



## **Brent Cross Phase 1A (North)**

Alternative Reserved Matters Applications – ES Addendum (to the Revised FIR)

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## Brent Cross Phase 1A (North)

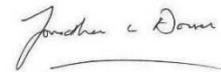
### Alternative Reserved Matters Applications – ES Addendum (to the Revised FIR)

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#### Quality Assurance – Approval Status

This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2008, BS EN ISO 14001: 2004 and BS OHSAS 18001:2007)

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#### Comments

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#### Comments

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## 1. Introduction

- 1.1. The Applicant (Brent Cross Cricklewood Development Partners) is seeking reserved matters approval for alternative designs to elements of Phase 1A (North) Revised Further Information Report (FIR) recently consented in September 2015.
- 1.2. The Development Partners have made significant progress toward securing the necessary reserved matters approvals for Phase 1A (North). Separate Reserved Matters Application (RMAs) have been approved in respect of Plots 53 and 54 (Ref. No. 15/00720/RMA), as well as Clitterhouse Playing Fields (Part 1) and Claremont Park (Ref. No. 15/00769/RMA) in May and June 2015 respectively.
- 1.3. RMAs for a package of infrastructure items (Ref. No. 15/03312/RMA) as well as Central Brent Riverside Park (Ref. No. 15/03315/RMA), secured resolution to grant permission in September 2015.
- 1.4. Collectively these RMAs covered all items within Phase 1A North as defined by the 2014 Permission. These approvals were supported by applications under Conditions 2.4 and 2.5 for minor changes to the DSF, DAS and DG which were approved accordingly. These previous applications can be summarised as follows:
  - Ref. No. 15/00834/CON – minor updates to the scale thresholds for buildings in Building Zone BT1;
  - Ref. No. 15/00664/CON – minor updates to the parameters relating to Clitterhouse Playing Fields and Claremont Park; and
  - Ref. No. 15/05040/CON – minor updates to the parameters relating to specific infrastructure items including Bridge Structure B1.
- 1.5. Since these approvals the Development Partners have continued to work with the London Borough of Barnet (LBB) and the highway authorities, particularly in respect of the highway technical approval process. As a result of this ongoing engagement the Development Partners have investigated alternative designs for a limited number of specific infrastructure items within Phase 1A (North). These alternative design proposals have resulted in the submission of four further RMAs for the specific infrastructure items in Phase 1A North.
- 1.6. Each alternative design proposal is described in full in the Explanatory Report that accompanies the RMAs, but in summary they consist of the following:
  - Phase 1A North Bridge Structure B1 – alternative design that reduces the overall width of the bridge to accommodate 2 vehicular lanes (rather than 4), and alternative designs to associated road infrastructure;
  - Phase 1A North Tilling Road West / Brent Terrace North Junction – alternative design to the junction which reduces the need for temporary tie in works with Brent Terrace North;
  - Phase 1A North River Bridge 1 and Western & Central River Brent Alteration & Diversion Works – alternative design for River Bridge 1 to slightly lengthen the structure to assist with buildability, of the bridge abutments, which results in an alternative design to a small element of the Western & Central River Brent Alteration & Diversion works; and
  - Phase 1A North Central Brent Riverside Park – as a result of the RMA described above, alternative designs are proposed for a small section of the Riverside Park including Nature Park 5.
- 1.7. This report should be viewed alongside the Environmental Statement Revised ES FIR and previously submitted environmental information when determining these Phase 1A (North) RMAs elements to provide a complete set of relevant environmental information. This report provides an assessment of the proposed scheme alternatives to determine whether they are likely to result in any new or different significant environmental impacts or mitigation from those previously reported. Where

impacts remain as per the Environmental Statement Revised ES FIR and previously submitted environmental information a Statement of Conformity (SOC) is provided. This assessment has been based on a review of the alternative designs as reported in the AECOM technical notes which accompany this submission.

- 1.8. Whilst the below elements are the subject of four separate RMAs, they are considered collectively for the purposes of this report. Each of the RMAs is subject to an Explanatory Report produced by the planning consultants Quod, which sets out the proposed alternatives and detail of the RMAs.

