

From: Williams, Sion M. <Sion.M.Williams@cyfoethnaturiolcymru.gov.uk>
Sent: 06 March 2025 10:22
To: Jon Stoddard
Cc: North Planning
Subject: RE: A494 River Dee Bridge Replacement - Flood Modelling Scoping Reports

Good morning Jon,

Apologies for the delay, I have now received Hydrology comments in relation to your below email on the hydrology updates to both the River Dee and Queensferry Drain reports and they are as follows

A494 River Dee

Table 3.1 – As a gauged QMED has been calculated for Ironbridge it would be useful to include this in the calculation record for comparison. Perhaps somewhere in table 3.2 and explain why it has been rejected as a donor station.

Table 3.2 – For this study site, the greatest difficulty is estimating QMED given that there are no reliable high flow gauging stations downstream of Manley Hall. The catchment below Manley Hall is where there is significant flood plain attenuation which is therefore not well represented hydrometrically. Whilst the WINFAP guidance does state that six donor stations should be used, NRW recommend that generally only one or two donor station is enough. Using gauges on the Alyn which is significantly affected by swallowholes upstream of Rhydymwyn and the gauges on the Clwyd seems so incongruous given our hydrological understanding of those rivers even though that does concur with the WINFAP guidance. However, using Manley Hall alone isn't appropriate either as it doesn't account for the attenuation in the flood plain meaning estimates would be too high. During real events Ironbridge tends to peak only slightly higher than Manley or even can be lower due to the attenuation. In addition, there is significant uncertainty in the recorded high flows at Ironbridge gauging station meaning it can only be used with caution for QMED estimation. For this study, using the six donor stations does appear to give a more realistic QMED estimate when compared to the limited available evidence. My calculations suggest gauged Ironbridge QMED to be around 192 m³/s and so the estimated QMED of 257 m³/s at Ironbridge is possibly more conservative (higher).

Given the difficulties in QMED estimation in the lower Dee as described above it would be useful to include in table 3.2 a comparison of gauged QMED estimate at Ironbridge gauging station and a comparison of QMED using only Manley Hall as a donor and a brief explanation of why these have been rejected (Manley is not representative of the attenuation and uncertainty in gauged data at Ironbridge).

Table 3.4 – 8005 has been removed from the IB pooling group due to "Discordant QMED estimation". What does this mean?

NRW recommends that an URBEXT2000 threshold of 0.3 is used when creating a pooling group, not the default value however in this case it will make very little difference to the pooling group.

Table 5.2 – Agree that increasing storm duration to 49 hours is appropriate for this study.

Table 6.5 – "*The flows in the River Dee are influenced by abstraction in the upper catchment*" is incorrect. The majority of abstractions from the main river are below Manley Hall gauging station, the largest of which is the UU Huntington abstraction located within the study area just north of where the A55 crosses the River Dee.

A494 Queensferry Drain

A detailed and thorough calculation record with all decisions clearly recorded. Agree that ReFH2 is the preferred method. The critical storm duration is going to be tested during the modelling phase. Please can either this calc record or an accompanying report be updated to include the outcome of that testing.

Kind regards,

Siôn M. Williams

Cynghorydd - Cynllunio Datblygu / Advisor - Development Planning

Gwasanaeth Cynghori Cynllunio Datblygu / Development Planning Advisory Service

Cyfoeth Naturiol Cymru / Natural Resources Wales

From: Jon Stoddard <j.stoddard@rmlconsult.com>

Sent: 13 January 2025 12:03

To: North Planning <NorthPlanning@cyfoethnaturiolcymru.gov.uk>; Williams, Sion M.

<Sion.M.Williams@cyfoethnaturiolcymru.gov.uk>

Subject: FW: A494 River Dee Bridge Replacement - Flood Modelling Scoping Reports

Rhybudd: Deilliodd yr e-bost hwn o'r tu allan i'r sefydliad. Peidiwch â chlicio dolenni, atodiadau agored nac sganio codau QR oni bai eich bod yn cydnabod yr anfonwr ac yn gwybod bod y cynnwys yn ddiogel.

