and 3, as detailed in section 3.4 below (the "**Floodplain Works**"). The ES Appendix 5.3.3 Indicative Construction Sequencing [REP2-016] sets out at the proposed construction sequencing for the Project and DCO Requirement 2A requires additional detail of the phasing of construction to be provided to the JLAs and National Highways once the construction sequencing has been designed in detail and before the construction commences.

1.2.4 As the timing of the Fluvial Mitigation Works in relation to the Floodplain Works is sensitive, GAL has committed to prepare a specific "Flood Compensation Delivery Plan" (**FCDP**) which will set out the phasing of the Fluvial Mitigation Works directly in relation to the Floodplain Works (DCO Requirement 23). The FCDP must be submitted to and approved by West Sussex County Council in consultation with the Environment Agency before any of the Floodplain Works may commence and

Fluvial Mitigation Works must be delivered in accordance with the approved FCDP.

1.2.5 The Floodplain Works are listed in DCO Requirement 23 and explained below; as there are many smaller work packages the detailed sequencing of the delivery of these works has not been prepared for the submission of this outline application and hence GAL has committed to preparing an FCDP for later approval.

1.2.6 It is expected that the Fluvial Mitigation Works will all be delivered prior to the Floodplain Works becoming operational however there may be opportunities to maximise efficiency by carrying out some of the Floodplain Works earlier in the sequencing with only one or two of the Fluvial Mitigation Works being delivered at the same time. If this is to be the case, the FCDP will demonstrate the acceptability of this approach in the context of flood risk and this must be demonstrated to the satisfaction of West Sussex County Council in consultation with the Environment Agency.

1.2.7 In addition to the FCDP, GAL must hold a flood risk activities permit ("**FRAP**") from the Environment Agency to carry out the Floodplain Works. The FRAPs will set out the flood risk context of the works within the floodplain providing the evidence that the works will not increase flood risk to other parties and how the Applicant intends to undertake the works.

1.2.8 GAL has discussed the requirements for the Flood Compensation Delivery Plan with the JLAs and the Environment Agency and has prepared this note to provide additional information to the examination about the context for the Flood Compensation Delivery Plan and proposed scope for the plan.

1.2.9 dDCO Application documents relevant to the FCDP include:

- 5.3 Environmental Statement – Appendix 11.9.6 Flood Risk Assessment [AS-078]
- 5.3 Environmental Statement – Appendix 11.9.6 Flood Risk Assessment – Annexes 3-6 [REP5-027]
- 5.3 Environmental Statement – Appendix 5.3.3 Indicative Construction Sequencing [REP2-016]

2 Consideration of Climate Change

2.1.1 Given the duration of the construction period for the Project, EA guidance considers that there would be an increased risk of flooding due to climate change compared to the baseline situation during this time period. Consequently, the extent of floodplain considered when determining encroachment of the Project and therefore the potential need for mitigation includes an allowance for the predicted impacts of climate change.

2.1.2 The Project will be constructed wholly within the 2020s climate change epoch

(covering the period from 2015 to 2039). The Project's FRA (contained in **ES Appendix 11.9.6** (Doc Ref. 5.3 v3)) has assessed the flood risk impacts during construction against the 2020's climate change epoch which equates to the consideration of a 1 per cent (1 in 100) Annual Exceedance Probability (AEP) event plus 16 per cent allowance for climate change in accordance with Environment Agency (EA) guidance.

2.1.3 Figure 1.1 illustrates the location of the Project works in relation to the extent of this event. Figure 1.1 includes the Wastewater Treatment Works (WwTW) facility which has not yet been subject to the Second Change Application and has therefore not yet been accepted into the Examination.

3 Floodplain Works

3.1.1 All works listed in Schedule 1 of the **draft DCO** [REP5-055] have been assessed in the FRA [AS-078]. For ease of reference they are shown on Figure 1.2. DCO Requirement 23 requires an approved FCDP to be approved before the Floodplain Works may commence and the FCDP must set out the delivery of the Fluvial Mitigation Works in relation to these Floodplain Works. This section explains how the "Floodplain Works" as listed in DCO Requirement 23 have been determined.

3.1.2 The works listed in Schedule 1 fall into one of the following three categories:

- Outside of the floodplain and therefore no requirement for the Fluvial Mitigation Works to be in place before they are commenced.
- Within the floodplain but do not require any of the Fluvial Mitigation Works to be in place before they are commenced for the reasons explained in this section.
- Within the floodplain and likely to require some or all of the Fluvial Mitigation Works to be in place before they are commenced.

3.1.3 To aid understanding we have listed the specific work numbers from Schedule 1 of the draft DCO in each section below as well as setting out the justification for those works being in each category.

3.2. Works outside of the floodplain

3.2.1 Work Nos. 1, 2, 4a, 4b, 4c, 4d, 4e, 4ji, 4jiii, 4jiv, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 19, 22, 24, 25, 26, 27, 28, 30, 33, 34b 35, 36a, 36b, 36d, 36g, 36h, 36i, 36j, 36k, 36l, 36m, 36n, 36o, 36r, 36s, 36t, 36u, 36v, 36z, 37c, 37d, 37e, 37k, 41 and 43 do not encroach onto the floodplain of the 1 per cent (1 in 100) AEP plus 16 per cent climate change event.

3.2.2 Therefore, these works do not require any of the Fluvial Mitigation Works to be in place prior to their construction as they will not remove floodplain.

3.3. Works within the floodplain but **Not** Requiring any of the Fluvial Mitigation Works Prior to their Construction

3.3.1 Work Nos. Work Nos. 14, 18, 23a, 31a, 31d, 31e, 31f, 38b, 38c, 38d, 38e, 38f, 39f, 40a, 40b, 40c and 42 encroach onto the extent of the 1 per cent (1 in 100) AEP plus 16 per cent climate change event but are not included as Floodplain Works because they either do not require the Fluvial Mitigation Works to be delivered prior to their construction or practically cannot be delivered until the Fluvial Mitigation Works have been delivered. The specific reasons for these listed works have been included below.

3.3.2 The replacement of the Fire Training Ground (Work No. 14) would not involve ground raising and therefore can be constructed prior to the construction of the Fluvial Mitigation Works. The increased flood risk to the replacement Fire Training Ground has already been assessed in Sections 6.2 and 7.2 of the FRA. The existing Fire Training Ground is at risk of flooding. Work No. 14 will relocate it to an area of slightly higher risk as stated in the FRA. However, the flooding would not affect the ability of the airport to remain operational and safe. GAL's planned response to a flood event (including the management flow chart during such an event) of this magnitude is set out in GAL's Flood Resilience Statement (**ES Appendix 11.9.6: Annex 6** [APP-149]) secured by DCO Requirement 24. Therefore, the relocation and replacement of the Fire Training Ground can commence in advance of the completion of any fluvial mitigation.

3.3.3 The South Terminal International Departure Lounge (IDL) Extension (Works 23a) would be elevated with stilts and open to first floor level and hence would not impact fluvial flood risk. Therefore these works can also be constructed in advance of the construction of the Fluvial Mitigation Works.

3.3.4 The ecological planting, landscaping and access works at Museum Field (Work No. 38b-f), landscaping and surface access improvements at Car Park X (Work No. 31a, d-f) and ecological measures at the River Mole (Work No. 39f) similarly do not require ground raising. Further, these works are integrated into the Fluvial Mitigation Works and it is not practicable to construct these works prior to the associated Fluvial Mitigation Works.

3.3.5 The planting and delivery of the replacement open space north east of Longbridge Roundabout (Work Nos. 40b and 40c) and habitat enhancement area along Perimeter Road East and Perimeter Road South, including a weir and a fish pass (Works 42), involve no ground raising or change in impermeable area and therefore they can be constructed in advance of the construction of the Fluvial Mitigation Works.