### **RMA 1: Tempelhof Bridge**

- 1.9. Tempelhof Bridge is located to the directly south west of Brent Cross Shopping Centre spanning across the River Brent, Prince Charles Drive, A406 and Tiling Road. It will connect the new Tempelhof Bridge with the future Market Quarter Zone. The new Tempelhof Bridge will be located directly east of the existing bridge.
- 1.10. The alternative design for the proposed Tempelhof Bridge comprises of the following:
- Removal of the northbound and southbound bus lanes across the new Tempelhof Bridge. The bridge will now consist of a single lane carriageway with no bus priority measures;
  - Relocation of the proposed northbound bus stop from within the bus lane, onto the general traffic lane;
  - North of the bridge, reduction in flare length of the Tempelhof bridge northbound approach to the western roundabout as well as a reduction in width from three traffic lanes to two traffic lanes; and
  - South of the bridge, reduction in capacity to from two general traffic lanes to a single lane. Southbound bus stop to be relocated onto single lane as opposed to previous dual lane.
- 1.11. The proposal for Tempelhof Bridge involves the removal of the dedicated north and southbound bus lanes as shown in **Drawing BXCR-URS-B1-HS-AP-SE-00001**. As such, the bridge would consist of a single lane carriageway with no bus priority measures.
- 1.12. The provision of a narrower structure leads to a direct reduction in construction cost and programme. It is proposed to move the north abutment south and the south abutment north marginally, such that overlap between new and existing structures is altogether removed. The new bridge structure can then be constructed in its entirety before the existing structure needs to be demolished, thus reducing the amount of disruption to the public, and reducing the amount of phasing and construction complexity facilitating a reduction in cost.
- 1.13. The construction method will be similar to that reported in the Revised FIR. Construction of the two approach structures will be undertaken in a number of phases and the general structure, i.e. height and location minus the western lanes, will remain the same albeit in a narrower form.

### **Traffic and Transport**

- 1.14. As part of the Phase 1A (North) alternatives, AECOM has re-run a number of VISSIM micro-simulation traffic models to assess the operational performance of the Tempelhof Bridge and the impact of the alternative design to identify whether removing bus lanes on Tempelhof Bridge is a feasible option.
- 1.15. The following findings were drawn from the Phase 1A (North) VISSIM study:
- The performance of the VISSIM models that include a single lane (for all traffic) in each direction demonstrate little impact from the RMA scheme models in terms of changes to average journey times and average queue lengths;

- The alternative design provides a direct benefit in the form of a reduced pedestrian waiting time and periods between green lights for the standalone Toucan crossing that is proposed on new Tempelhof Bridge. This effectively gives additional green light time to the traffic which in its own right provides a level of benefit to motorised users (both bus and non-bus traffic);
  - The removal of the southbound bus lane has no impact on the operation of the southbound carriageway given that queues never extend as far back as its on-set;
  - In a southbound direction there is a reduction of capacity from a dual lane to a single lane south of the bridge and on the approach to Market Square. The proposed alteration is likely to cause increased congestion due to when queues reach a certain length they cannot disperse over two lanes. In addition, the southbound bus stop will now cause minor delays to general traffic as the bus stop is re-located on the single carriageway, meaning reduced opportunities for non-bus traffic to overtake;
  - In a northbound direction, the alternative design results in minor increases to journey time and queue length. The reason for these minor dis-benefits are due to the width of the new Tempelhof entry into the Western roundabout being reduced, meaning marginally higher queue lengths and for buses, the minor benefit of the bus lanes being lost. For non-bus traffic, some vehicles now experience additional delay as a result of the northbound bus stop which is relocated from the bus-lane to the general traffic lane;
  - Average queue lengths are forecast to increase by a maximum of 4 to 5 PCUs following the implementation of alternative design which is deemed insignificant and unlikely to cause any detrimental impact to the operation of the network; and
  - In terms of general network performance parameters, the results indicate that there will be virtually no change to the operation of the network in terms of changes to average vehicle speeds and average vehicle delay times.
- 1.16. Based on the Phase 1 VISSIM model it is concluded that the impact times and queues on the phase 1 network will be minimal, with some locations / time periods showing minor dis-benefits compared to the previous transport modelling undertaken on Tempelhof Bridge, including dedicated bus lanes.
- 1.17. Whilst the impact on the network and the volume of both bus and general traffic is likely to change significantly in the end-state (2031), this initial assessment of the Phase 1 (2021) scheme suggests that removing the bus lanes will not have a significant impact on traffic flows.
- 1.18. It should be noted that both the Air Quality and Noise and Vibration assessments as reported in the Revised FIR assessed the baseline, and the end state 2031 with and without the BXC Scheme, do not assess the 2021 Phase 1 scenario because this is not an EIA requirement.
- 1.19. For further detail regarding the VISSIM micro-simulation traffic model by AECOM please refer to the VISSIM Assessment of Bus Lane Removal on Tempelhof, Document Number 47065005-TP-RPT-081).

