Invitation to Quote

PROJECT BRIEF

Dewatering of the Gravel Seam and Water Features, including Kingfisher Pond, Northstowe

Section 1

PROJECT BRIEF

Dewatering of the Gravel Seam and Water Features, including Kingfisher Pond, Northstowe

Publication date:	(03/06/2020)
Return date & time:	(19/06/2020) no later than (13:00 Hours)
ITQ return address:	Via the electronic tendering portal
Contact Officer	**Mike Huntington**
Contact Officer Telephone:	(0770 4018477)
Contact Officer E-mail:	(Mike.Huntington@scambs.gov.uk)
Submission requirements:	(1 electronic copy via email to the email above by the end date and time)

Background information

1. South Cambridgeshire District Council (SCDC) provides local government services to the large rural district of South Cambridgeshire, which covers approximately 90,000 hectares, has 102 villages and forms the southernmost part of the county of Cambridgeshire. It is bordered by East Cambridgeshire District Council, Huntingdonshire District Council, North Hertfordshire District Council, Uttlesford District Council and totally surrounds the City of Cambridge. It is well served by a network of main roads that includes the M11, A10, A11, A14, A428, A505 and A603.
2. SCDC has pledged within its business plan to create a cleaner, greener and net zero-carbon future for our communities by 2024.
3. Procurement plays a significant part in the reduction of carbon due to the range of supplies, services and works procured by SCDC each year. SCDC's procurement is focussed towards selecting suppliers that are pursuing carbon reduction to achieve net zero emissions, whilst also actively decarbonising the provision of service services throughout the supply chain.
4. More information on South Cambridgeshire District Council can be found at www.scambs.gov.uk
5. South Cambridgeshire District is part of Greater Cambridge and the London Stansted Cambridge, Peterborough Growth corridor. We have significant developments in scale and complexity currently in the planning system or

coming forward over the next few years. The council is operating as a shared Planning service with Cambridge City Council.

6. Cambridge City Council (CCC) is based in the City of Cambridge, in the east of England, 50 miles north of London. A beautiful place to live and work, Cambridge is an historic University City with high quality architecture and attractive open spaces. It is also a city of national importance, being a world leader in higher education and many 21st century industries – information technology, telecommunications and commercial research, particularly the biotechnology sector. The population of Cambridge is currently 136,900. This is forecast to grow by nearly 13% over the next 11 years.

7. Terms used within this Invitation to Tender (ITT) refers to SCDC, South Cambridgeshire, SCDC Contract Manager. As this specification will form the basis of the contract and SCDC is leading on this procurement exercise on behalf of SCDC and CCC.

Description of services

8. The description of the services that are the subject of this Invitation to Quote can be found in Section 2.

Further contract information

9. This document is to be read in conjunction with the ITQ Bidding Instructions. Our Terms and Conditions.

10. This contract term is for the length of time to complete this assignment.

11. Regular contact with SCDC's contract manager will be required throughout the contract. This may take the form of telephone, face to face or email contact.

12. We will request named contacts from the successful bidder. This will include details of senior managers, providing an escalation route should there be any concerns during the contract period.

13. SCDC will provide payment to the successful company 30 days following successful delivery and from the date of the receipt of an undisputed invoice. Please note sub-contractors working for your firm must be paid within 30 days. SCDC's preferred method of payment is by Bank Automated Clearing System (BACS). Our payments guide can be found at:

    https://www.scambs.gov.uk/business/procurement/contracts-payment-guide/

Information to include in your response

14. The information that you provide should respond to our Questionnaire in Section 3B. It should let us know how your company intends to provide the services described in the 'Description of Services' section. In particular it should include:

    - Costs
    - how the service will operate and where from;
    - the team that will provide the services and a brief summary of their experience;
    - how you will ensure quality control and delivery on time;
    - contingency plans for unforeseen delays;
    - In order to address climate change and meet our objectives of carbon reduction please provide a policy document or statement confirming how your company is working towards net zero carbon and decarbonisation of your supply chain.
    - Any comments on the terms and conditions (if you are happy to accept please just state this).
    - Insurances

15. The successful company will have a good track record in providing these services and will able to demonstrate their experience by providing three directly relevant referees (see Section 3C).

