Cambridge Waste Water Treatment Plant Relocation Project
Anglian Water Services Limited

Cambridge Housing Infrastructure Fund Submission

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January 2024

Housing Infrastructure Fund

Business Case – HIF/FF/000069/BC/01 – Cambridge Northern Fringe East (CNFE)

Bid Details

Lead Authority

Cambridgeshire and Peterborough

Is it a joint bid with other Local Authorities?

No

Contact Details

First Name
Last Name
Email Address
Telephone number

Are you an agent making this submission on behalf of one or multiple Local Authorities?

No

Are the contact details provided above for the lead responsible officer for the project at the local authority?

Yes

Project Summary

What is the name of the scheme

Cambridge Northern Fringe East (CNFE)

Please provide an Executive Summary for you proposal

This Business Case supports the investment of £227m HIF to relocate the Cambridge Water Recycling Centre (CWRC), from brownfield land in the Cambridge Northern Fringe (CNF). This has real potential to unlock over 8,600 housing units over 20 years and create up to 24,000 jobs.

This bid is submitted by Cambridge City Council on behalf of its partnership with Anglian Water. Having worked closely with Anglian Water under an MoU, we have agreed heads of terms for a formal joint venture, and jointly appointed U+I as master developer. The bid is prioritised by the Cambridgeshire and Peterborough Combined Authority, and has letters of support from key stakeholders.

The strategic case is clear.

The National Infrastructure Commission's 2017 report emphasised national prioritisation of the Cambridge – Milton Keynes – Oxford growth arc in advancing UK prosperity. Greater Cambridge has the potential to underpin this prioritisation as the fastest growing city economy in the UK (2018 Irwin Mitchell) with Greater Cambridge demonstrating a blended employment growth rate of 3.3% (CPIER, 2018), double ONS GB 2010-16 average rate. Inclusive growth is, however, an acute challenge for the area, with under-supply of housing and house prices more than thirteen times the average salary, putting prosperity at risk. With the Combined Authority commitment to doubling the area's Gross Value Added over 25 years, the challenge is to ensure the growth in housing stock matches the area's ambitious plans for economic growth.

Relocating the CWRC will release the CNFE Core Site, a major brownfield area for 5,600 homes (including 40% affordable) in line with the Cambridge Sustainable Housing Design Guide. It will also remove 'odour zone' restrictions around the CWRC that limit 82 hectares of land to industrial use. This would enable a further circa. 3,000 homes to be built on adjacent land and nearby employment sites to more than double employment densities. The new housing in the CNF area will be within walking and cycling distance of thousands of jobs at the Cambridge Science Park, to the Cambridge North railway station, and other public transport. It will be transport net neutral.

The economic case is strong.

The HIF funding would produce a net present value of economic benefit from new housing of [redacted], with an estimate additionality rate of 75% and a benefit-to-cost ratio of [redacted]. There are also significant non-monetised benefits to the sustainable growth of Greater Cambridge. Without HIF funding no housing can be developed due to the odour zone. The deadweight percentage is therefore considered as zero. Addressing the market failure by relocating the CWRC is the only way to unlock the benefits on significant residential development as well as more economically advantageous jobs in the CNF area. The development will optimise the use of recent public transport investment. No other option produces similar benefits.

The commercial case is well developed.

The pressure on Cambridge to ensure its housing development trajectory can support its economic aspirations is strong. Commercial analysis shows there is high demand for housing, retail and office

space in the CNF area. Under a robust programme management framework Anglian Water will lead the relocation project, and the partners have procured a master developer for the core site, U_I through OJEU process. The master developer will secure planning permission, fund site infrastructure and drive delivery of the development schemes. The joint Local Planning Authority for South Cambridgeshire and Cambridge City Council have started work on an Area Action Plan for the CNF area to create a sustainable planning framework. The timescales for the HIF funding are extremely challenging for such a major infrastructure project. In order to meet them, the Joint Venture will seek to use the Development Consent Order process to secure a relocation site for the CWRC, commissioning it and decommission the existing facility.

The financial case is robust.

The £227m of HIF funding will be used to relocate the CWRC, addressing the major market failure to unlock development. The project will not need additional HIF funding. Cambridge's strong property marked and underlying land values mean that conventional developer funding and planning can deliver the physical, environmental and social infrastructure that will underpin the housing delivery.

The management case is grounded in robust governance and management and strong partnerships.

Cambridge City Council will act as the HIF accountable body. Working closely with the Joint Venture to bring the project forward are partners including the Combined Authority and the Greater Cambridge Partnership. The programme has a robust governance and project management structure in line with national best practice methodologies, combined with broad stakeholder engagement forums across the planning and project areas.

Please provide an overview of the project, including your project scope for the infrastructure and for the wider project

CNFE is the last large-scale undeveloped regeneration opportunity in Greater Cambridge. Its transformation from brownfield land into a new mixed-use neighbourhood will deliver thousands of new homes and jobs over [redacted] across 82 hectares of underutilised land. The scope of the new masterplan project is defined in the following two appendices:

[redacted]

[redacted]

[redacted]

Relocating the CWRC will release a valuable brownfield site.

The project will relocate the existing Anglian Water Cambridge Water Recycling Centre (CWRC) in order to release a core brownfield site of 47 hectares made up of the current CWRC site (39ha), and land owned by Cambridge City Council (8ha). The core site will be able to accommodate approximately 5,600 new homes.

Odour from the CWRC restricts land use within the vicinity of the plant to industrial uses and, further away, office and recreational use. [redacted]

Relocating the CWRC removes the odour zone restrictions, enabling a full range of land uses to be considered acceptable across the entire area, including residential development. As well as the core site, relocation will make a further 35ha of land available with capacity for a further 3,000 homes.