3.3.6 Work No. 40a will consist of very minor works to construct the footbridge footings. However, this will involve negligible change in impermeable area and therefore

Work No. 40a can be constructed in advance of the Fluvial Mitigation Works.

3.3.7 Certain Project works include mitigation measures (syphons or flood relief culverts) that will maintain floodplain connectivity that would otherwise be lost through their construction. These are secured through the **Design Principles** [REP5-031] and therefore they can be constructed in advance of the construction of the Fluvial Mitigation Works. These works are:

- End Around Taxiways West and East (Work Nos. 4f and 4g), which has associated syphons;
- Western Noise Mitigation Bund (Work No. 18), which has associated syphons; and
- Active Travel Path, which has associated flood relief culverts (Work No. 36p).

3.3.8 The Western Noise Mitigation Bund (Work No. 18) encroaches on the 1 per cent plus 16 per cent AEP floodplain, however the syphons under the noise bund mitigate the impacts of Work No. 18 in isolation, and no other mitigations (namely Museum Field FCA, Car Park X and the River Mole diversion) benefit that area of the floodplain. Therefore Work No. 18 can be constructed in advance of the construction of the Fluvial Mitigation Works. Syphons beneath the noise bund are included in the drainage design principles in the **Design Principles** [REP5-031], secured by DCO Requirement 10 (surface and foul water drainage).

3.3.9 The End Around Taxiways West and East (Work No. 4f and 4g) and Active Travel Path (Work No. 36p) also consist of embedded mitigation measures, however, the embedded mitigation alone may not be sufficient to fully mitigate for the impact of these works and prevent any adverse impacts outside the DCO boundary because the fluvial mitigation strategy has been developed holistically. Separating fluvial mitigation for each individual work elements would result in many small interventions which would be less efficient with potentially greater environmental impacts. Therefore, Work Nos. 4f, 4g and 36p cannot be constructed prior to any fluvial mitigation works.

3.3.10 In summary, the following works located within the baseline 1 per cent (1 in 100) plus 16 per cent climate change allowance flood extents can progress prior to any fluvial mitigation works as they would not increase flood risk to other parties during the construction period: Work Nos. 14, 18, 23a, 31a, 31d, 31e, 31f, 38b, 38c, 38d, 38e, 38f, 39f, 40a, 40b, 40c and 42.

3.4. Works Requiring Fluvial Mitigation Works Prior to their Construction

3.4.1 Work Nos 3, 4f, 4g, 4h, 4i, 4jii, 15, 20, 23b, 23c, 23d, 29, 32, 34a, 34c, 36c, 36e, 36f, 36p, 36q, 36w, 36x, 36y, 37a, 37b, 37f, 37g, 37h, 37i, 37j, 37l, 37m and 37n are within the baseline 1 per cent (1 in 100) plus 16 per cent climate change

allowance flood extents and therefore are likely to require one or all three of the Fluvial Mitigation Works to be completed prior to their construction.

3.4.2 Additionally, as noted in paragraph 3.3.9, Work Nos. 4f, 4g and 36p consist of embedded mitigation measures, however the embedded mitigation alone may not be sufficient to fully mitigate for the impact of these works. Therefore Work Nos. 4f, 4g and 36p cannot be constructed prior to any fluvial mitigation works.

3.4.3 Under DCO Requirement 23 a FCDP must be submitted to and approved prior to any of these works commencing and the FCDP must set out the sequencing of these works with the Fluvial Mitigation Works.

4 Fluvial Mitigation Works

4.1.1 The principal means of fluvial flood risk mitigation proposed as part of the Project are:

- A flood compensation area at the Museum Field Environmental Mitigation Area (Works 38a);
- A flood compensation area at Car Park X (Works 31b and c); and
- The diversion and extension of the River Mole that increases the available storage within the river corridor (Works 39a-c and e).

4.1.2 Further fluvial mitigation measures have been built into the original design of the authorised development as explained in paragraph 3.3.7 and other measures will be implemented through the detailed design phase and are secured through the **Design Principles** [REP5-031].

4.1.3 Although similar in feature, the attenuation storage facility beneath Car Park Y (Works 30a) has been included as part of the Project as surface water drainage mitigation rather than to mitigate the fluvial risk. It is therefore not included as a Fluvial Mitigation Work and will not be included in the FCDP. Instead, it is secured through the Parameter Plans and the Design Principles.

4.1.4 This section describes each of the Fluvial Mitigation Works which is also in the **Project Description** [REP1-016] and provides further information about how they will operate. The locations are secured through Article 6 and the Works Plans and the key features are secured through the **Design Principles** [REP5-031] and relevant DCO Requirements.

4.2. Museum Field FCA (Work No. 38a)

4.2.1 The proposed Museum Field Floodplain Compensation Area (FCA) is an offline excavated storage area which would fill freely via a spillway (swale) when water levels in the River Mole reach 56.6m AOD. It is envisaged that the spillway would

consist of an earth-lined, grassed trapezoidal swale feature approximately 12m wide. The need for erosion protection and fish refuge(s) would be determined through detailed design post-DCO consent, see Figure 4.1.

4.2.2 The proposed FCA would be approximately 165m by 185m and located north of the replacement Fire Training Ground (proposed as part of the Project works) and west of the River Mole. Excavations depths below existing ground level would be between 2.6 and 3.4m.