## Townscape and Visual Impact

- 1.20. The proposed alternatives to the bridge form will be largely similar to the existing elevation. Although the outer spans would be reduced slightly for the reasons described above, this will not have a significant impact on the visuals (AVRs) as assessed in the Revised FIR, Townscape and Visual Impact Assessment.
- 1.21. The alternative design for the proposed Tempelhof Bridge will result in AVR 14E and AVR 14W reported in the Revised FIR being inaccurate.
- 1.22. **AVR 14E:** The view is positioned on the existing Tempelhof Bridge looking east along the A406 North Circular corridor towards the Living Bridge and beyond. The current view shows the replacement

Tempelhof Bridge with two north and southbound lanes and a central reservation. The western lanes (northbound) were positioned over the existing bridge. The proposed alternative will not affect the bridge height as previously assessed within the Revised FIR. However, the positioning of the view is not accurate for the alternative design. Whilst the view itself would remain unchanged it would be located further east and would not illustrate two lanes in either direction.

- 1.23. The updated view would remain in the same position and look onto the western elevation of the bridge through the southbound barrier.
- 1.24. **AVR 14W:** This view is positioned on the existing Tempelhof Bridge facing west towards the M1 Junction. The view as shown in the Revised FIR would remain valid as 14E, but would be positioned further east.

### Noise and Air Quality

- 1.25. As previously discussed under Traffic and Transport the alternative Tempelhof Bridge design has to date only been assessed for the 2021 Phase 1 scenario within the VISSIM model, which was not assessed in the Revised FIR. Consequently, until 2031 traffic information is available an update of the noise and air quality assessments cannot be undertaken. This will be provided to the LBB during the determination period to inform decision making of these RMAs.
- 1.26. In relation to the available 2021 Phase 1 transport data, it is noted that the alternative design has the potential to increase congestion by buses stopping on the main bridge road at both the north and south approaches, rather than in the previously designated bus lane. The buses stopping at both the north and south approaches are likely to be short-term.
- 1.27. In accordance with LAQM.TG (09), the air quality detailed dispersion model has reduced traffic speeds at junctions, roundabouts and areas where there is the likelihood for congestion. Given that the air quality model incorporates reduced traffic speeds, and that the short term congestion from buses stopping cannot be replicated in the air quality model, the findings of the Revised FIR air quality assessment remain applicable and valid with the amendments to the Tempelhof Bridge design development.

### Conclusion

- 1.28. Having reviewed the additional information provided in relation to the proposed alternative design for Tempelhof Bridge, it is concluded that this will not result in a material change to the environmental impacts (with no new or different significant impact identified) and mitigation measures reported in the Revised FIR. However, conclusion is based on a review of 2021 transport data only and will require further review and reassessment once 2031 data are available.

### RMA 2: Brent Terrace North / Tiling Road

- 1.29. The alternative design currently proposed for Brent Terrace North and Tiling Road comprise the realignment of the junction as shown in **Drawing BXCR-URS-AH-RM-DR-CE-00013**. The realignment seeks to reduce the impact on the Jesus House plot previously due for demolition in Phase 1A (North).
- 1.30. The proposed alternative highway alignment consists of moving the junction of Brent Terrace North and Tiling Road junction north-east towards the Cardiff House and the A406 slip road, using the existing Brent Terrace North. On Tiling Road, the alignment follows the current RMA design on the south side and is only modified at the junction to suit the new location.
- 1.31. An additional length of retaining wall is required at the back of the southern footway / cycleway (as shown in **Drawing BXCR-URS-AH-RM-DR-CE-00013**) due to the level difference between Tiling

Road and Jesus House carpark. The proposed retaining wall will come close to the Jesus House building façade, with the potential for disturbance to the structural integrity to the building foundations. Several options are being explored to reduce the impact of the retaining wall but the impacts are not likely to be significant.

### Traffic and Transport

- 1.32. The alterations do not impact the A406 off slip or M1 / A406 circularly. Queuing capacity on Tiling Road for eastbound traffic will increase, with no change in capacity for westbound Tilling Road and Brent Terrace North.