New homes and sustained economic prosperity are key ambitions.

The relocation of the CWRC is the basis for transformation of CNFE to support Greater Cambridge's continued sustainable growth and help meet the ambition of Cambridgeshire and Peterborough Combined Authority to double GVA by reinforcing Cambridge's position as a global centre of excellence for research, development and business success. CWRC relocation would release scarce land for development, facilitate housing on public and private land and reduce pressure for major housing development elsewhere in Greater Cambridgeshire.

The proposed 5,600 homes across six neighbourhoods on the core site will be of mixed type, size and price and cater for many needs, with 40% affordable housing and around [redacted] built for market rent and alternative housing models, including custom build, shared living, cohousing and micro housing being considered. The development will also deliver high quality commercial space, with potential to unlock expansion of the Cambridge Science Park and other sites to provide about [redacted] of additional floor space.

A well connected, carefully planned place.

The site is located in an area of Cambridge that is already well-connected by roads and the railway, making it a suitable site for a new housing-led quarter. By providing housing in an employment-dominated part of Cambridge, the development will enable a mixed-use neighbourhood with a balance of residential, employment and leisure use. More people will be able to live nearer where they work and shop, reducing the need to travel.

Development of CNFE will capitalise on the investment made in the new Cambridge North railway station a short walk to the south. The core site is bordered to the north by the A14 which links to the highway network, and Milton Road, running between the Science Park and CNFE, leads into Central Cambridge. The Cambridgeshire Busway runs along the southern edge of the quarter. The core site will be integrated into the transport network with an emphasis on sustainable means of transport. Walking and cycling will be attractive and convenience and are expected to be the dominant modes of movement. Investment will be put into new cycling infrastructure and walking routes to the city centre and key employment areas, and permeability to and within CNFE improved by direct connections between the core site and Cambridge North Station, the Busway, the Science Park and across the A14. The scale of development also lends itself to innovation in sustainability and transport such as pilot automated vehicle schemes and the Smart Cambridge programme.

Site Details

How many housing sites will the funding bring forward?

2

Please provide a list of the housing sites that the funding will bring forward, including the amount of units to be delivered on each site, the lower tier or unitary authority the site is in and the current land ownership

Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
Core Site – CNFE	5600	Cambridge	Anglian Water / CCC	Allocated	

Commentary

Policy 15 of the CLP states that CNFE will be 'primarily for employment uses'. This allowed for a scenario with no HIF funding. With HIF

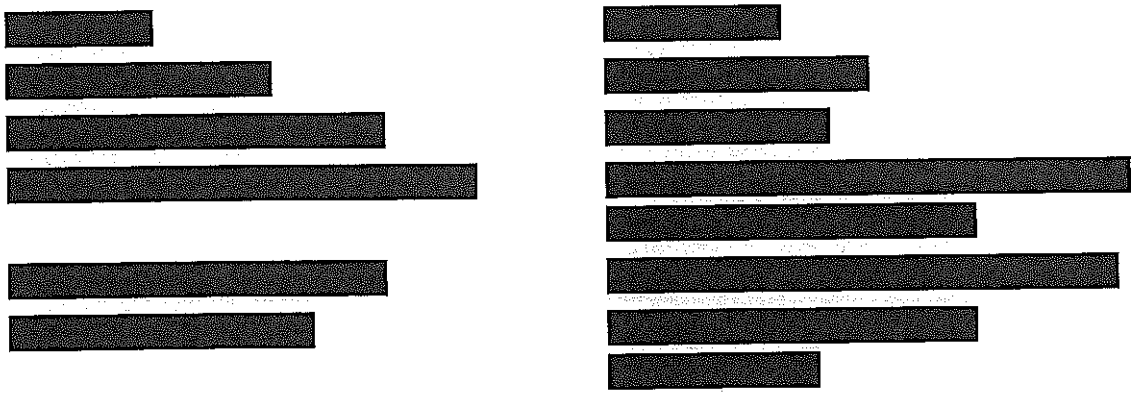
Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
Wider Site – CNFE	3025	Cambridge	Multiple ownerships – including investors, developers, private individuals, and owner occupiers	Allocated	

Commentary

Policy 15 of the CLP states that CNFE will be 'primarily for employment uses'. This allowed for a scenario with no HIF funding. With HIF

Please provide site boundaries for all housing sites

(see final page of document)



What is the total size of the development (in hectares)?

81.54ha

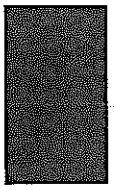
Of the total development size, what is the total housing area (in hectares)?
61.29ha

How much of the total housing area is on:
Brownfield land
58.83 ha

Public sector land
9.31 ha

What are the proposed tenures of the homes to be delivered?

Affordable sale
Affordable rent
Market sale
Market rent
Other



Infrastructure Requirements

Please provide further details on the HIF infrastructure requirements and their link to the delivery of housing

Infrastructure Type	Road / highway - SRN	**Description**	In relation to the Highways England (HE) managed Strategic Road Network (SRN), a contribution will be required towards improvements to the A14 / Milton Interchange that forms part of the A10 corridor, as identified in the A10 study
HIF Funding	£0	**Link to housing**	It has been identified through the A10 Study, that in order for the additional housing to remain transport neutral, a contribution will be required to provide additional mitigation at the A14 Milton Interchange. The proposed scheme will be designed to also accommodate traffic associated with other development areas within the A10 Study and therefore the housing associated with the site will pay for a proportion of the cost to provide the junction upgrades.
Sites benefitting	Core Site – CNFE, Wider Site - CNFE		