Section 2: Description of Services

Dewatering of the Gravel Seam and Water Features, including Kingfisher Pond, Northstowe

Introduction

16. Northstowe is a new town development of about 10,000 dwellings located to the north west of Cambridge, adjacent to the villages of Longstanton and Oakington. The development is predominantly based around the former military base of RAF Oakington. It is split into 3 separate phases. Phase 1 is for approximately 1500 dwellings, Phase 2 for approximately 3500 dwellings and the balance of 5000 dwellings in Phase 3. The engineering works associated with the infrastructure for Phase 1 have been completed, and over 500 dwellings are now occupied, with over 1000 dwellings now having detailed planning permission. The Phase 1 part of the development was previously a golf course and was situated adjacent to the military base.

17. Residents in Longstanton have been expressing concern to both South Cambridgeshire District Council (SCDC) and the developer since 2015 that the water levels in various ponds and wells located on Longstanton's gravel seam were falling. Residents have identified Kingfisher Pond as a particular concern as this was the only water feature located on Northstowe Phase 1.

18. Longstanton residents are concerned about the effect on the ecological value of the water features and have observed that this only seems to have happened since the development began in 2015. They are concerned that works associated with the engineering elements of this phase have affected the aquifer.

19. SCDC seek to commission independent advice from a drainage engineer, to assess whether there are any long terms effects on the aquifer connected with any engineering operations associated with the first phase of the development of the new town, and if this is found to be the case, to advise on any possible solutions to address reductions in water levels in this and any other ponds in the vicinity. It is expected that the engineer will need to speak to various residents and organisations that been involved in discussions since the issue was first raised in 2015.

Background information

20. The plan (illustration 1 and also provided in more detail as appendix 1) below shows where the underlying river gravels and clay are located. Kingfisher Pond is highlighted with the red arrow to the west of the site. The plan also shows where the boreholes that were used to measure and monitor groundwater levels are located.