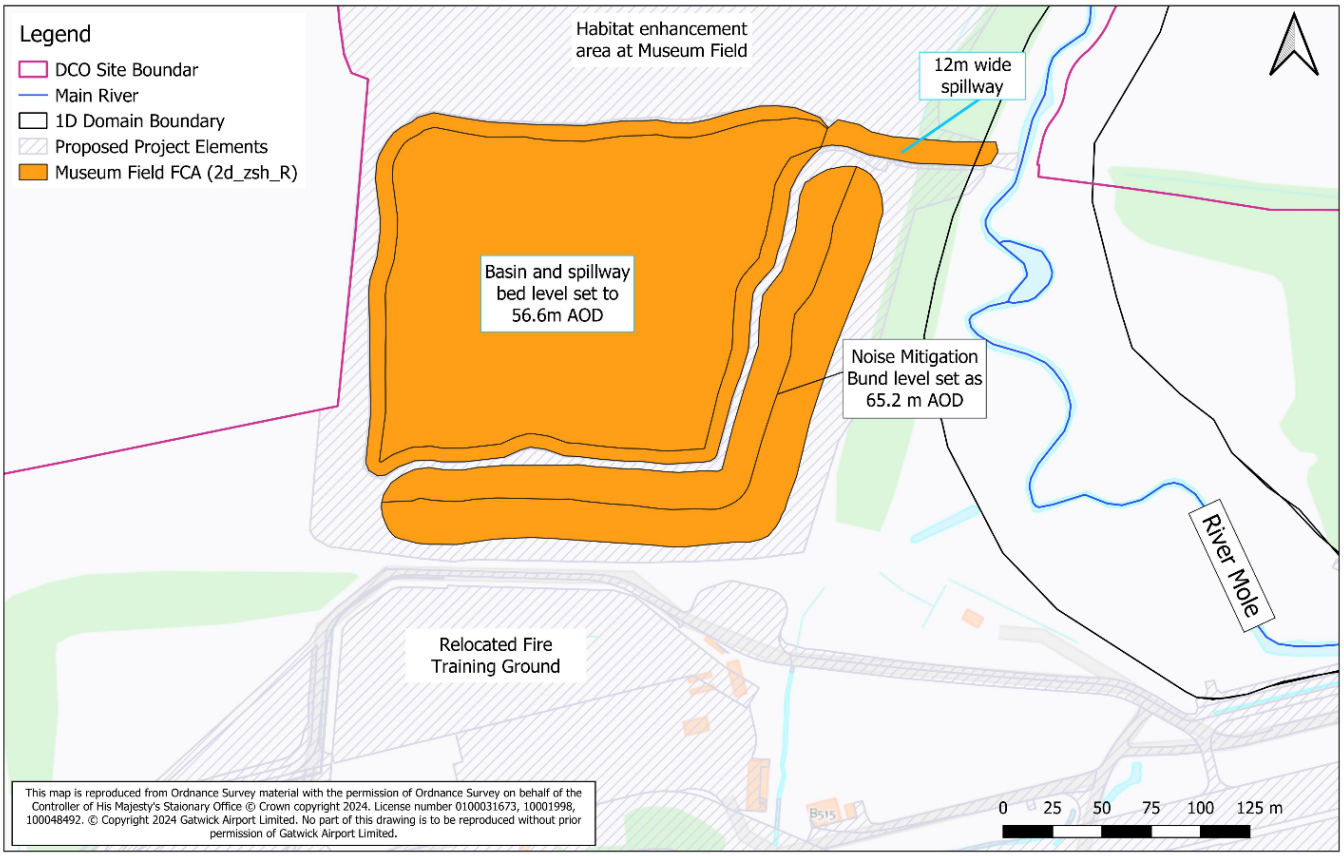


Figure 4.1: Schematic of Museum Field FCA

4.2.3 The proposed Museum Field FCA would fill exclusively when the River Mole water level rises to 56.6m AOD and the spillway is engaged. There would be no surface water interactions via overland flow. The critical duration event for this location is 24-hours, and the parameters in Table 4.1 are based on this duration. The proposed FCA has been sized based on the 1 per cent (1 in 100) plus 20 per cent event as the design criteria for the Project fluvial mitigation strategy.

Table 4.1:Museum Field FCA peak operation characteristics

Parameter	AEP Event			
	10%	3.33%	1%	1%AEP+20%CC
Peak Water Depth (m)	0.50	0.70	0.86	0.97
Peak Water Level (m AOD)	57.10	57.31	57.46	57.58
Volume Stored (m^3)	14,800	21,050	25,650	29,250
Fill time (hr)	5	5	6	12
Drawn down time (hr)	28	34	36	36
Peak Flows in River Mole (Model Node ID: MOLE_3000) (m^3/s)				
Baseline (106C) (m^3/s)	22.8	27.3	31.15	36.93
With-Project (570D) (m^3/s)	22.1	26.7	30.6	35.75
Reduction in peak flow in River Mole (m^3/s)	-0.7	-0.6	-0.55	-1.18

4.2.4 Figure 4.2 compares the baseline and with-scheme hydrograph downstream of the proposed Museum Field FCA, indicating that peak flows would not increase as a result of the Project's fluvial flood risk mitigation strategy in the 3.3 per cent (1 in 30) AEP event and the 1 per cent (1in 100) AEP event plus a 20 per cent allowance for climate change in Figure 4.3. This is equivalent to the 100-year design life fluvial flood risk mitigation strategy adopted by the Project.

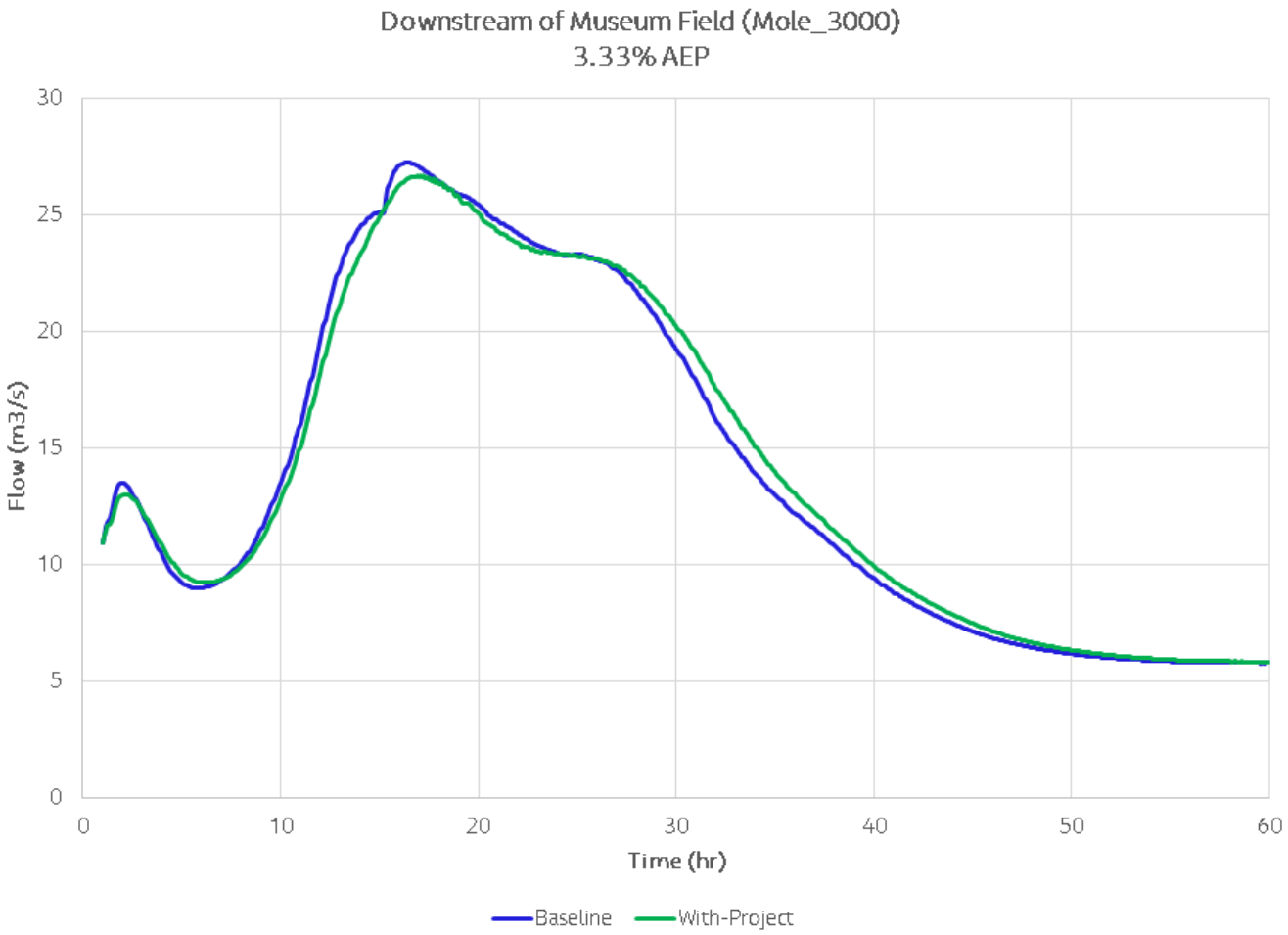


Figure 4.2: Reduction in peak flow in the River Mole due to Museum Field FCA – 3.33% (24 hours storm duration)