Infrastructure Type	Road / highway - other	**Description**	Roads and streets will need to be built to provide access to and within, new housing areas. These will be funded by developers. External to the site, modifications will be required to the existing junctions on Milton Road to facilitate site access and egress, based on expected site traffic generation. New site access junctions will be required to connect internal roads to the public highway.
HIF Funding	£0	**Link to housing**	Essential alongside housing. These will be delivered as part of new development, either within infrastructure packages or as part of the external works package for individual lots.
Sites benefitting	Core Site – CNFE, Wider Site - CNFE		

Infrastructure Type	Bridge	**Description**	A pedestrian and cycle bridge, deck or underpass to cross the Milton Road and connect the core site to the Cambridge Science Park via St John's Innovation Park is likely to be required. Pedestrian and cycle bridges are also expected over the A14 to the north and the railway to the East to open up the site to the greenbelt and river Cam.
HIF Funding	£0	**Link to housing**	Housing can be delivered without this connection but amenity would be lower and transport-neutral development would be harder to achieve. The bridge/ underpass is likely to be specified as area-wide infrastructure under the AAP and as such would be funded through developer contributions
Sites benefitting	Core Site – CNFE, Wider Site - CNFE		

Infrastructure Type	Digital infrastructure	**Description**	New sitewide infrastructure will be required. The scale of the site provides the opportunity for cutting edge digital innovations in 5G, artificial intelligence, autonomous vehicles, data capture and smart city initiatives. All of which will be explored during design development.
HIF Funding	£0	**Link to housing**	Necessary to serve additional housing.
Sites benefitting	Core Site – CNFE, Wider Site - CNFE		

Infrastructure Type	Health facilities	**Description**	There is expected to be a community and health centre on the core site serving the wider CNFE area. The AAP may provide for an alternative/ additional location.
HIF Funding	£0	**Link to housing**	Necessary to serve additional housing. The health hub will be in line with the Cambridgeshire and Peterborough STP with the core aim being to deliver healthcare via neighbourhood care hubs, and a focus on people-powered health and wellbeing. The increased health provision will cater to the increased number of residents in the area.

Sites benefitting	Core Site – CNFE, Wider Site - CNFE		
Infrastructure Type	Green infrastructure	**Description**	Green infrastructure will be required throughout the development to promote sustainability, well-being and biodiversity. Work on the core site will include both hard and soft landscaping to form the main park, perimeter boundaries, natural corridors and strategic green zones
HIF Funding	£0	**Link to housing**	On the core site, green infrastructure will provide an attractive and sustainable environment. Green infrastructure will be integrated through the masterplan, contributing to character, adding amenity and health, and mitigating climate change effects. Green corridors will provide connections between neighbourhoods and neighbouring areas, including the nearby Milton country park. And a network of green streets within neighbourhoods will link with a central green square. This green space will include provision for play and recreation to create a health district. Green roofs and green walls will soften the impact of higher-density development and create a highly visible habitat for nature.
Sites benefitting	Core Site – CNFE		
Infrastructure Type	Public realm works	**Description**	Public realm – squares, parks and informal green space – will be required across the core site and wider CNFE area as part of sustainable development of all sites.
HIF Funding	£0	**Link to housing**	Public realm will play an important role in creating high levels of amenity for housing and supporting transport-neutral development. The public realm typology will embrace the importance of the street, with walking and cycling the main modes of movement. This will create substantial areas of car-free

			public realm on the core site. Public realm will be delivered either as site infrastructure or as part of external works packages for individual lots.
Sites benefitting	Core Site – CNFE, Wider Site - CNFE		
Infrastructure Type	Water works	**Description**	New water supply infrastructure to provide metered services to all users. In order to respond to water stress issues in the Cambridgeshire area and planning requirements, recycled water utility infrastructure is also planned (rainwater harvesting, rainwater attenuation and greywater harvesting and treatment).
HIF Funding	£0	**Link to housing**	The new housing developments will be required to provide sustainably sourced water resources that are consumed in an efficient manner. The water utilities infrastructure will enable the scheme to store and treat water on site for non-potable demands, ie toilet flushing, washing machines. The proposed infrastructure will be connected to the mains supply for water top up when needed, and when storage is required, the integrated landscape attenuation system will support on site storage needs
Sites benefitting	Core Site – CNFE		
Infrastructure Type	Land remediation	**Description**	Standard remediation has been anticipated on the development account and so will be funded by the development
HIF Funding	£0	**Link to housing**	Standard remediation has been anticipated to allow residential development.
Sites benefitting	Core Site – CNFE		
Infrastructure Type	Utility network extension	**Description**	Utilities network extension may be required into housing sites to provide energy services and water supplies.

HIF Funding	£0	**Link to housing**	Will be procured/delivered by site developers.
Sites benefitting	Core Site – CNFE, Wider Site - CNFE		
Infrastructure Type	Utility capacity reinforcement	**Description**	We have engaged with Greater Cambridge partnership who have confirmed there is some spare capacity on the electricity network in the area but not enough for the scale of development envisaged (currently there is 11.5 MVA spare capacity which is enough for around 5,750 homes, estimates suggest that around 22 MVA will be needed). Therefore either traditional grid reinforcement will be required or different ways of freeing up some existing capacity will be explored (eg through the use of smart grids). Greater Cambridge Partnership have commissioned a study to review capacity on the electricity network to support growth and a report is expected in January 2019. We are also in discussion with UKPN.
HIF Funding	£0	**Link to housing**	Necessary to serve additional housing. The housing will take an electric servicing approach to enable the project's low carbon aspirations.
Sites benefitting	Core Site – CNFE, Wider Site – CNFE		
Infrastructure Type	Other (Relocation of Cambridge Water Recycling Centre (CWRC))	**Description**	The relocation of the CWRC is required in order to unlock land for development.
HIF Funding	£227	**Link to housing**	The relocation of the CWRC will not only release land on the core site, but also in the wider area due to the removal of the odour constraint. This land is suitable for mixed use development including housing, due to its position near the Cambridge North rail stations and its location within Greater Cambridge, an area of strong economic growth and having significant potential to contribute