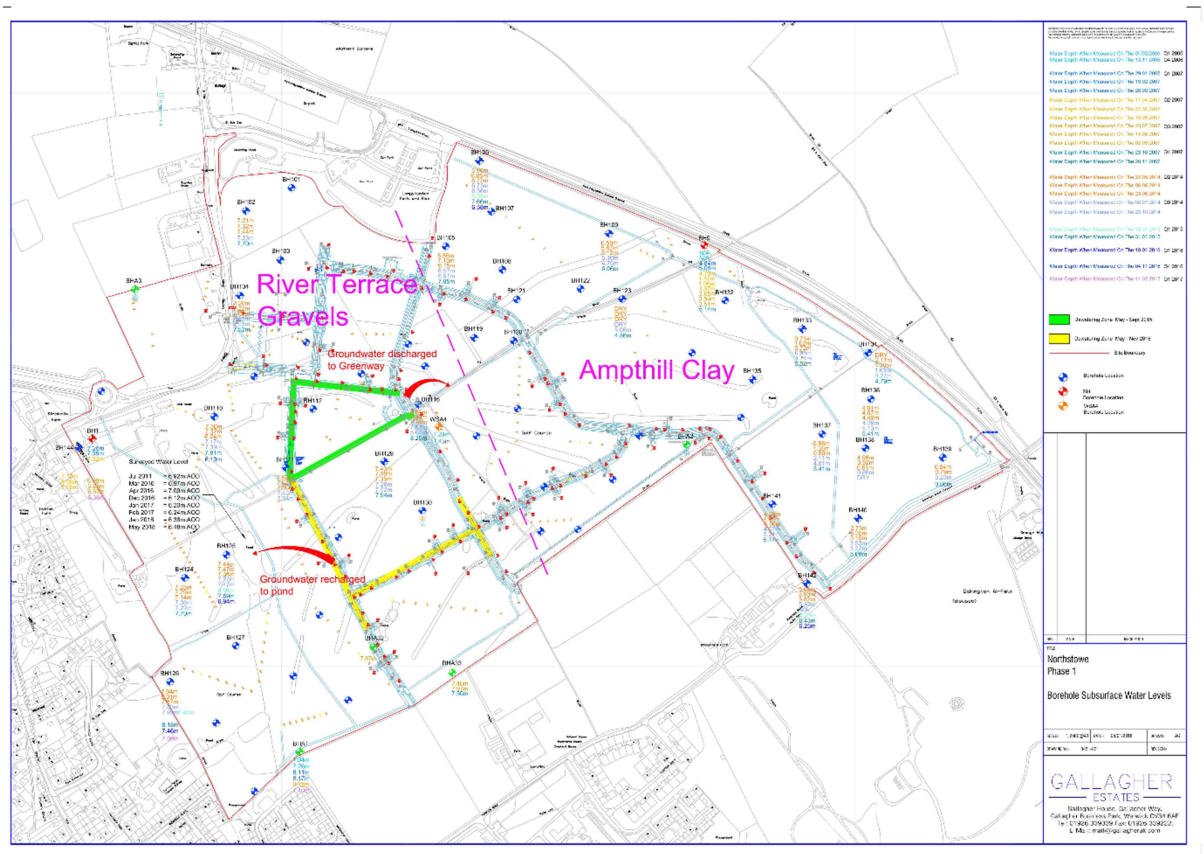


Illustration 1 – Northstowe Phase 1, Location of bore holes

21. When the area surrounding the pond was previously used as a golf course, Kingfisher Pond was apparently never fed by any stream, but seems to have been fed by groundwater. It also appears that the pond was not formed naturally but may have been excavated as an irrigation pond for the original Hatton Farm that was on the site. It is noted that the pond had never run dry in all the years that the area was a farm, not even in 1976. It is not clay lined.

22. As part of the masterplan for the development, some of the land adjacent to the pond has been laid out as sports pitches, and the ground for the pitches has been built up, presumably to help with drainage. The master developer has amended the design of the drainage scheme for the adjacent sports pitch land so that the pond is now being supplied with water draining from those sports pitches. To the south west corner of the pond there is an overflow which

maintains the maximum water level of the pond to allow bird nesting. This overflow has not been required since July 2015, when the pond was last full and when dewatering commenced.

23. The attached PDF composite masterplan shows the location of the pond in relation to the surrounding houses that are either under construction or occupied.

24. When the water level in Kingfisher Pond was low, the new attenuation ponds on Phase 1, adjacent to the Guided Busway, were full.

25. Wardell Armstrong (who are the consultants assessing the water levels for the developer), provided an interim report in July 2017 and promised a final report in April 2018, but this has not been received. It is understood that they have been monitoring the dataloggers that have been put in place to measure water levels.

26. In response to concerns that had been raised by residents in 2015, the developer explained that neither the proposed surface water drainage strategy nor the temporary dewatering that was necessary to allow development to start on Phase 1 would have had a significant impact on the aquifer that is hydraulically connected to the gravel seam. The long-term lack of rainfall and the high soil moisture deficit that is affecting the aquifer levels across the region and had impacted on the winter recharge over that year, would be a more likely reason. This view was supported by SCDC's drainage consultant, Simon Bunn. This evidence has been supported at a much broader level by Environment Agency quarterly groundwater updates, some of which are enclosed within this brief (Illustration 2). The Environment Agency's May 2019 groundwater report shows that the wider region still has well below normal groundwater levels. Although the rain over the winter will have helped it is not considered that this will have changed the situation that much. The Redlands Hall location on the attached map is the most relevant to South Cambridgeshire, and it shows groundwater levels as 'notably low' in the key box.

Objectives of the Study

27. The study has the following primary objectives:

- To consult members of the community and the Parish Council on their concerns relating to the gravel seam and water features that are located on it
- To discuss the issue with the SCDC's drainage engineer and the Master Developer
- To verify the data logging undertaken by the developer's consultant
- To review and report on the pond's condition

- To comment on the Environment Agency's reporting on groundwater conditions in East Anglia and the implications of this report for the aquifer underneath Northstowe and Longstanton
- To make recommendations regarding the pond, highlighting any potential concerns with the approach taken by the developer when undertaking their engineering and dewatering operations including:
    - Did dewatering and/or ditch excavations contribute to the collapse in water levels?
    - Has part of the aquifer been blocked or has water been diverted into the balancing pond on Phase 1 either directly or through seepage?
    - Did the construction of ditches cut into the gravels allowing the flow of the aquifer to be diverted?
    - Has the importing of a clay layer all over the Phase 1 site prevented rainwater replenishment of the aquifer and therefore exacerbated the problem?

Methodology

28. It is anticipated that the study will include both desk and field-based research. The process of community involvement in this study is viewed as being important in the production of the final report. The consultant should allow for time to discuss this with the community in his / her costs.

