v4.0

HYDROLOGY REVIEW

The latest version of the Flood Estimation guidlines is : LIT 11832 (available

Project :	Gavray Drive FRA	**Job Number :**	

Competence level of analyst who carried out study :		**Complexity of study :**	Moderate
Revision			
Area Lead	THM		

	1st review	2nd review	3rd review
Date	10/02/2023		
Reviewer	PW		

PURPOSE OF THE HYDROLOGICAL STUDY and any particular concerns or as

The purpose of this study is to provide inflows for the Bicester_012 model which Hydrock has been requeste
The Biecester model consists of the Langord Brook, and several tribuytaires however, Hydrock's model revie
inflow: at the upstream extent of Langford Brook.
This study will provide peak flows for the following design events:
• 50% AEP – 1 in 2-year (QMED)
• 20% AEP – 1 in 20-year
• 1% AEP – 1 in 100-year
• 0.1% AEP – 1 in 1,000-year
The calculated peak flows will be used to produce hydrographs for the 2% AEP, 1% AEP, 1% + Central CC Allo
used as point inflows for the hydraulic model.
The central climate change allowance applied to the 1% AEP fluvial event is 15%, in line with the Cherwell ar
allowances.
The purpose of this document is to provide a record and justification of the methodology and outputs of the
catchment.

The scope of the project is moderate and will involve a review of the existing hydrological study undertaken

SUMMARY - IS THE HYDROLOGY FIT FOR PURPOSE?

No, this is not currently fit for purpose. There are several points that need addressing to impro

- Despite a level gauge being present this data has not been fully optimised to help improve flo
- Previous hydrology study has not been fully used to replicate and improve methods used in t
- No evidence provided to support checks of catchment boundary, geology or detailed sewer n
- Only one Flow estimation point has been used for the whole catchment, more points are requ
- No sensitivity testing carried out to assess critical storm duration for site.
- More evidence is required for how statistical methods have been used to define pooling grou

MODEL REVIEW PROCESS

Hydrology report and model reviews are an essential component of the Hydrology Quality Assurance (
Hydrology calculations and that they are suitable for the intended purpose. Evidence that the Hydrolog
external parties and hence all reviews should be written with an expectation that they could be read ex

Should any issue(s) be raised during the review process, which require attention, the reviewer should
to allow the Hydrologist to complete the changes as appropriate. Completion of this Hydrology Review
Hydrology calculation approval. Once the suggested changes have been completed, the reviewer may
resubmitted for further review to establish whether the actions have been completed satisfactorily. Onl
completed satisfactorily, will the model be approved and the quality assured by the reviewer.

It is recommended that the reviewer makes good use of the fluvial design guide chapter 2
http://evidence.environment-agency.gov.uk/FCERM/en/FluvialDesignGuide/Chapter2.aspx?pagenum=

Depending on the work being reviewed some questions or entire sections may not be relevant, in whic
completion of the review the reviewer may choose to use the following colour coding system to alert th
(if any).

Comments should be colour coded using the RAG (red, amber, green) Status shown at the top of the

Colour coding used:

OK – Good practice.
Minimum response: No minimum.
Maximum expected response: No maximum.
Planning: No Objection.

Green – Consider for future studies. Negligible impact on the results that is unlikely to change the ou
Minimum response: Acknowledge the comment in the spreadsheet and update the limitation section c
Maximum expected response: Actions done to address the issue identified.
Planning: No Objection.

Note: Taking action to address issues would be expected and some issues may be addressed coincid

Amber – Follow recommendation. Potential impact on the results that may change the outcome of th
Minimum response: Comments justifying the approach taken and update the limitation section of the r
Maximum expected response: Actions done to address the issue identified.
Planning: Consider objecting to the application based on comments highlighted in this category.

Note: Taking action to address issues should be undertaken, some issues may be addressed coincide

Red – Must do. Has an impact on the results that may have a significant impact on the outcome of th
Minimum response: Comments thoroughly justifying approach from applicant based on evidence and
sorted.
Maximum expected response: Actions done to address the issue identified.
Planning: Objection - Application to be objected if comments are highlighted in this category.
Note: If no action is taken the response must clearly demonstrate why the issue raised is not relevant
up with evidences. If issues highlighted red are ignored, then submissions should always be sent back

CHECKLIST FOR REVIEWING FLOOD ESTIMATES

This checklist is taken from a supporting document to the Environment Agency's Flood Estimation Gu
their own work (both internal staff and consultants working for us), supervisors carrying out internal re
calculations. The list can be filled in to create a record of the review. Rather than attempting to cover
would make the list rather long and unwieldy, it concentrates on common pitfalls. Some of the most c
highlighted. Reviewers are assumed to be familiar with the Flood Estimation Guidelines and compete

The structure of the checklist generally follows that of the calculation record, starting with the method s
the results.

The answer to most of the questions should be “Yes”. It is not always the appropriate answer, though
quick and approximate answer would not normally include a historic review or a lengthy calculation of
data. Evaluation should be appropriate to the level of detail and risk of the study. Before reviewing st
Agency, check the brief and ask the project manager what has been agreed with them.

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in Content Cloud)

4th review

pects that need review.

ed to review.
ew only involves a section of the model with one

owance and 0.1% AEP fluvial event, which will be

nd Ray Management Catchment peak river flow

e hydrological assessment of peak flows for the

for the Bicester_012 model.

ove the hydrological flow estimations.

ow estimates in this study.
that study.
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ps.

(QA) process that provides confidence in
ıy has undergone QA may be requested by
ıternally.

detail the action(s) required in sufficient detail
document does not automatically constitute
require that the Hydrology calculation be
ly once all the amendments have been

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ch case they can be marked 'not applicable'. On
ıe modeller to the priority of the actions required

page i.e.

ıtcome of the study.
ıf the report.

lentally by work on others.

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entally by work on others.

ıe study.
update the limitation section of the report if not

and the approach employed is justified backed
ı.

idelines. It can be used by analysts checking
views or staff reviewing consultants'
every aspect of a flood estimation study, which
ommon or severe errors or omissions are
nt to judge what choices are appropriate.

statement and ending with the presentation of

. For example, lower risk studies needing a
ReFH model parameters from flow and rainfall
udies carried out on behalf of the Environment

Green

Amber
Red
OK
N/A