			to future housing supply and housing need in the next joint local plan.
Sites benefitting	Core Site – CNFE, Wider Site – CNFE		
Infrastructure Type	Education	**Description**	Two primary schools and one secondary school have been provided for in the masterplan on the core site. Although a secondary school may not be required on the core site, provision for it has been made in the masterplan at this stage. Additional primary schools may be needed for the wider CNFE area. Specific requirements will be defined by the AAP.
HIF Funding	£0	**Link to housing**	Essential alongside housing. The masterplan for the core site will require the delivery of new schools for the new urban quarter of Cambridge in order to cater to new residents.
Sites benefitting	Core Site – CNFE, Wider Site – CNFE		

Please outline, in further detail, the direct link between the infrastructure scheme(s) and how this unlocks the homes

The CWRC currently locks up 82 hectares of potential housing land

The Cambridge Water Recycling Centre (CWRC) provides water recycling for Cambridge and its surrounding villages. Parts of the facility date back to 1895, when it was originally well outside Cambridge, but the City has grown up to and around it.

At 47 hectares it is the largest undeveloped brownfield site in the Cambridge area. But its potential as a site for residential development cannot be realised without intervention.

A Waste Water Treatment Safeguarding Area, or odour zone, prevents any residential development within 600 metres of the site and restricts employment land-use to general industrial and office on the fringes. This prevents the consideration of housing development on the surrounding 35 hectares of land.

Relocating the CWRC could unlock 8,625 new homes

The HIF funding would cover the cost of relocating the CWRC, the remediation works to bring the site to a fully developable state. Our analysis shows that relocating the CWRC could unlock the delivery of 5,600 homes in a residential-led mixed use quarter on the 47 hectare core site (a combination of the 39-hectare CWRC site and 8 hectares of adjacent land owned by Cambridge City Council.) And removing the odour zone restrictions could:
- enable a further 3,025 homes on the other sites within the CNFE area
- provide for double the density of space and jobs at adjacent high-value employment sites such as Cambridge Science Park.

Further infrastructure will be delivered through the housing scheme

Alongside new residential development, significant new infrastructure will be delivered as part of the housing-led scheme. This will include investment in utilities, transport, green space, public realm, health facilities, schools and affordable housing. Although an indirect outcome of the HIF funding, these will be funded wholly out of developer funding and will therefore come ultimately from land value.

Without full HIF funding the infrastructure scheme will not be delivered

The delivery of 8,625 homes, together with associated mixed uses and infrastructure, is wholly dependent on the relocation and remediation of the CWRC. However, without HIF funding, this cannot happen

The requirement for the infrastructure scheme is £227m.

Assuming that HIF funding meets the full cost of £227m, the total land value is approximately [redacted], split [redacted] to the core site (in which the applicants have an interest and therefore control) and [redacted] to the other sites. The core site's land value is less than the cost of delivering the infrastructure scheme. If the core site were to bear the cost of delivering the infrastructure scheme its land value would therefore be [redacted].

Assuming that HIF meets the whole cost of the infrastructure scheme, the projected value of the core site is [redacted] per gross acre (115.35 acres) or xx per gross hectare (46.68 hectares). This is in line with the current value of residential development land in Cambridge. This is not an unreasonable level of value, given that:
- the land has considerable current value

- this value would be greater than current value through extended employment use
- the significant costs and risks associated with delivering the housing scheme.

Given that Anglian Water has no operational requirement or advantage to gain from relocation, the restrictions on its commercial activities, and the obligations on Cambridge City Council to achieve best value, this level of value is base land value appropriate for the landowners and their partners to bring the project forward. This base value is included in the business plan of the Master Development Agreement between the land-owning JV and U+I.

Consequently, without HIF funding, there is a viability gap associated with the project of £227m and without this funding the infrastructure project and associated housing delivery of 8,625 homes will not be delivered.

The project will not need additional HIF funding. Cambridge's strong property market and underlying land values mean that conventional developer funding and planning can delivery the physical, environmental and social infrastructure that will underpin the housing delivery.

Wider Development Impacts

Please provide a summary of what impact the scheme will have on the Transport Network

Transport analysis has been carried out in line with the Combined Authority's developing LTP and the Ely to Cambridge Transport Multi Modal Study using sub-regional model CSRM2 which covers major development including CNF.

The impact of the scheme on the transport network after the implementation of a comprehensive package of mitigation identified in the A10 study will be net neutral. This will be achieved by working within a 'trip budget' which apportions trips at a level which is acceptable in highway terms offset by the mitigation measures identified.

The CNFE transport strategy will

Build on Cambridge's tradition of cycling with walking and cycling being the main forms of movement

Rebalance an employment-dominated part of Cambridge, achieving a sustainable mix of housing, work, retail & leisure and reducing the need to travel

Exploit its proximity to sustainable transport infrastructure including the guided busway, Cambridge North Station, cycling infrastructure & walking routes

Travel demand management measures and commitment to car parking restraint will reduce car use

Link into work undertaken by the Greater Cambridge Partnership linking to proposed improvements to bus, cycle & pedestrian facilities on Milton Road, as well as connecting to proposed Greenways and the Chisholm Trail

The trip generation of the site will be monitored on a phase by phase basis to ensure the trip budget is not exceeded. For the full scheme to be constructed, the mode share targets must be achieved.

The site strategy is supported by Cambridge County Council through the local planning process and has political backing for the development and the approach to sustainable transport. A sensitivity test with a significantly higher vehicle trip generation would not align with the above and would be contrary to the CNF APP and the A10 study requirements.