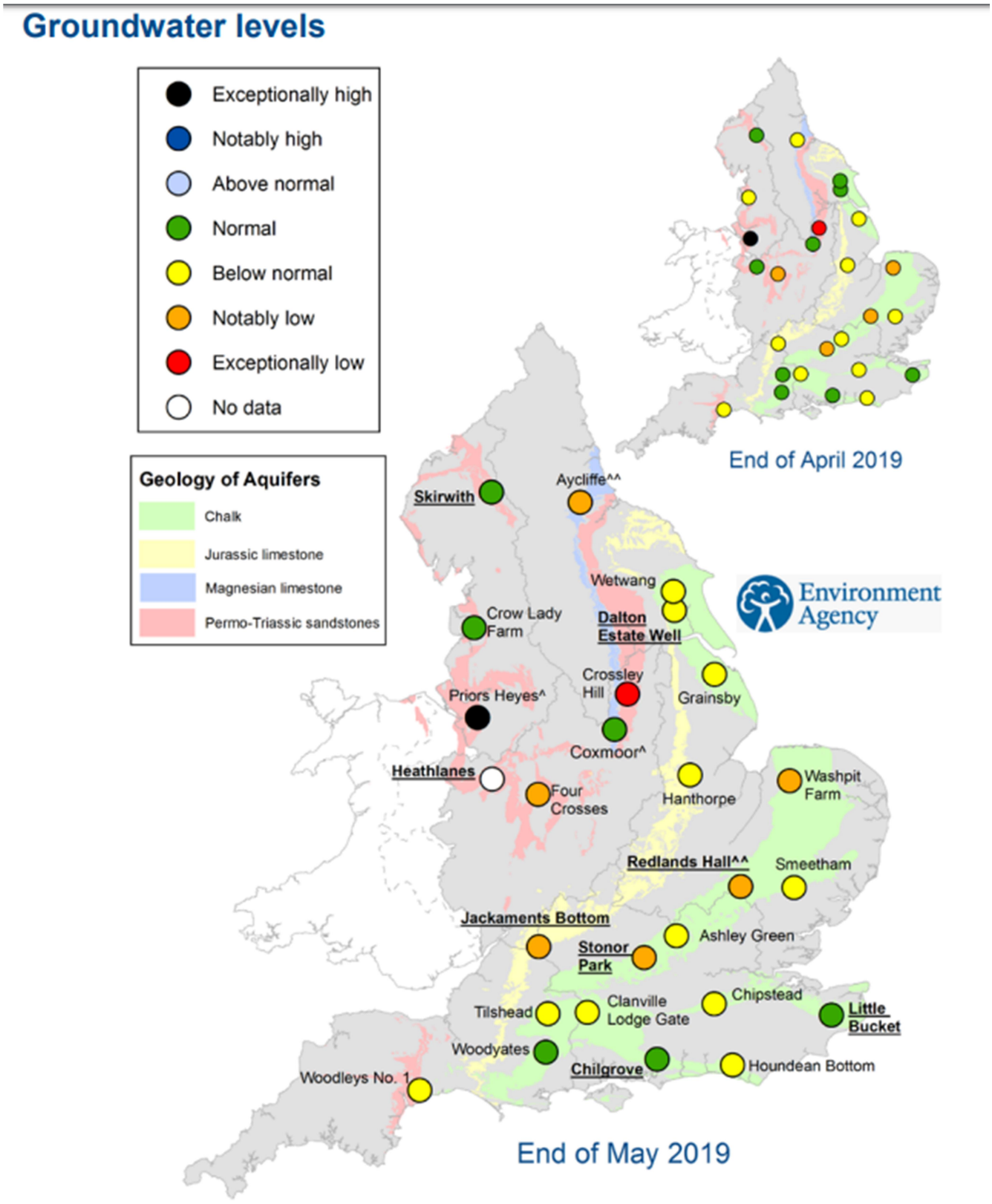


Illustration 2 – Groundwater levels, Environment Agency, 2019

Timetable

29. It is estimated that this work should take three months, with a draft report to be submitted by 30th September, and the final report to be completed by 30th October.

Costs

30. The budget for this study will be in the region of £10,000 inclusive of expenses.

Reporting

31. The nominated officer at SCDC is Mike Huntington (contact details supplied). The consultant is expected to contact the nominated officer at the start of the project and on submission of the draft report. An electronic version of the final report should be supplied at the conclusion of the project.