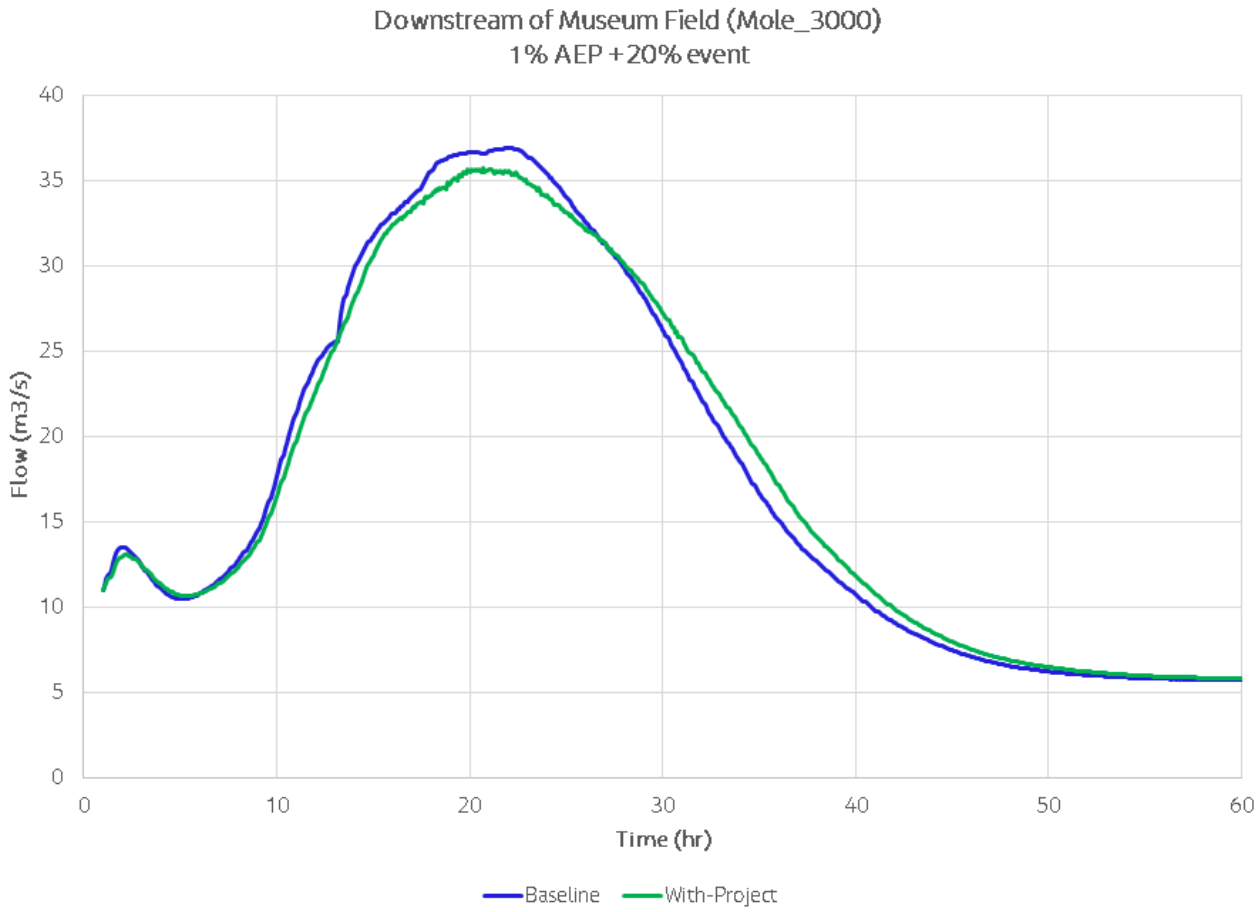


Figure 4.3: Reduction in peak flow in the River Mole due to Museum Field FCA – 1% AEP +20% (24 hours storm duration)

4.3. Car Park X FCA (Work No. 31b and 31c)

4.3.1 The proposed Car Park X (CPX) FCA is an approximately 300m long by 90m wide rectangular storage basin, located south of the main runway and the Crawter's Brook, see Figure 4.4. Excavation depths below existing ground level are proposed to be between 0.9 and 2.3m.

4.3.2 The CPX FCA would fill in the event of the River Mole flooding upstream of Charlwood Road and flowing north-east overland and over-spilling into the FCA within CPX. No flows would enter the FCA from Crawter's Brook. The crest level of the spillway is set to 58.5m AOD so the FCA would operate when water levels in the River Mole exceed this level. The detailed design will provide details of water quality management to prevent pollution from car parking operations to prevent any impacts to the River Mole, see Design Principles DDP8 and DDP12 in **Design and Access Statement Volume 5** [REP2-036]. The FCA would then drain via an outflow pipe when water levels in the River Mole recede. The outfall would be flapped to prevent the FCA filling via backflow from the watercourse.

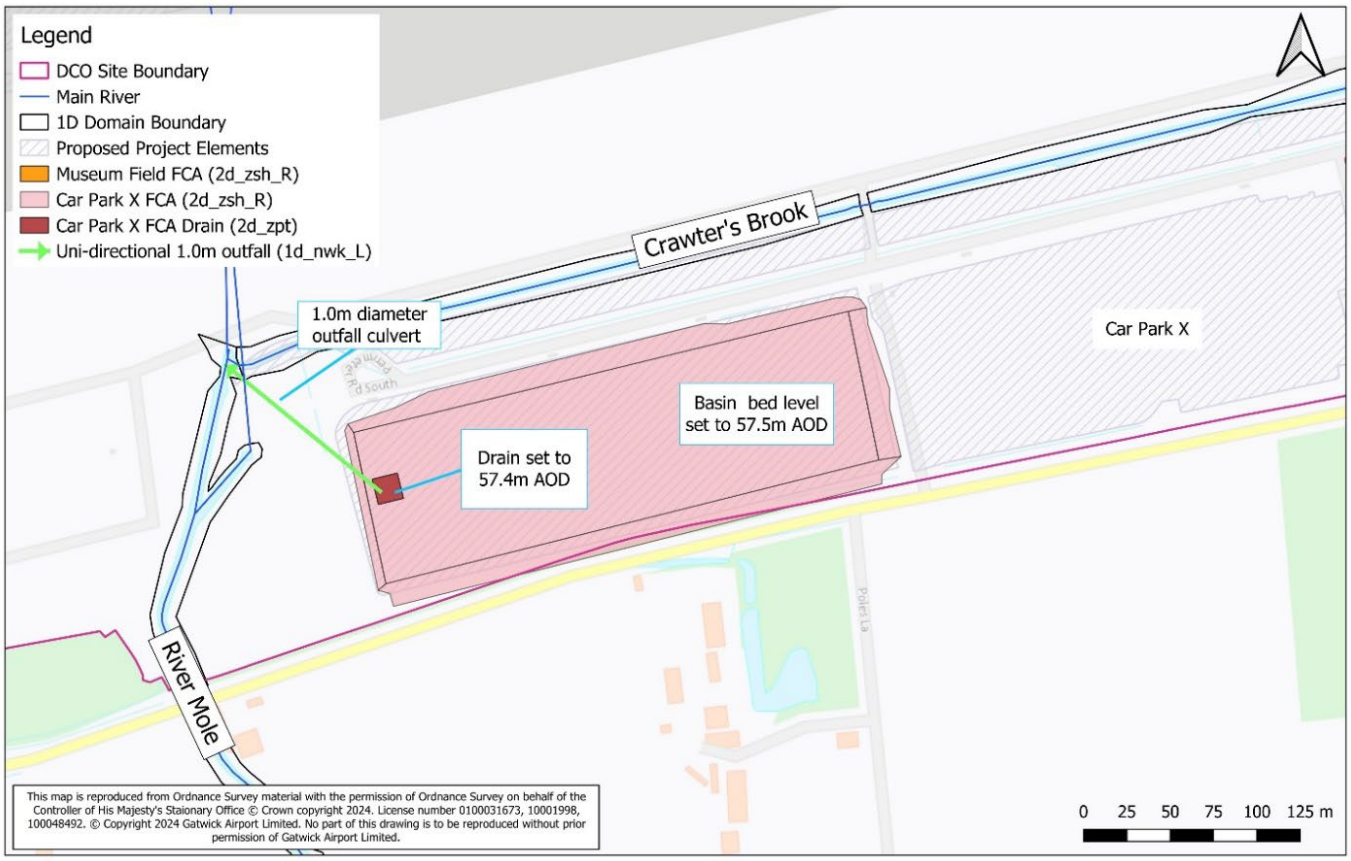


Figure 4.4: Schematic Drawing of the proposed Car Park X FCA

4.3.3 The critical duration for this location is the 12-hour storm. The parameters in Table 4.2 are based on this storm duration.