The economic impact appraisal uses the Cambridge Sub-Regional transport model to provide inputs to a TUBA assessment in line with WebTAG guidance. The high-level assessment modelling of the transport external costs with the CNFE traffic demand shows a transport cost of -£310m across the network.

This figure is misleading as it assesses the whole impact of the development but excludes the benefit that the development will deliver through its contribution to the mitigation package set out in the A10 Study. The study gave the mitigation transport user benefits of [redacted] (2018 prices). The CNFE site provides a contribution of [redacted] towards the mitigation equating to 38% of the overall costs. Therefore, the same proportion of benefit should be attributed to CNFE, a transport user benefit of [redacted]

We consider the impact of the proposed development on the transport network is therefore only [redacted]. We have however modelled the more substantial impact through our economic case

At a future stage appraisal of the environmental and social impacts will be undertaken. A qualitative review of impacts has been undertaken for the HIF submission and this is considered proportional.

The transport mitigation package and the masterplan will lead to significant improvements to travel options. The site will have a competitive advantage because of its accessibility and be a catalyst for improvements in air quality and noise.

The AAP transport modelling and strategic outline business case shows a mitigation package that could deliver the CNF wider development. These schemes will evolve through later stages when accident appraisal will be undertaken. Given the CNFE development is seeking to reduce severance and remove pedestrian-cyclist-vehicle conflict when crossing the Milton Road, it is considered that there will be a positive impact in terms of reducing accidents on Milton Road.

The impact of walking and cycling improvements on physical activity has been considered qualitatively at this stage. The masterplan will reduce severance and increase opportunity for walking & cycling. This will have a positive impact on physical activity through improved health and greater productivity through reduced absenteeism.

The masterplan will include a mix of uses, active at different times of the day, fronting streets that will be designed with people in mind. Routes to and from public transport will be legible, lit and landscaped with quality waiting facilities. A qualitative assessment of the security and journey quality impacts shows that these will have a positive impact.

The CNFE development will improve connectivity, reduce severance and improve permeability to destinations including Cambridge North Station and the Science Park via a permeable site masterplan, a new link over the A14 and across Milton Road creating a safe, direct route for pedestrians and cyclists between Cambridge North Station and the Science Park. The severance and accessibility impacts will be largely positive.

Please refer to the CNFE Transport Strategy included in Appendix F.

How many schools are expected to be funded through HIF?

3

Please complete a row in the table for each school to be funded through HIF

School No	1	**Educational Phase**	Primary	**Due to Open**	12/2030
Type	• LA-led Mainstream				
Capacity	Low Levels projection (Forms of Entry) = 908 (4.3FE) High Level projects (Forms of Entry) = 1210 (5.8FE)				

School No	2	**Educational Phase**	Primary	**Due to Open**	03/2037
Type	• LA-led Mainstream				
Capacity	Low Levels projection (Forms of Entry) = 908 (4.3FE) High Level projects (Forms of Entry) = 1210 (5.8FE)				

School No	3	**Educational Phase**	Secondary	**Due to Open**	02/2032
Type	• LA-led Mainstream				
Capacity	Low Levels projection (Forms of Entry) = 514 (3.4FE) High Level projects (Forms of Entry) = 756 (5FE)				

What is the planned pupil yield for site(s) unlocked and how has this been calculated? Please attach relevant documents outline pupil yield calculation if available

NB: Education is only indirectly funded by HIF, via the direct funding of the relocation of the CWRC, and removal of the odour zone. We have therefore answered question 1.4.2.7 only.

[redacted]

No attachments

How have you engaged with your Distribution Network Operator when developing this scheme? Please provide costs and timescales for connections and upgrading network infrastructure

@Html.Raw(Model.EngagedDistributionNetworkOperator)

No attachments

Please demonstrate your assessment of additional utility provision – (including but not limited to water, waste water, gas and telecoms) – for this scheme and future housing delivery'

Utility Capacity Reinforcement (save for some minor peripheral benefits of the CWRC relocation) is only indirectly funded by HIF, via the direct funding of the relocation of the CWRC, and removal of the odour zone. We have therefore answered question 1.4.3.3 only.

No attachments

What consideration have you given to ensuring that the health and care services locally will align with the additional homes to be built?

Ensuring Local Health and Care Services Align with Development

The core site could accommodate 5,600 homes, with adjacent sites accommodating 3,025 homes. The additional population growth, using the Cambridge City average household size of 2.3 people (2011 Census), will be 12,880 and 6,958 respectively or 19,838 people for the whole development.

The optimal list size for a single General Practitioner's (GP) practice (120m2) is 1,750 patients. The core site is likely to require 7 new GPs, and adjacent sites requiring 4 new GPs. A single multi-clinic practice may be the preferred model and will be evaluated as the AAP develops. It is envisaged that 11 new dental surgeries, provision of 42 Acute Healthcare beds, and 42 Extra Care beds, will be required. The masterplan is designed to accommodate the health facilities described above.

Background Context – Health Approach in Cambridgeshire

Good health is related to good quality housing and developments, well designed street scenes and neighbourhoods, quality and efficiency in transport systems, opportunities to experience leisure and cultural activities and green and open space. Greater Cambridge Planning Service are preparing a Health Impact and Needs Assessment (HINA) to inform the forthcoming Area Action Plan. This will define health needs arising for the development more accurately. The preparation of the HINA will engage with a number of groups and organisations in the local health and wellbeing system:
Director of Public Health at Cambridgeshire County Council;
The Health and Wellbeing Board;
NHS Cambridgeshire and Peterborough Clinical Commissioning Group (CPCCG) and NHS England
Engagement with the local community and other community groups as appropriate

The HINA will be structured to consider a range of topics, including
Health Priorities and Needs
Mixes of Uses and Healthy Housing
Connectivity and Active Transport
Open Space and Physical Activity

Supporting information can be found in Appendix H

Have you engaged with your Sustainability and Transformation Partnership?