Proposal to Tender

32. The consultant's proposal to tender for this study should include details of:

- the relevant experience and competency possessed by the consultant and other personnel who will work on the project
- the methodology to be used in the study
- full costs and expenses
- a study timetable

Assessing tenders

33. Tenders will be scored based upon a weighting of 40% on value for money and 60% on technical ability.

Attachments

- Appendix 1 Subsurface water levels
- Appendix 2 Borehole results
- Appendix 3 Email from Simon Bunn (SCDC Drainage Engineer)

Section 3: Questionnaire

PART A

To: South Cambridgeshire District Council, South Cambridgeshire Hall, Cambourne Business Park, Cambourne, CB23 6EA

Quotation for: PROJECT BRIEF Dewatering of the Gravel Seam and Water Features, including Kingfisher Pond, Northstowe

I / We the undersigned, having examined the specifications are willing to execute the

Whole of the work required for £ _____

Explanation of your pricing:

We have calculated our prices based on a “bottom-up” assessment, where we have considered the time required for each task, and then multiplied this by the hourly rates of staff involved. The table below shows our working. We have then allowed some additional costs to cover uncertainty in the time estimates required for each task. Our fee is a fixed fee of £9,800, based on this “bottom-up” approach and allocation of risk.

Note we have not included for costs of any data. It is reasonable to assume that all data will be provided free of charge, and freely available. There is a small possibility that we may need to purchase rainfall data.

	Hours per task				Expenses
Rate (£/hr)	£		£		
Task					
Consult with members of the community and Parish Council (using web conferencing and phone calls)					
Identify list of water features					
Discuss issues with SCDC staff and Master Developer					
Verify data logging					
Visit pond, take photos etc					
Develop conceptual model (baseline)					
Produce technical note on baseline					
Develop conceptual model (post development)					
Produce technical note on post development					
Review data (e.g. borehole, rainfall data)					
Complete assessment of impacts and prepare report					
Total hrs					
Subtotal £	£				
Total					**£9,800.00**

Company Name	HR Wallingford, Ltd
Company Address	Howbery Business Park, Wallingford, Oxfordshire, OX10 8BA
Company Registration No	02562099
Telephone No	[redacted] 01491 822310 (Currently redirected to Mobile [redacted] Main office number 01491 835381
	Email Address[redacted]@hrwallingford.com

Employee Name	[redacted]
Date	17 June 2020

[redacted]

PART B: Questions

The following items match the award criteria specified in the ITQ Bidding Instructions hyperlinked at the start of this document. A typed attachment is acceptable providing it does not exceed the 2500 word limit. Brochures should not be included in the submission.

Method Statement - Written statements are required	Marks	Score 0-5
	60%	

Please provide a typed response (not exceeding 2500 words) about your organisation's understanding of the brief and your proposals to undertake and complete the services required to meet the requirements of the Invitation to Quote.

Our overall approach

It is very difficult to determine the impacts of the housing development without understanding the physical processes which occurred before the development took place and those which occur now. "Simply" looking at the data (e.g. groundwater levels in boreholes) does not provide a robust approach. For this reason we propose the project is undertaken by expert hydrologists and hydrogeologists who can assess the physical processes which fed the Kingfisher Pond and then confirm if and how they have changed as a result of the development. The approach will be independent. We propose that the work is undertaken taking into account guidance for expert witnesses (e.g. CPR-P35) https://www.justice.gov.uk/courts/procedure-rules/civil/rules/part35. This ensures trust in the project team and the results of the assessment.

In order to address the question "have the water levels in the gravels and ponds been affected by the housing development?" we need to understand how the system (by that we mean how the hydrogeology and hydrology) operated before the housing development began and then consider what impacts the development may have had (in particular on Kingfisher Pond). In short, the approach to the project needs to be based on good science, undertaken by independent experts who can not only review the data, but really understands what changes might have occurred to the physical processes.

Conceptual Modelling

The first phase of any project like this needs to consider the situation before the development took place. We refer to this as "developing a conceptual model". This understanding of the system will help our team of two hydrogeologists and hydrologists (see below) understand how the ponds operated (for instance how they were fed, how they drained and their connectivity with the gravels and other formations). It will also consider the geology of the area, including the relationship between the gravel and the clay. This is

Method Statement - Written statements are required	Marks	Score 0-5

exactly the same as a recent legal case which was settled in the High Court, where our project team reviewed old maps and reports, spoke to residents, and undertook research with the Environment Agency and British Geological Survey to get a real understanding of the system.

We will draw up a list of residents whom we should contact. We assume that the Parish Council has a list of people and their contact details that they can supply to us.