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Good morning Sion,

Happy New Year to you and your colleagues, we hope that you enjoyed some time off over the Christmas period.

We are looking to arrange a series (or in any combination) of Teams meetings with you to discuss various aspects of the water environment in relation to the above scheme that may not be covered in the EIA Scoping Report. The subject areas we would like to cover are:-

1. Queensferry Drain – design of banks and arrangements for future maintenance operations
2. Sedimentation Modelling and de-silting operations
3. Water Quality Data and assessment under the Water Framework Directive
4. Flood Modelling

With regards to the latter, the flood risk team have undertaken a hydrology update for both watercourses of the river Dee and Queensferry Drain that we attach for your information and approval.

We look forward to hearing back from you and also to receiving comments on the EIA Scoping Report by the end of January 2025.

Regards

Jon

Jon Stoddard

Principal Landscape Architect and Environmental Coordinator

Richards, Moorehead & Laing Ltd

e j.stoddard@rmlconsult.com

t 01824 704366 **ext.** 115

m 07701 362290



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From: Jon Stoddard

Sent: 10 December 2024 12:59

To: Williams, Sion M. <Sion.M.Williams@cyfoethnaturiolcymru.gov.uk>

Subject: RE: A494 River Dee Bridge Replacement - Flood Modelling Scoping Reports

Hi Sion,

Many thanks for getting back to us, we look forward to receiving the comments in due course.

Do you think we could we organise a Teams call as soon as possible to discuss the gradients of the bank either side of Queensferry Drain (?), we are currently assuming 1 in 1.5 for the flood modelling exercise.

Regards

Jon

Jon Stoddard

Principal Landscape Architect and Environmental Coordinator

Richards, Moorehead & Laing Ltd

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From: Williams, Sion M. <Sion.M.Williams@cyfoethnaturiolcymru.gov.uk>

Sent: 10 December 2024 12:52

To: Jon Stoddard <j.stoddard@rmlconsult.com>

Subject: RE: A494 River Dee Bridge Replacement - Flood Modelling Scoping Reports

Afternoon Jon,

I've received comments back from the flood risk team and I will hopefully be in a position to issue to them by Friday.

Kind regards,

Siôn M. Williams

Cynghorydd - Cynllunio Datblygu / Advisor - Development Planning

Gwasanaeth Cynghori Cynllunio Datblygu / Development Planning Advisory Service

Cyfoeth Naturiol Cymru / Natural Resources Wales

From: Jon Stoddard <j.stoddard@rmlconsult.com>

Sent: 10 December 2024 11:48

To: North Planning <NorthPlanning@cyfoethnaturiolcymru.gov.uk>; Williams, Sion M.

<Sion.M.Williams@cyfoethnaturiolcymru.gov.uk>

Subject: FW: A494 River Dee Bridge Replacement - Flood Modelling Scoping Reports

Rhybudd: Deilliodd yr e-bost hwn o'r tu allan i'r sefydliad. Peidiwch â chlicio dolenni, atodiadau agored nac sganio codau QR oni bai eich bod yn cydnabod yr anfonwr ac yn gwybod bod y cynnwys yn ddiogel.

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Hi Sion,

Sorry to chase again, but would it be possible to set up a Teams call about the flood modelling and also the treatment of the banks to the Queensferry Drain prior to the Christmas break?

If you could let us know your availability it would be much appreciated so that we can progress with the detailed design and EIA.

We look forward to hearing from you shortly.

Regards

Jon

Jon Stoddard

Principal Landscape Architect and Environmental Coordinator
Richards, Moorehead & Laing Ltd

e j.stoddard@rmlconsult.com

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From: Jon Stoddard

Sent: 05 November 2024 10:24

To: Sion.M.Williams <sion.m.williams@cyfoethnaturiolcymru.gov.uk>; North Planning <NorthPlanning@cyfoethnaturiolcymru.gov.uk>

Subject: FW: A494 River Dee Bridge Replacement - Flood Modelling Scoping Reports

Hi Sion,

Sorry to chase, but have you or colleagues had chance to consider the proposed modelling approach and other issues surrounding Queensferry Drain?