We have engaged with the STP leads and will review plans as the development progresses

The NHS and local government officers in Cambridgeshire have come together to develop a major new plan to keep Cambridgeshire and Peterborough Fit for the Future. The STP covers hospital services, community healthcare, mental health, social care and GP services.

Fit for the Future sets out a single overall vision for health and care, including:
supporting people to keep themselves healthy
primary care (GP services)
urgent and emergency care

planned care for adults and children, including maternity services
care and support for people with long term conditions or specialised needs, including mental ill health.

Through discussion with staff, patients, carers and partners the STP has identified four priorities for change and developed a 10-point plan to deliver these priorities.

As part of the overall Health strategy for the proposed development it will be important to discuss existing issues, potential impacts arising from the scheme, and opportunities to address future needs, with Fit for Future
(contact@fitforfuture.org.uk)

Please refer to the STP Supporting Information in Appendix I

If you have any further information to support your project overview, which has not already been captured in the above, please include this here

1.4.2.7 Please indicate whether the housing development generates a need for new school places and how this will be accommodated, either within the development site or elsewhere.

Forecasted number of children from CNFE development (combining Sites 1A and B, and 2A, B and C)

For development proposals where detail of development proposals is available only at a high level, the Council uses general multipliers. These suggest that for a development of this scale the demand for education provision would be as follows:
- 2 Primary Schools (3 F/E). Includes SEND places within mainstream provision. On-site Provision.
- It is considered, at this stage, that development will not general sufficient demand for a new standalone secondary school. However, provision has been made within the Masterplan for a school should that position change. Otherwise, off-site contributions for the expansion of existing provision within the City will be made. Includes SEND places within mainstream provision.

Please refer to Education Approach in Appendix G for further information.

1.4.3.3 How have you assessed that no new utility infrastructure – electricity, capacity, water, waste water, gas and telecoms – will be required for this scheme and future housing delivery or, how additional utility infrastructure will be delivered without HIF funding? We have made an initial approach to obtain the existing services installation records from the statutory service providers. We have also reviewed information supplied by Anglian Water.

From this information our consultants have made an assessment of the likely extent of diversions required and enquiries have been made to the relevant providers for information on the viability and costs and programme of the proposed works.

The majority of the Anglian Water operation and service connections can be disconnected with only the supply and outfall of the sewage works forming part of the strategy for the development site

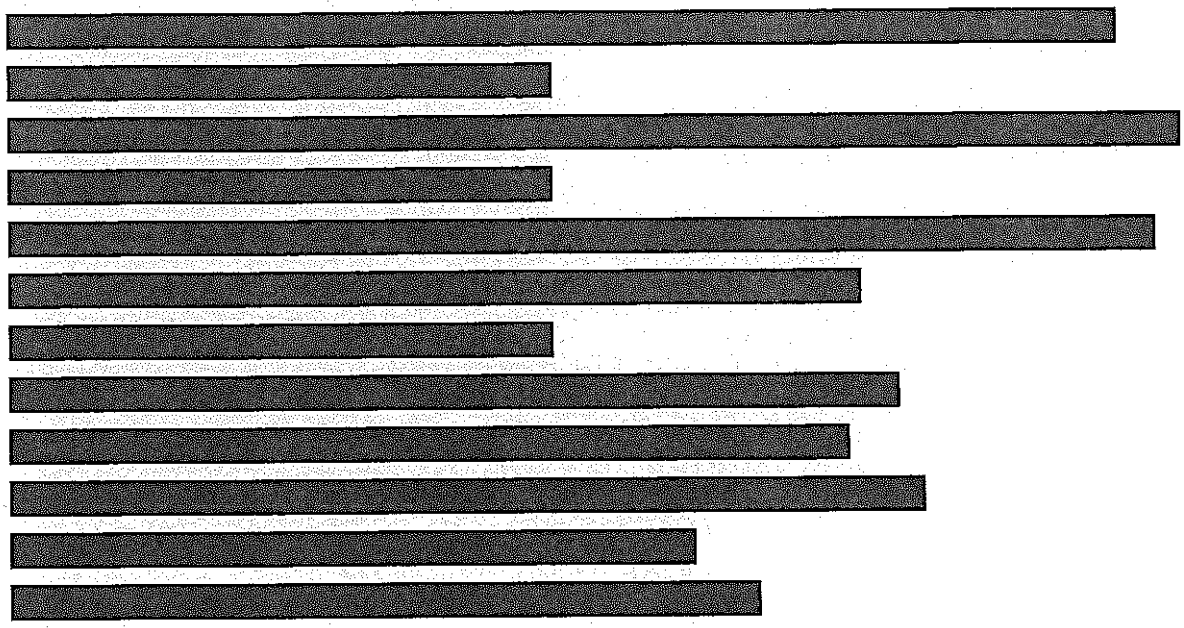
The site does have 132kV overhead power cables crossing diagonally on steel pylons. An approach has been made to UKPN as to the possibility of relocating these cable underground around the perimeter of the site to alleviate both visual and perceived health issues.