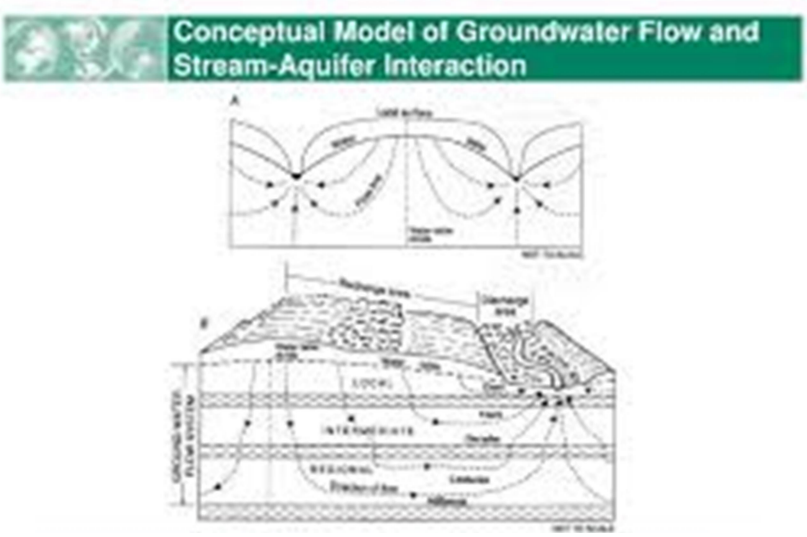
We will speak to these stakeholders (we suggest during the current coronavirus lockdown doing this using web conferencing tools like Microsoft Teams so that people can show us maps and other evidence as well as discuss information) but if that is not possible we will telephone them. We will also review data from the British Geological Survey, Environment Agency, plus other information such as local rainfall data and groundwater levels. With stakeholders we will develop a full list of the water features (ponds, boreholes, ditches etc) in the area. This will ensure that stakeholders are “bought into” our method and later our assessment.

We need to be really clear on what groundwater levels we are reviewing, and in particular differentiate between groundwater levels in the chalk (including those in the EA drought reports) and those in the gravel deposits. We will review all the groundwater level data to make sure we understand if groundwater levels are perched or impacted by confining layers of low permeability material (such as the Ampthill Clay). We will try to identify any historic water quality data from the ponds.

We will also speak with SCDC staff and the developer (again via Microsoft Teams so that documents and screens can be shared) to understand the timeline of the development, and review when residents began to comment on changes in the hydrology. We will visit the pond, take photographs and (if appropriate) water quality samples. If we need to, and if lockdown allows, we can meet with any stakeholders we have not managed to contact so far, or those who want to show us something which they feel is important to the assessment. We will seek historic photos and other evidence to see if we can identify changes in the condition of the pond.

Once our conceptual modelling is complete we will produce a technical note (our first deliverable), which sets out, clearly and concisely, what the hydrogeology and hydrology was before the development. We will share this information with stakeholders (e.g. residents of Longstanton, SCDC and the developer), and give them opportunity to comment on our findings. An example conceptual model is shown below.

Method Statement - Written statements are required	Marks	Score 0-5



Only when we are sure we have a conceptual model can we start to understand the impacts of the development.

Assessment

Once the conceptual model is completed we will then assess if there are impacts from the housing development on the hydrogeology and hydrology of the area. We will consider if there is evidence that processes such as flow regimes, infiltration rates or evaporation may have changed as a result of the development. We will develop a second conceptual model, to determine the current hydrogeology and hydrology, and if it has changed as a result of the development.

We will review the evidence available to us, such as recent groundwater levels, pond levels and anecdotal evidence. We will also review if there are other potential causes for changes in the pond levels (e.g. other abstractors in the area). We will see if the evidence supports our conceptual model. We will look at data from January and February 2020, when there was considerable rainfall, to see if groundwater levels recovered.

Once our assessment is complete we will present a second conceptual model to stakeholders setting out what we believe the current processes are. This will be our second deliverable.