### Noise and Air Quality

- 1.33. The proposed alterations include the realignment of the junction so that it does not impact Jesus House, a place of worship. The noise and air quality assessment included in the Revised FIR did not include Jesus House as a sensitive receptor because, at that stage it was not due to be retained as part of the Development. In accordance with LAQM.TG(09) the short-term objectives apply for a place of worship and the impact on the realigned junction would need to be quantified. From a review of the existing modelled receptors used in the previous assessment, there is no similar existing receptor (in terms of the location and distance to a similar junction) which could be used to determine the likely significance of impacts at Jesus House. Consequently, the modelling for the fully completed masterplan will consider and determine the significance of noise and air quality impacts at Jesus House. In the absence of updated traffic data for 2031 it is not possible to determine whether any new or different impacts on noise or air quality would arise. This junction will be subject to further re-assessment once 2031 traffic data are available.
- 1.34. As per the Tempelhof Bridge RMA it is anticipated that updated noise air quality modelling will be undertaken for this junction during the determination period once 2031 traffic data are available.

### RMA 3: River Bridge 1 and River Realignment

- 1.35. The driver for the alternative design of River Bridge 1 is the buildability of the south abutment which was positioned in the existing river channel. Under this arrangement the phasing of the works would require an advanced temporary river diversion prior to construction of the abutment.
- 1.36. It is therefore proposed to develop the design by moving the bridge to the south and increasing the bridge width, such that the bridge spans the existing channel as well as the proposed channel. Repositioning both abutments to the south with a subtle rotation to improve the skew also requires the realignment of the proposed channel slightly to the south. This will increase the bridge span by approximately 4m in length to 26m in total.
- 1.37. As a consequence of the required changes at River Bridge 1 the proposed River Brent channel has been realigned to the south over a length of approximately 90m where it passes beneath the bridge. As shown in **Drawing BXCR-URS-RB-XX-DR-HD-00010**, the realignment starts at the downstream side of the planned backwater feature inside the western roundabout (Nature Park 5) and terminates approximately 40m upstream of River Footbridge 10. The realignment moves the centreline of the river to the south by a maximum of between 5 and 6m. Outside of this area the alignment is unchanged.
- 1.38. The consequences of this alignment on flood flows will be minor. The main flow-carrying components of the channel are of the same dimensions as the previous alignment, and the bridge span has increased, allowing a greater flow area for the most extreme events.

- 1.39. This revised alignment will be included in the existing hydraulic model and will be checked by AECOM to ensure there is no detrimental impact from this change on the flood risk for the channel or adjacent areas. This will be confirmed by the RMA determination period.

### Water Resources and Flood Risk

- 1.40. The assessment of the proposed design amendments to River Bridge 1 is reported in the River Bridge Design Development Report produced by AECOM. It concludes that the impact of the proposed alteration to the bridge will be negligible in terms of the hydraulic design. Based on a review of the report it is concluded that the flood risk or water resource impact will not change from those reported in the Revised FIR.

### Air Quality and Noise

- 1.41. The proposed changes to the vehicular River Bridge 1 relate to structural amendments only. The proposed changes do not affect the overall road layout assessed in the noise and air quality assessment or the traffic flows used therein. Therefore, the findings of the Revised FIR noise and air quality assessment remain applicable and valid.

### Ecology

- 1.42. The design alternatives presented above will not alter the ecological assessments as per the Revised FIR. However, the design alternative for Bridge 1 will result in reduced construction impacts on aquatic ecology.

### RMA 4: Central Brent Riverside Park (inc. Nature Park)

- 1.43. In relation to the alternative channel re-alignment (RMA 3) there will be minor alteration to the Central Brent Riverside Park. From a review of the proposed amendments to the park it is concluded that no new or different impacts will result from those reported in the Revised FIR.

### Conclusions

- 1.44. No new or different likely significant environmental impacts will arise from the four alternative design RMAs for Phase 1A (North). Therefore, the Environmental Statement together with the Revised FIR and other previously submitted environmental information remain valid for the purpose of determining the RMAs. However, once further traffic data are available for the end state 2031 network, including these alternative designs, it is anticipated that an additional review of the Revised FIR will be required with potential further modelling if necessary.

# UK and Ireland Office Locations