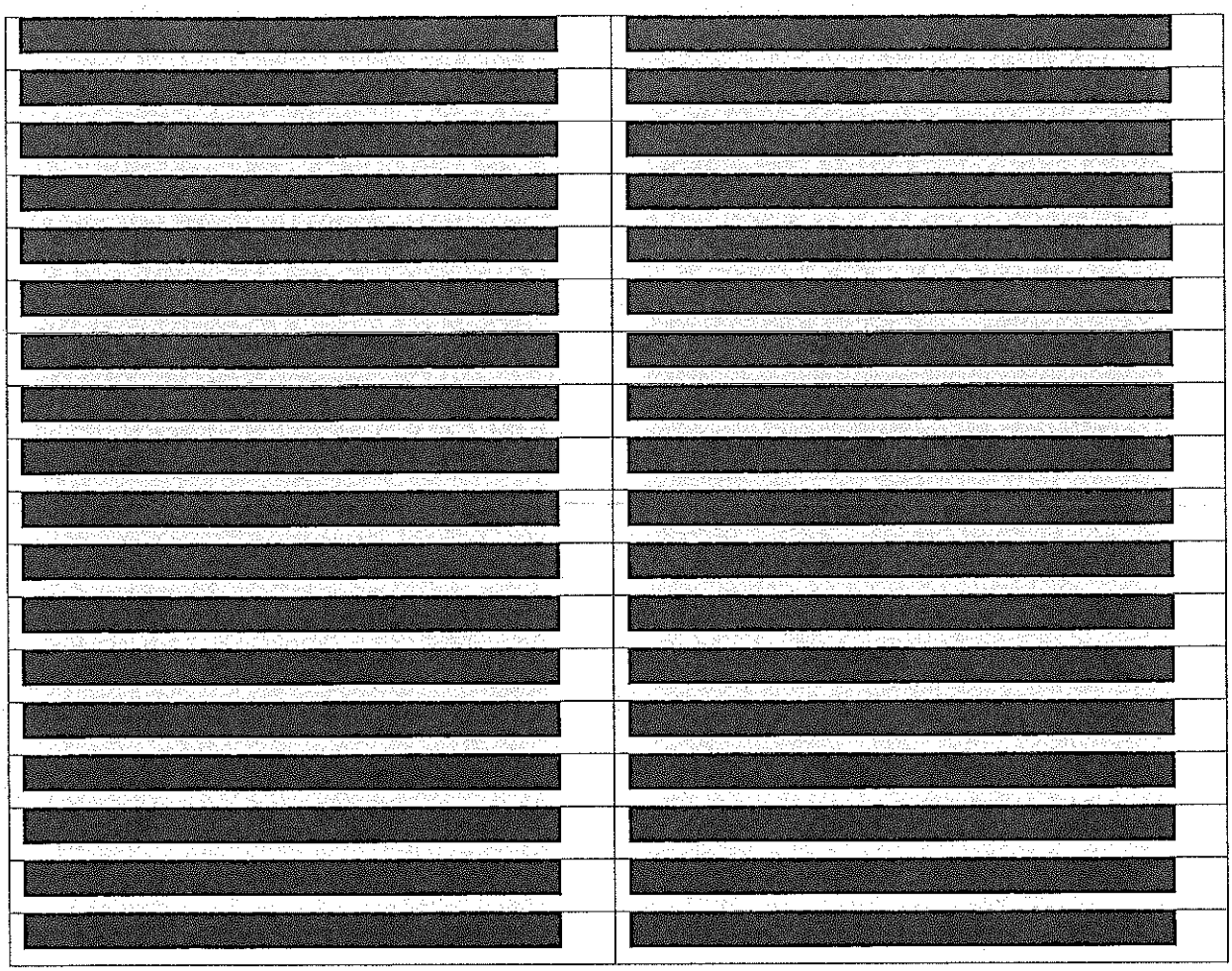
The may also be a requirement to relocate an existing mobile phone mast.

The proposed Sustainability Strategy for the new residential development is based on low carbon electrical energy only using air source heat pumps in the dwellings and therefore no gas supply is required.

An initial assessment of the developments power needs has been undertaken which includes the following:
Electrical loading: 22MVA diversified design load.
Water: Flow rate of 75 litres per second likely to require off-site reinforcement.
Surface Drainage: 800 cubic metres of attenuation will be required for every 1 hectare of impermeable area of the development (based upon 100 year +40% design event) achieved through various Sustainable Drainage Systems (SuDS) methods.
Foul Drainage: connection to the new waste water operation can be accommodated.

All of the above has been costed in detail (included in cost plan) and the cashflow and financial model show that these can be paid for out of the development account. Funded by U+I, public/private sector loans, and by plot developers.





Strategic Case

Strategic Approach

How will this scheme support your long term housing and economic growth ambitions? Please refer to any development plans and / or associated planning guidance policies

A key aim for Cambridgeshire and Peterborough Combined Authority is to double economic output over the next 25 years. This is a stretch target but is critical in underpinning the National Infrastructure Commission's prioritisation of Cambridge as part of a nationally important growth arc for UK future prosperity.

Supporting the economic success of the Great Cambridge area

The adopted Local Plans for Cambridge and South Cambridgeshire set a requirement across Greater Cambridge for 33,500 new homes by 2031 and 44,000 jobs to support continued economic success. The Local Plans set a joint development strategy that sequentially focuses development: within the urban area of Cambridge, on the edge of Cambridge through Green Belt release, at new settlements, and finally at larger, better served villages.

The Local Plans provide sufficient land to meet those identified needs without reliance on CNF, due to the uncertainties of delivering a major regeneration on site given previous challenges in relocating the CWRC. Nevertheless, the local plans allocate land at CNF for an area of 'Major Change' recognising the opportunity this major urban brownfield site brings. The area is not currently counted in assessments of planned housing or employment land supply. The Local Plans propose the preparation of a joint Area Action Plan (AAP) for the area, on which work has begun, with Issues and Options consultation in Spring 2019.

Work on the new joint Greater Cambridge Local Plan has begun with a new Local Development Scheme (October 2018) programming Issues and Options consultation for Autumn 2019. The joint Local Plan will include an update of objectively assessed housing and jobs needs for a period extending beyond 2031. Making best use of this brownfield site within the urban area will help reduce the need to consider other sites at locations lower in the development sequence, including pressure for further release of land in the Green Belt.