Conclusions and Recommendations

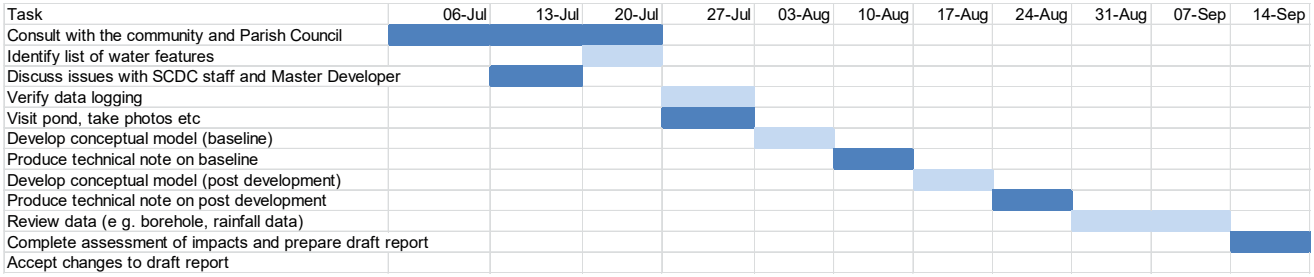
On completion of our assessment we will produce a draft report. We will assess if the Kingfisher Pond has been affected, and aim to quantify the impact. We will also answer the specific question set out in paragraph 27 of the ItQ.

We will produce a draft report for comment, and address one round of comments. If necessary we will provide a non-technical summary of our findings. These will be our final deliverables.

Method Statement - Written statements are required	Marks	Score 0-5

Programme

The Gantt chart shows our proposed timetable. We propose to complete the work by the middle of September.



Please confirm how you will meet the requirements set out in the brief in particular:

How the service will operate and where from;

The work will be undertaken by staff based at our Head Office in Wallingford, Oxfordshire. Our office supports around 200 staff. Currently it is mainly closed (due to coronavirus) with staff (mostly) working from home. Staff working on this project live in [redacted] and [redacted] All our staff have laptops to access to our central servers, and remote login to all our corporate systems. We have GIS systems and other tools to help us present the findings of our assessment. Given our high quality IT systems our ability to work has been barely affected by coronavirus.

The team that will provide the services and a brief summary of their experience;

We propose two people in our team [redacted] (Technical Director and Hydrogeologist) will lead the project, with support from [redacted] (Graduate Scientist).

[redacted]

Method Statement - Written statements are required	Marks	Score 0-5

[redacted]

How you will ensure quality control and delivery on time;

HR Wallingford maintains a quality management system (QMS) consistent with ISO 9001. Copies of our systems are available on our website http://www.hrwallingford.com/about/compliance. Our QMS system is independently audited.

We work on some critical infrastructure (e.g. reservoirs, nuclear power stations, ports and airports) and our systems need to ensure that the quality of our work is of the highest order. We have a "check, review, authorise" system, where all work (e.g. calculations, reports and maps) are reviewed by someone other than the originator.

We are currently busy, however we maintain a register of our resources, and we can confirm that we have the capacity to complete this project. Nevertheless we recognise that unforeseen events happen (including the current risks of coronavirus).

Contingency plans for unforeseen delays;

We recognise that unforeseen events happen (including the current risks of coronavirus). We have 70 people in our floods and water team who can replace [redacted] if they are not available to the project. For instance [redacted] is our Senior Hydrogeologist and would replace [redacted]. [redacted] is one of our scientists, and would replace [redacted].

As set out earlier, we have robust IT systems in place as well as a range of contingency plans, which mean that in the event of increased impacts of coronavirus or other unforeseen events (e.g. flooding, power outages) we can continue to work effectively.

[redacted] in particular is experienced in completing projects on time. We have a range of tools available to help with this project, such as a range of videoconferencing tools to discuss the key matters with stakeholders. In the event of unforeseen delays we can use some of our other 250 staff to help complete the project, for instance analysing data or producing maps.

We understand however that the residents want to get clarity over this matter quickly. We propose therefore to start the project immediately, and aim to complete it well within the programme set out in the ItQ (see our Gantt Chart). This means that if there is slippage later

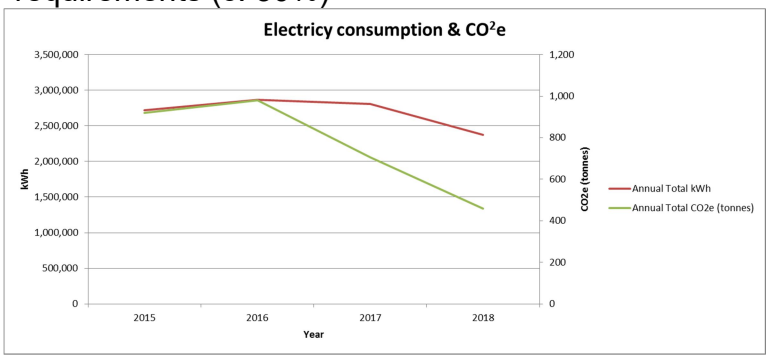
Method Statement - Written statements are required	Marks	Score 0-5

on we can meet the original deadlines.