We are keen to progress these matters as the scheme is being finalised and soon to be taken through a public consultation process.

Regards

Jon

Jon Stoddard

Principal Landscape Architect and Environmental Coordinator
Richards, Moorehead & Laing Ltd

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From: Gethin Morgan <Gethin.Morgan@mottmac.com>

Sent: 14 October 2024 15:49

To: Williams, Sion M. <Sion.M.Williams@cyfoethnaturiolcymru.gov.uk>

Cc: Natalie Haines <natalie.haines@mottmac.com>; Marek Nekula <Marek.Nekula@mottmac.com>; Jon Stoddard <j.stoddard@rmlconsult.com>; Edwards Neil (CEFNFFYRDD) <NeilEdwards@nmwtra.org.uk>; Fernando, Sasanka (CCRA - Economic Infrastructure - Projects) <Sasanka.Fernando@gov.wales>

Subject: A494 River Dee Bridge Replacement - Flood Modelling Scoping Reports

Hi Sion,

Please find attached scoping reports setting out our proposed modelling approach to the River Dee and the Queensferry Drain.

We would welcome any thoughts / comments NRW have on these.

Kind regards,
Gethin

Gethin Morgan

Pronouns: he, him, his
Associate - Technical Advisor
D +44 (0)1492 588332

Mott MacDonald Restricted

From: Gethin Morgan
Sent: Thursday, October 3, 2024 9:30 AM
To: Williams, Sion M. <Sion.M.Williams@cyfoethnaturiolcymru.gov.uk>
Cc: Natalie Haines <natalie.haines@mottmac.com>; Marek Nekula <Marek.Nekula@mottmac.com>; Jon Stoddard <j.stoddard@rmlconsult.com>; Edwards Neil (CEFNFFYRDD) <NeilEdwards@nmwtra.org.uk>
Subject: RE: A494 River Dee Bridge Replacement - NRW Meeting 11/09/2024

Hi Sion,

Sorry to chase, just following up to see if you have been able to consider the below yet?

In addition we would like to arrange a meeting with NRW's maintenance and operation team to discuss the latest proposals for the Queensferry Drain diversion and the pumping station. Would it be possible to arrange a date for this also? We can provide some drawings and explanation to the team before the meeting for them to consider.

Thanks,
Gethin

Gethin Morgan

Pronouns: he, him, his
Associate - Technical Advisor
D +44 (0)1492 588332

From: Gethin Morgan
Sent: Wednesday, September 25, 2024 2:32 PM
To: Williams, Sion M. <Sion.M.Williams@cyfoethnaturiolcymru.gov.uk>
Cc: Natalie Haines <natalie.haines@mottmac.com>; Marek Nekula <Marek.Nekula@mottmac.com>; Jon Stoddard <j.stoddard@rmlconsult.com>; Edwards Neil (CEFNFFYRDD) <NeilEdwards@nmwtra.org.uk>
Subject: RE: A494 River Dee Bridge Replacement - NRW Meeting 11/09/2024

Hi Sion,

Thanks for the clarifications and information.

We propose to issue 2Nr modelling scoping reports* to you 11th October. Couple of queries:

1. Is the current PO you have with NMWTRA sufficient to cover NRW's input here?
2. How long would you envisage it taking for NRW to review these reports and return any comments?

Also, when do you expect that responses to the Queries Log to be available?

Many thanks,
Gethin

*(*1Nr to cover Queensferry Drain and 1Nr for the River Dee.)*

Gethin Morgan

Pronouns: he, him, his

Associate - Technical Advisor

D +44 (0)1492 588332

From: Williams, Sion M. <Sion.M.Williams@cyfoethnaturiolcymru.gov.uk>

Sent: Tuesday, September 24, 2024 8:41 AM

To: Gethin Morgan <Gethin.Morgan@mottmac.com>

Cc: Natalie Haines <natalie.haines@mottmac.com>; Marek Nekula <Marek.Nekula@mottmac.com>; Jon Stoddard <j.stoddard@rmlconsult.com>

Subject: RE: A494 River Dee Bridge Replacement - NRW Meeting 11/09/2024

Bore da Gethin,

In relation to the queries raised in the meeting on the 11/09/2024, please see below.