Table 4.2: CPX FCA peak operation characteristics

Parameter	AEP Event			
	10%	3.33%	1%	1%AEP+20%CC
Peak Water Depth (m)	0	0.65	1.13	1.59
Peak Water Level (m AOD) in FCA	-	58.15	58.63	59.08
Volume Stored (m^3)	-	17,650	32,250	47,300
Fill time (hr)	-	3	3	3
Drawn down time (hr)	-	29	30	32
Peak Flows in River Mole (Model Node ID:19_0000)				
Baseline (106C) (m^3/s)	17.44	20.11	22.07	23.27
With-Project (570D) (m^3/s)	17.76	20.8	22.7	24.22
Increase in peak flow into River Mole Culvert (m^3/s)	+0.32	+0.7	+0.59	+0.95

4.3.4 The peak flows downstream of CPX FCA would increase with the Project, which is likely due to the attenuation of the FCA to allow for the River Mole culvert to flow more efficiently, resulting in the increase in flows seen in Table 4.2. However, as indicated in Table 4.1, this would not extend further downstream beyond the Museum Field FCA and would not affect other parties due to the holistic mitigation strategy for the whole Project. This is evident in the hydrographs for these events downstream of the Museum Field FCA which reflects the impact of both FCAs (see Figure 4.2 and Figure 4.3).

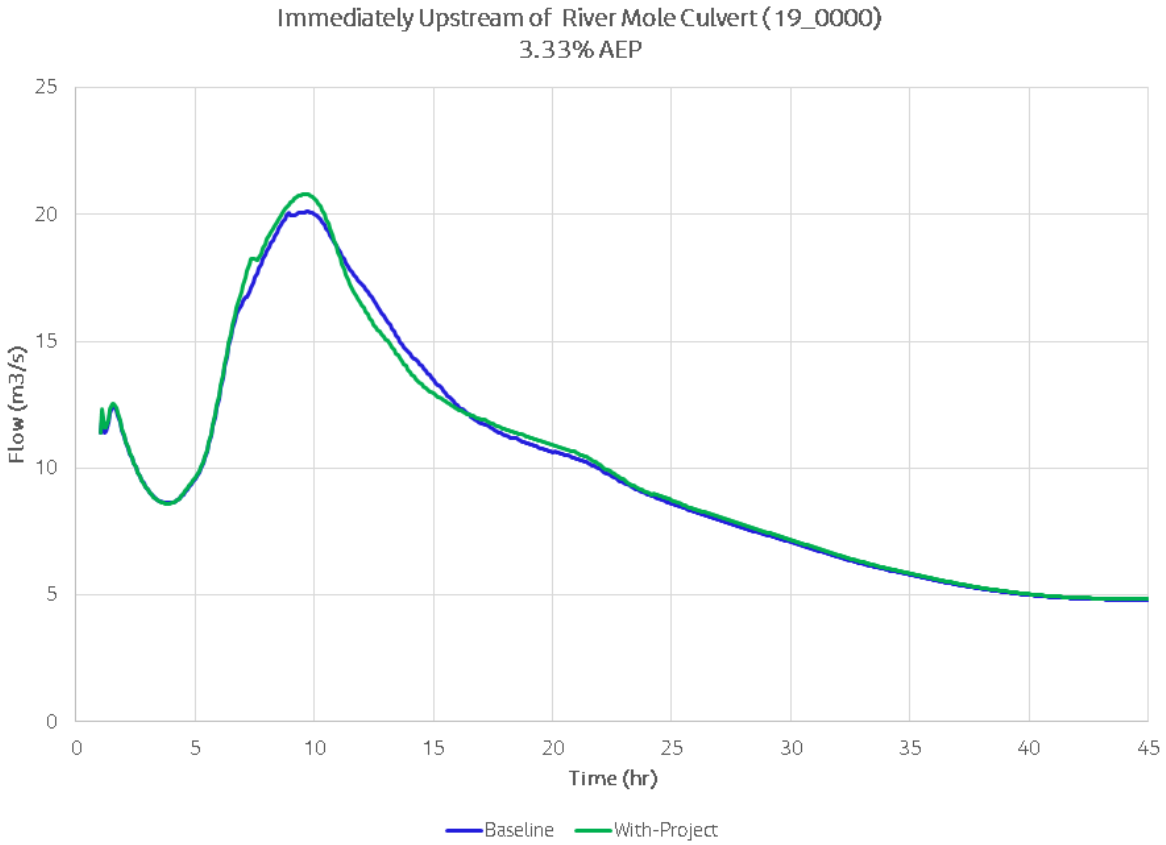


Figure 4.5: Change in peak flow in River Mole culvert due to CPX FCA – 3.33% AEP (12 hours storm duration)

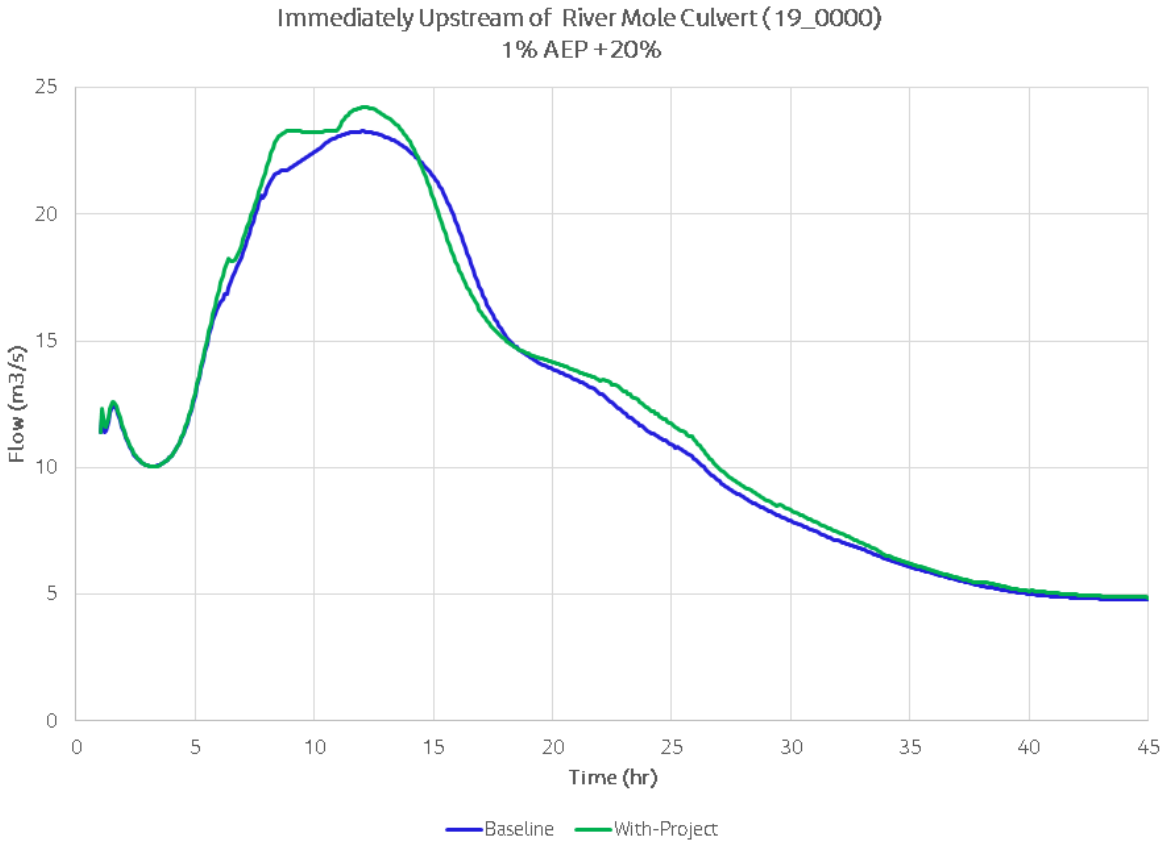


Figure 4.6: Change in peak flow in River Mole culvert due to CPX FCA - 1% AEP +20% (12 hours storm duration).