In order to address climate change and meet our objectives of carbon reduction please provide a policy document or statement confirming how your company is working towards net zero carbon and decarbonisation of your supply chain.

A copy of our environmental policy is here http://www.hrwallingford.com/pdf-documents/PO-003_Environmental-R7-0.pdf
HR Wallingford shares its site with the Environment Agency, and we are working together to reduce carbon emissions (and other environmental impacts) across our site. For instance:

- Our buildings are modern and energy efficient, using heat pumps rather than more energy-intensive types of heating and air conditioning
- We re-use water from in our modelling hall, reducing the amount of power used to pump water
- We have a solar park on the farm, meeting a large proportion of our energy requirements (c. 30%)



- We monitor our energy and greenhouse gas emissions, and have halved our CO_2 emissions since 2016.
- We have set up a new team (March 2020) looking at how we can reduce our carbon emissions further to become carbon neutral.

Any comments on the terms and conditions (if you are happy to accept please just state this).

The table below sets out the changes we would request to the T&Cs provided.

[redacted]

Method Statement - Written statements are required	Marks	Score 0-5

[redacted]

Insurances

HR Wallingford maintains insurances that meet the requirements of the T&Cs. Extracts from certificates are shown below.

TYPE OF INSURANCE	Professional Indemnity Insurance
INSURER:	Beazley Group
POLICY NUMBER:	B0460431551692020
PERIOD OF INSURANCE:	1st April 2020 to 31st March 2021
LOSS LIMIT:	GBP 1,000,000 any one claim excluding costs, but in the aggregate including costs plus one reinstatement in respect of claims brought in USA and or Canada
DEDUCTIBLES:	GBP 125,000 each and every claim

Method Statement - Written statements are required	Marks	Score 0-5

Public and Products Liability

INSURER	Travelers Insurance Company Limited
POLICY NUMBER	UC TSR 5588210
LIMIT OF LIABILITY	GBP10,000,000 any one occurrence and in aggregate in respect of Products Liability
EXCESS	GBP2,500 any one occurrence for third party property damage USD10,000 in respect of USA
EXTENSIONS	Indemnity to Principals
PERIOD OF INSURANCE	31 March 2020 to 30 March 2021

CONFIRMATION OF INSURANCE – HR Wallingford Group Limited, HR Wallingford Ltd and subsidiary companies

As requested by the above client, we are writing to confirm that we act as Insurance Brokers to the client and that we have arranged insurance(s) on its behalf as detailed below:

Employers Liability

INSURER	Travelers Insurance Company Limited
POLICY NUMBER	UC TSR 5588210
LIMIT OF LIABILITY	GBP10,000,000 any one occurrence
EXTENSIONS	Indemnity to Principals
PERIOD OF INSURANCE	31 March 2020 to 30 March 2021

Excess Employers Liability

INSURER	Chubb European Group Limited
POLICY NUMBER	UKCASC97897
LIMIT OF LIABILITY	GBP10,000,000 any one occurrence
PERIOD OF INSURANCE	31 March 2020 to 30 March 2021

Note the Councils will check 3 references and assess based on the feedback provided by previous clients. Please provide a minimum of 3 references. These will be assessed on a pass or fail nature on the actual feedback from the referee as well as how comparable the services provided to the referee are to the brief.	Pass/ Fail Only

Name of Client(s) Address:	Telephone:	Email and Name of person to contact:	Description of services provided	Contract dates (From – To)	Annual Value of Contract (£)
[redacted] Head of Water Resources, Thames Water, Clearwater Court, Reading.	[redacted]	[redacted]@thameswater.co.uk	Hydrology and hydrogeology for various project on the River Thames, Severn and Avon	Ongoing	>£200,000
[redacted] Head of Water Resources, South East Water, Snodland, Kent	[redacted]	[redacted]@southeastwater.co.uk	Hydrology and hydrogeology assessments	Ongoing	£150,000
[redacted] Director, Water Resources in the South East	[redacted]	[redacted]@wrse.org.uk	Hydrogeology modelling	Ongoing	£200,000

PART C: References