To confirm the current situation with regards to the existing model and known changes relevant to the Queensferry area:

- The most current version of the model is an amalgamation of 2 models, whilst dated 2020 – no updated hydrology was used in this model.
- A review of the hydrology used within the model should be undertaken to understand if there has been any significant change to predicted flows, with appropriate action taken if there has been a notable change.
- The All Wales LIDAR project has completed since the previous model was commissioned (available via DataMapWales). This should be considered to understand if there has been any significant changes to ground levels within the model domain that may impact on understanding of flood risk locally.
- [Climate change guidance for Risk Management Authorities](#) was updated by Welsh Government in August 2022. NRW are in the process of updating climate change allowances within the Tidal Dee model to reflect this guidance. This should be completed during September 2024. If outputs are required, then these will need to be obtained via our Data Distribution team.
- In addition, NRW are currently undertaking investigative, and maintenance, works along Broughton Brook, Pentre Drain N and S, Sandycroft Drain and Queensferry Drain. Whilst this work is intended to maintain the performance of the existing system, it may highlight defects, or propose upgrades, that may have associated impacts on the existing hydraulic model. We will not be able to confirm if these works will have any implications on our understanding of risk in the area until well into 2025. This could have implications for assumptions and representations of structures within the existing model that may require us to undertake updates but cannot confirm if this is the case at this time.

With regards to the proposed timeline presented last week, This may be ambitious and you will need to consider the following. For any additional data required from our data distribution team or DataMapWales, it may take up to 20 working days to supply data that is not available online. Any updated modelling will need to be reviewed, potentially by multiple teams within the organisation. This may be subject to a turnaround time of up to 4-6 weeks to review modelling outputs. This is dependent on the scale of model updates and team availability. You will appreciate that this work needs to be fit into an existing pipeline of work.

Kind regards,

Siôn M. Williams

Cynghorydd - Cynllunio Datblygu / Advisor - Development Planning

Gwasanaeth Cynghori Cynllunio Datblygu / Development Planning Advisory Service

Cyfoeth Naturiol Cymru / Natural Resources Wales

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From: Gethin Morgan <Gethin.Morgan@mottmac.com>

Sent: Tuesday, September 17, 2024 3:58 PM

To: Williams, Sion M. <Sion.M.Williams@cyfoethnaturiolcymru.gov.uk>

Cc: Natalie Haines <natalie.haines@mottmac.com>; Marek Nekula <Marek.Nekula@mottmac.com>; Jon Stoddard <j.stoddard@rmlconsult.com>

Subject: A494 River Dee Bridge Replacement - NRW Meeting 11/09/2024

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Hi Sion,

Following up on the meeting last Wednesday.

The key discussion points / actions we noted were:

1. NRW clarified model description terminology being used and what MM have been referring to a new model is not a new model but an amalgamation of previous models.
2. Health check needed on the model in consideration of point 1.
3. New LiDaR data available on DataMapWales, existing NRW model is based on older data from 2017.
4. The hydrological analysis – the climate change allowance will need to follow the latest guidelines.
5. The hydrological analysis – the suitability of the fluvial and tidal boundaries in the NRW model will be confirmed.
6. MM to finalise scoping report (in line with NRW guidance) and issue to NRW asap.
7. NRW to confirm upcoming studies that may impact on the modelling (between now and May-25).
8. MM to confirm outline schedule of future meetings and inputs.
9. Queries schedule - MM to prepare. Use of the same template.
10. Specific modelling questions to be added to the queries schedule.

I have attached the queries schedule referred to in items 9 and 10.

I would be grateful if you could liaise with the NRW team regarding item 7 and getting responses to the attached.

Many thanks,
Gethin

Gethin Morgan

Pronouns: he, him, his
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Associate - Technical Advisor

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