4.4. Diversion and extension of the course of the River Mole (Work No. 39a-39e)

4.4.1 The River Mole is conveyed beneath the airfield in a northerly direction via twin box culverts, augmented by a syphon that conveys higher flows. Reconfiguration of the airfield as part of the Project will interact with the River Mole and these structures on the northern side of the airfield at their outlets. The existing Taxiway Juliet would require an increased separation distance from the repositioned northern runway to allow aircraft to use this taxiway independently of northern runway operations, therefore the western part of Taxiway Juliet (Taxiway Juliet West) would be repositioned approximately 27 metres to the north of its existing position. As a result of this taxiway reconfiguration, the following works are necessary:

- The River Mole would be diverted and extended to the north of its current course to take a more sinuous course than the current alignment and provide approximately a 300 metre length of new renaturalised river valley;
- The river channel at the exit to the existing culvert would be extended. The channel that the River Mole runs in from the exit of the existing culvert would be extended northwards by 26 metres to enter the new section of river valley;

- The River Mole syphon (which activates only in high flow conditions) would be extended in a new section of box culvert of approximately 36 metres in length to connect to the new section of river valley; and
- Pond A would be removed and infilled.

5 Conclusions

5.1.1 This FCDP Technical Note confirms which works should be listed in R23 of Schedule 2 of the dDCO (Dof Ref 2.1), either as fluvial mitigation measures or as works which require mitigation prior to construction. It also sets out the rationale for identifying the works listed in R23.

5.1.2 The principal means of fluvial flood risk mitigation for the Project are:

- A flood compensation area at the Museum Field Environmental Mitigation Area (Works 38a);
- A flood compensation area at Car Park X (Works 31b and c); and
- The diversion and extension of the River Mole that increases the available storage within the river corridor (Works 39a-c and e).

5.1.3 A summary of the Project works, their interaction with the floodplain and whether mitigation is required as a pre-requisite for each of the Project works is included below in Table 5.1.

5.1.4 Of the 114 Project Work Nos.:

- 56 do not require fluvial mitigation measures in place prior to construction because they do not lie within the fluvial floodplain in the construction scenario (1 per cent (1 in 100) AEP plus 16 per cent climate change).
- 34 require fluvial mitigation measures in place prior to construction as they lie within the fluvial floodplain in the construction scenario.
- 24 do not require fluvial mitigation measures in place prior to construction because, although they lie within the fluvial floodplain in the construction scenario, the Work Nos. are fluvial mitigation measures or involve no ground raising or change in impermeable area, lie on stilts or have integrated mitigation measures.

5.1.5 Works 1, 2, 4a, 4b, 4c, 4d, 4e, 4ji, 4jiii, 4jiv, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 22, 23a, 24, 25, 26, 27, 28, 30, 31a, 31d, 31e, 31f, 33, 34b, 35, 36a, 36b, 36d, 36g, 36h, 36i, 36j, 36k, 36l, 36m, 36n, 36o, 36r, 36s, 36t, 36u, 36v, 36z, 37c, 37d, 37e, 37k, 38b, 38c, 38d, 38e, 38f, 40a, 40b, 40c, 42, 41 and 43 do not require fluvial mitigation measures in place prior to construction and therefore will not be included within R23.

5.1.6 Works which lie within the 1 per cent (1 in 100) AEP plus 16 per cent climate change event floodplain, which require fluvial flood risk mitigation are: 3, 4f, 4g, 4h, 4i, 4jii, 15, 20, 23b, 23c, 23d, 29, 32, 34a, 34c, 36c, 36e, 36f, 36p, 36q, 36w, 36x, 36y, 37a, 37b, 37f, 37g, 37h, 37i, 37j, 37l, 37m and 37n. These works will be included within R23 and will later be included within the FCDP to support FRAP applications.

Table 5.1: Interaction of Project works with the floodplain and their need for mitigation prior to construction.

Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
1	Works to reposition the existing northern runway 12 metres to the north (measured from the centreline of the existing northern runway).	x	x	
2	Works to construct the Runway Access Track between the repositioned northern runway and the main runway.	x	x	
3	Works to convert three existing aircraft stands to overnight parking/remote aircraft stands.	✓	✓	
4a	Reposition and resurface Taxiway Juliet East between Taxiway Quebec and Taxiway Uniform;	x	x	
4b	Reposition and resurface exit/entrance taxiways between the repositioned northern runway and Taxiway Juliet;	x	x	
4c	Extend Taxiway Lima westward	x	x	
4d	Extend Taxiway Tango northward to the extended Taxiway Lima	x	x	
4e	Reposition and resurface the exit/entrance taxiways from the main runway to the repositioned northern runway	x	x	
4f	Construct an end around taxiway (End Around Taxiway West)	✓	✓	

Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
4g	Construct an end around taxiway (End Around Taxiway East) from the main runway to Taxiway Yankee	✓	✓	
4h	Reposition and resurface Taxiway Juliet West, including the relocation of substation BK	✓	✓	
4i	Construct a taxiway spur (Taxiway Juliet West Spur)	✓	✓	
4ji	Resurface existing taxiways: Taxiway Uniform	x	x	
4jii	Resurface existing taxiways: Taxiway Whiskey	✓	✓	
4jiii	Resurface existing taxiways: Taxiway Zulu	x	x	
4jiv	Resurface existing taxiways: Taxiway Victor	x	x	
5	Works to the Aircraft Holding Area (Charlie Box)	x	x	
6	Works to construct a new pier (Pier 7)	x	x	
7	Works to construct the Oscar Area	x	x	
8	Works to remove the airside support facilities	x	x	
9	Works to construct the replacement Central Area Recycling Enclosure (CARE) facility	x	x	
10	Works to construct the replacement Motor Transport Facilities	x	x	
11	Works to construct the replacement Grounds Maintenance Facilities	x	x	
12	Works to construct the replacement Airfield Surface Transport Facilities	x	x	
13	Works to construct the replacement Rendezvous Point North, comprising a hardstanding area and cabin building, including removal of car park hardstanding and facilities.	x	x	
14	Works to remove and construct the replacement Fire Training Ground	✓	x	No ground raising. No impact to access or

Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
				egress routes. Planned response is set out in GAL's Flood Resilience Statement (ES Appendix 11.9.6: Annex 6 [APP-149])
15	Works to construct the Satellite Airport Fire Service Facility	✓	✓	
16	Works to construct a new aircraft hangar	x	x	
17	Works to relocate the Hangar 7 support structures	x	x	
18	Works to remove and replace the western noise mitigation bund	✓	x	The syphons would mitigate the change in flood risk due to the noise bund in isolation
19	Works to construct pumping station 2a.	x	x	
20	Works to realign Larkins Road	✓	✓	
22	Works associated with the North Terminal Building	x	x	
23a	South Terminal Building: Extend the International Departure Lounge on levels 10, 20, 30, and 40;	✓	x	On stilts
23b	South Terminal Building: Reconfigure internal facilities	✓	✓	
23c	South Terminal Building: Construct the South Terminal Autonomous Vehicle Station	✓	✓	
23d	South Terminal Building: Construct additional coaching gates	✓	✓	
24	Works to upgrade the North Terminal Forecourt including access roads	x	x	

Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
25	Works to upgrade the South Terminal Forecourt including access roads	x	x	
26	Works to construct a hotel north of multi-storey car park 3	x	x	
27	Works to construct a hotel on the car rental site	x	x	
28	Works associated with the Car Park H Site	x	x	
29	Works to convert the existing Destinations Place office into a hotel	✓	✓	
30	Works to construct Car Park Y	x	x	
31a	Car Park X: Earthworks and landscaping	✓	x	Involve no ground raising or change in impermeable area
31b	Car Park X: Construction of a flood compensation area with a capacity of approximately 55,000m3	✓ - Fluvial Mitigation	x	Fluvial mitigation measure
31c	Car Park X: Construction of an outfall structure	✓ - Fluvial Mitigation	x	
31d	Car Park X: Access improvements	✓	x	Involve no ground raising or change in impermeable area
31e	Car Park X: Deck parking provision, a re-provision of Purple Parking	✓	x	
31f	Car Park X: Surface parking amendments.	✓	x	
32	Works to remove existing car parking at North Terminal Long Stay car park and construct a decked car parking structure.	✓	✓	
33	Works associated with the existing Purple Parking car park	x	x	
34a	Remove Car Park B South	✓	✓	
34b	Remove Car Park B North	x	x	
34c	Deliver replacement open space at Car Park B South and Car Park B North	✓	✓	
35	Works associated with the South Terminal Junction improvements	x	x	

Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
36a	North Terminal Junction Improvements: The widening and realignment of the existing A23 London Road between the Airport Way Bridge over A23 London Road and the new A23 London Road / North Terminal Link Signal-Controlled Junction	x	x	
36b	North Terminal Junction Improvements: The construction of a new signal-controlled junction (A23 London Road / North Terminal Link Signal-Controlled Junction) for the interface between A23 London Road and the new North Terminal Link	x	x	
36c	North Terminal Junction Improvements: The widening and realignment of the existing A23 London Road between the new A23 London Road / North Terminal Link Signal-Controlled Junction and the A23 London 50 Road bridge over the River Mole, approximately 480m long, to include the provision of three lanes northbound between the North Terminal Flyover Link merge and the A23 London Road bridge over the River Mole	✓	✓	
36d	North Terminal Junction Improvements: Realignment and widening of the existing Airport Way Westbound between the Airport Way Rail Bridge and the new North Terminal Flyover Link, approximately 550m long, to include the provision of a third lane westbound	x	x	
36e	North Terminal Junction Improvements: Realignment and reconfiguration of the existing	✓	✓	

Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
	diverge from A23 London Road to Airport Way Eastbound (A23 London Road Diverge to Airport Way Eastbound)			
36f	North Terminal Junction Improvements: Construction of a new flyover link (North Terminal Flyover Link) over the North Terminal Roundabout between Airport Way Westbound and A23 London Road Northbound	✓	✓	
36g	North Terminal Junction Improvements: Construction of a new diverge from Airport Way Westbound to North Terminal Roundabout (Airport Way Diverge to North Terminal Roundabout)	x	x	
36h	North Terminal Junction Improvements: Realignment and widening of the existing North Terminal Roundabout	x	x	
36i	North Terminal Junction Improvements: Construction of a new left-in diverge from A23 London Road Northbound to North Terminal roundabout (A23 London Road Northbound Left-in Diverge to North Terminal Roundabout)	x	x	
36j	North Terminal Junction Improvements: Construction of a new link road (North Terminal Link) from North Terminal Roundabout to a new signal-controlled junction on A23 London Road	x	x	
36k	North Terminal Junction Improvements: Realignment and widening of the existing Northway	x	x	
36l	North Terminal Junction Improvements: Realignment and widening of the existing Longbridge Way	x	x	

Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
36m	North Terminal Junction Improvements: Realignment and widening of the existing Gatwick Way	x	x	
36n	North Terminal Junction Improvements: Realignment and widening of the existing Perimeter Road North	x	x	
36o	North Terminal Junction Improvements: Realignment and widening of the existing North Terminal Approach Road	x	x	
36p	North Terminal Junction Improvements: The construction of a new active travel path for pedestrians and cyclists between Longbridge Roundabout and North Terminal Roundabout including crossings of internal Gatwick Airport roads	✓	✓	
36q	North Terminal Junction Improvements: The construction of a new ramp connection for pedestrians and cyclists between A23 London Road and Riverside Garden Park	✓	✓	
36r	North Terminal Junction Improvements: The widening of the existing Airport Way bridge over the London to Brighton Railway (Airport Way Rail Bridge)	x	x	
36s	North Terminal Junction Improvements: The construction of a new 240m long retaining wall on the southern side of Airport Way to the west of the Airport Way Rail Bridge (Retaining Wall 36)	x	x	
36t	North Terminal Junction Improvements: The construction of a new flyover bridge structure (North Terminal Flyover Bridge), to carry	x	x	

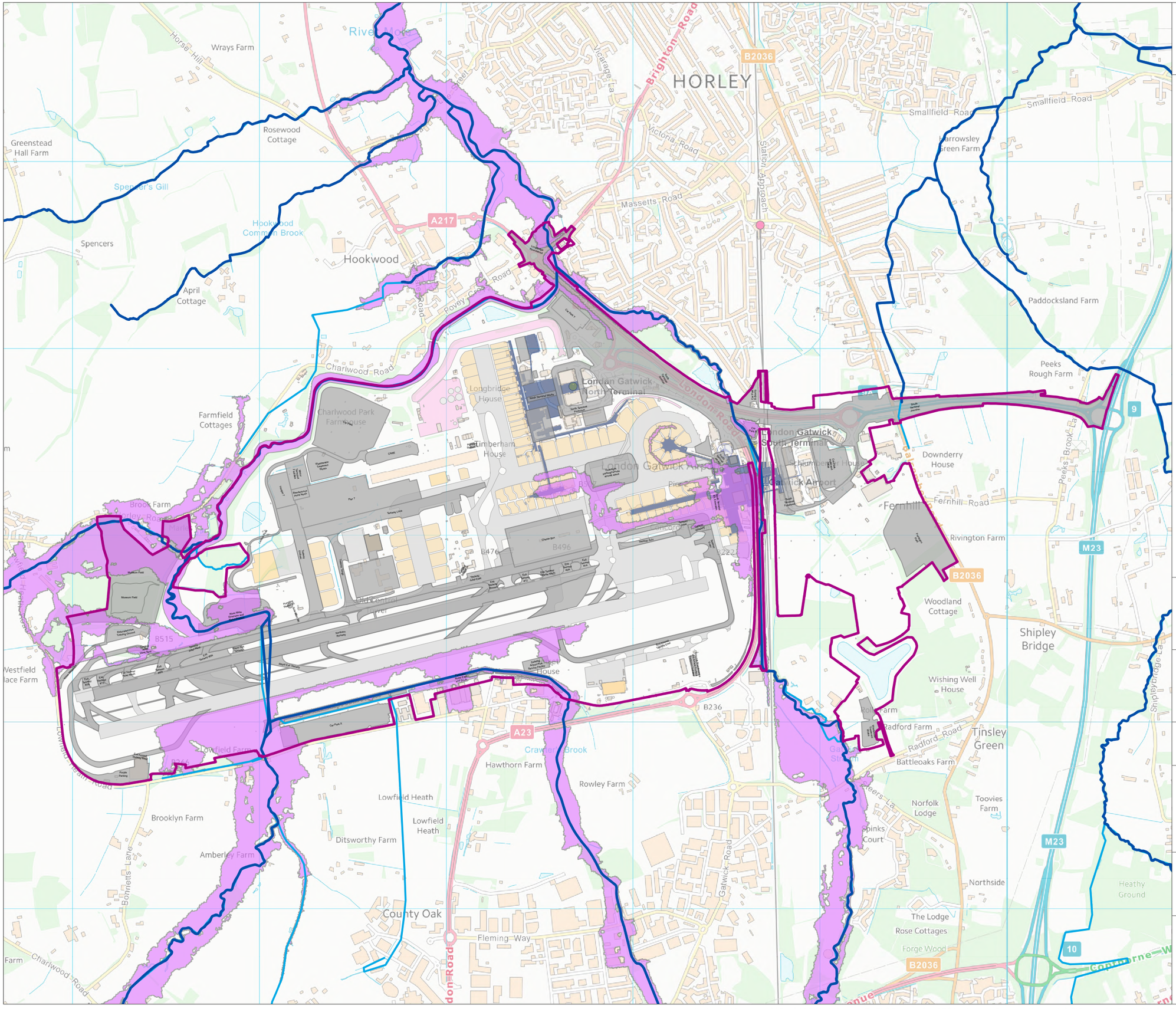
Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
	the new North Terminal Flyover Link over the new North Terminal Link			
36u	North Terminal Junction Improvements: The construction of a new 85m long retaining wall, southeast of the North Terminal Flyover Bridge (Retaining Wall 32)	x	x	
36v	North Terminal Junction Improvements: The construction of a new 160m long retaining wall, located between Airport Way Westbound Diverge to North Terminal Roundabout and the existing Inter Terminal Transit Shuttle viaduct (Retaining Wall 30)	x	x	
36w	North Terminal Junction Improvements: The construction of a new 160m long retaining wall, located between North Terminal Flyover Link and A23 London Road (Retaining Wall 33)	✓	✓	
36x	North Terminal Junction Improvements: The construction of a new 160m long retaining wall, located east from the Bridge over the River Mole, adjacent to ramp down to Riverside Garden Park (Retaining Wall 21)	✓	✓	
36y	North Terminal Junction Improvements: The construction of a new widened bridge (A23 London Road bridge over the River Mole) to replace the existing bridge over the River Mole on A23 London Road	✓	✓	
36z	North Terminal Junction Improvements: The construction of a new attenuation basin (Basin 2), with an approximate capacity of 2,000m3, with associated drainage facilities, access and landscaping	x	x	

Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
	located to the northeast of North Terminal Roundabout			
37a	Longbridge Roundabout Junction Improvements: The widening and realignment of the existing A23 London Road between Longbridge Roundabout and the A23 London Road bridge over the River Mole, approximately 130m long, to include the provision of three lanes northbound	✓	✓	
37b	Longbridge Roundabout Junction Improvements: The widening and realignment of the existing A23 Brighton Road	✓	✓	
37c	Longbridge Roundabout Junction Improvements: The widening and realignment of the existing A217	x	x	
37d	Longbridge Roundabout Junction Improvements: The realignment of the existing Povey Cross Road	x	x	
37e	Longbridge Roundabout Junction Improvements: The widening and realignment of existing Longbridge Roundabout	x	x	
37f	Longbridge Roundabout Junction Improvements: The construction of a new 50m long retaining wall, northwest of the A23 London Road Bridge over the River Mole (Retaining Wall 35)	✓	✓	
37g	Longbridge Roundabout Junction Improvements: Widening of the existing Longbridge Roundabout segregated left turn lane stilt structure	✓	✓	
37h	Longbridge Roundabout Junction Improvements: The construction of a new 35m long retaining wall,	✓	✓	

Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
	between the stilt structure and A23 Brighton Road Bridge over the River Mole (Retaining Wall 34)			
37i	Longbridge Roundabout Junction Improvements: The construction of a new widened bridge (A23 Brighton Road Bridge over the River Mole) to replace the existing bridge over the River Mole on A23 Brighton Road	✓	✓	
37j	Longbridge Roundabout Junction Improvements: The construction of a new 30m long retaining wall east of the A23 Brighton Road Bridge over the River Mole (Retaining Wall 18)	✓	✓	
37k	Longbridge Roundabout Junction Improvements: The construction of a new 45m long retaining wall on the southern side of Longbridge Roundabout (Retaining Wall 19)	x	x	
37l	Longbridge Roundabout Junction Improvements: The construction of a new 40m long retaining wall on the northern side of Longbridge Roundabout (Retaining Wall 20)	✓	✓	
37m	Longbridge Roundabout Junction Improvements: The construction of a new attenuation basin (Basin 3), with an approximate capacity of 600m^3, with associated drainage facilities, access and landscaping located to the north of Longbridge Roundabout	✓	✓	
37n	Longbridge Roundabout Junction Improvements: The modification of the existing A23 Brighton Road Culvert located to the east of the River Mole	✓	✓	
38a	Museum Field: Construct a flood compensation area with a capacity of approximately 57,600m3	✓ - Fluvial Mitigation	x	Fluvial mitigation measure

Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
38b	Museum Field: Extend Gatwick greenspace footpath	✓	x	Involve no ground raising or change in impermeable area
38c	Museum Field: Construct a maintenance access road	✓	x	
38d	Museum Field: Undertake earthworks, landscaping and a bund around the southern and eastern perimeter	✓	x	
38e	Museum Field: Construct footbridge	✓	x	
38f	Museum Field: Construct two farm access bridges	✓	x	
39a	River Mole: Divert and extend river course	✓ - Fluvial Mitigation	x	Fluvial mitigation measure
39b	River Mole: Construct and extend culverts and syphons	✓ - Fluvial Mitigation	x	
39c	River Mole: Construct a section of concrete channel	✓ - Fluvial Mitigation	x	
39d	River Mole: Remove and infill Pond A	✓	x	Involve no ground raising or change in impermeable area
39e	River Mole: Construct a connection from Pond A catchment to Pond M	✓ - Fluvial Mitigation	x	Fluvial mitigation measure
39f	River Mole: Deliver ecological mitigation measures	✓	x	Involve no ground raising or change in impermeable area
40a	Land to the northeast of Longbridge Roundabout: Construct a pedestrian footbridge over the River Mole	✓	x	Minor works for bridge footings
40b	Land to the northeast of Longbridge Roundabout: Deliver no less than 0.52ha of planting	✓	x	Involve no ground raising or change in impermeable area

Works No.	Description	Interacting with 1% AEP + 16% CC event floodplain	Require mitigation prior to construction	Comments
40c	Land to the northeast of Longbridge Roundabout: Deliver replacement open space	✓	x	Involve no ground raising or change in impermeable area
41	Works to create an ecological area at Pentagon Field	x	x	
42	Works to establish a habitat enhancement area along Perimeter Road East and Perimeter Road South including replacement hedgerows and habitat suitable for bats along Crawter's Brook and construct a weir and a fish pass	✓	x	Involve no ground raising or change in impermeable area
43	Works to construct water treatment works	x	x	



LONDON GATWICK

KEY

- Project Boundary (DCO)
- Main Rivers
- Ordinary Watercourses
- Upper Mole Model 1% + 16% CC AEP event

Existing Elements

- Terminal
- Runway/Taxiway
- Hangar
- Stands
- Environmental Mitigation
- Other existing airport infrastructure

Proposed Project Elements

- Proposed Project Elements

DOCUMENT

Flood Compensation Delivery Plan Technical Note

DRAWING TITLE

Upper Mole Model 1%+16%CC AEP Event Extents (Baseline Scenario)

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 1.1	For FCDP Technical Note
	DRAWN BY: MC	PM / CHECKED BY: MS

SCALE @ A3 1:19,363

0 125 250 500 750 1,000 m

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LONDON GATWICK

KEY

- Project Boundary (DCO)
- Main Rivers
- Ordinary Watercourses

Proposed Project Elements

- Compound
- Aircraft Holding Area
- CARE
- Car Park
- Car Park, Hotel and Office
- End Around Taxiway
- Environmental Mitigation
- Existing Taxiway to be replaced with grass
- Exit/Entrance Taxiway
- Flood Compensation Area
- Grounds Maintenance and Airfield Surface Transport Facilities
- Hangar
- Hotel
- Landscaping
- Motor Transport Facilities
- Noise Mitigation
- Northern Runway
- Pumping Station
- Relocated Fire Training Ground
- Rendezvous Point North
- Runway Access Track
- Satellite Airport Fire Service Facility
- Stands
- Surface Access
- Taxiway
- Terminal Works
- Wastewater Treatment Works

Existing Elements

- Terminal
- Runway/ Taxiway
- Hangar
- Stands
- Environmental Mitigation
- Other existing airport infrastructure

DOCUMENT

Flood Compensation Delivery Plan Technical Note

DRAWING TITLE

Project Elements

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 1.2	For FCDP Technical Note
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SCALE @ A3 1:19,363

0 125 250 500 750 1,000 m

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