This additional growth will reduce housing pressures and contribute to maintaining the success of the local economy, and the provision of 40% affordable housing will make a significant contribution to supply of affordable housing for households in need in Greater Cambridge.

"An environmentally sustainable city"
A strategic objective of the Cambridge Local Plan (CLP) is to make Cambridge an environmentally sustainable city. The vision is for "a compact, dynamic city" building on the city's reputation for design excellence. CNFE will be planned, designed ad developed in a sustainably innovative way and with the use of sustainable modes of transport, help support the transition to a more environmentally sustainable and successful low carbon economy."
The AAP will optimise the development of the area for employment and housing, creating more internalised trips and reducing the need to travel. CNF is located near Cambridge North railway station and the Cambridgeshire Busway and is therefore well positioned to support higher density development and encourage sustainable modes of transport. The core site development will be transport neutral with suitable infrastructure to support walking and cycling, building on Cambridge's reputation as the country's foremost cycling city. Housing will be built at or close to Passivhaus standards and supplied with very low carbon energy and local water recycling.

"Catalyst for regeneration"
The CLP identifies CNF as an area of major change. It is one of the last remaining substantial brownfield sites within the city. Options for the area's regeneration have been put forward in the past, but the nature of existing uses on site, particularly the Cambridge Water Recycling Centre (CWRC), has curtailed proposals for comprehensive redevelopment. The development of CNFE will maximise the investment already made in the provision of the Cambridge North station unlocking the development potential of the surrounding land and will serve as a catalyst for wider regeneration.

"Design excellence and innovation"
A strategic objective of the CLP is for all new development in Cambridge to "be of the highest quality, in terms of design excellence and innovation, addressing the development's impact upon its surroundings and embracing the principles of sustainable design and construction"
New development will be of high quality, providing exceptional quality of life and place. Development will be compact in form and relatively dense, making for a street life that encourages face-to-face contact and exchange, as well as maximising the efficiency with which land is used. Access to green space and nature will be secured on site and through new and enhanced links to nearby parklands and the Fens.

"Meet the housing needs of the city"
The CLP expects all new development to "meet the housing needs of the city within its sub-region, delivering an appropriate mix of housing types, sizes and tenures to meet existing and future needs, including affordable housing." Housing in Cambridge has an important part to play in supporting both the local and national economy. Cambridge is a thriving, prosperous and dynamic city, with successful universities and demand for housing is high, with high rents and house prices. It is important to increase the supply of all types of housing and maintain a mix of different sizes, types and tenures of housing to meet a wide range of housing needs. There is significant pressure on housing delivery in Cambridge across all tenures.

"World leader in higher education, research, and knowledge-based industries"
"Supporting Cambridge's role as a world leader in higher education, research, and knowledge-based industries, while maintaining the quality of life and place that contribute to economic success" is a strategic objective of the CLP. Capacity exists at CNFE to create a vibrant, economically sustainable mixed-use quarter that will deliver substantial employment growth and support the continued success of the local economy. The new quarter will increase employment uses, and build on Cambridge Science Park's existing global reputation.

"Social cohesion and sustainability and a high quality of life"
A strategic objective of the CLP is to "promote social cohesion and sustainability and a high quality of life by maintaining and enhancing provision for open space, sports and recreation, community and leisure facilities, including arts and cultural venues that serve Cambridge and the sub-region."
Community space will form a key part of the CNFE development. Squares, parks and informal green space will support the expected high levels of amenity for housing. The public realm typology will embrace walking and cycling as the primary modes of movement, creating substantial areas of car-free public realm on the core site. This will be an important part of supporting transport-neutral development.

"Sustainable modes of transport"
The CLP requires, new developments to "be located to help minimise the distance people need to travel, and designed to make it easy for everyone to move around the city and access jobs and services by sustainable modes of transport." Furthermore, major developments on the edge of the

city and in urban extensions should be "supported by high quality public transport linking them to Cambridge's city centre and major centres of employment."
Central to the CNFE transport strategy is support for public transport, walking and cycling to, from and within the development.

What is your assessment of local housing requirements in your area and how will this scheme address these needs? Please refer to any data and evidence sources you have, including local housing need

The development will meet current est. housing needs

The recently adopted Local Plans for Cambridge (October 2018) and South Cambridgeshire (September 2018) set a requirement across Greater Cambridge for 33,500 new homes by 2031 (14,000 in the City, 19,500 in South Cambridgeshire) and 44,000 jobs (22,000 in each area) to support the continued economic success of the Greater Cambridge area. The Local Plans provide sufficient land to meet those identified needs without reliance on CNF, primarily due to the uncertainties of delivering a major regeneration on the site given challenges in relocating the CWRC, which had been explored several times over previous decades.

Nevertheless, the local plans each allocate land at CNF for an area of 'Major Change', recognising the opportunity this major urbanbrownfield site brings. Although the plans do not specify a quantum of development and the area is not currently counted in assessments of planned housing or employment land supply, they do propose a new joint Area Action Plan for the area, on which work has begun, with Issues and Options consultation planned for Spring 2019.

The redevelopment proposed by the HIF bid would enable a comprehensive approach to major regeneration of CNF, allowing development identified through the AAP to be relied on to contribute additional housing above that already provided in the current Local Plans and help to meet strategic housing requirements of Greater Cambridge to be identified in the next round of plan making. This additional growth will reduce housing pressures and the provision of 40% affordable housing will make a significant contribution to the overall supply of affordable housing for the large number of households in Greater Cambridge.

The site meets key criteria and is well connected to transport links

The site is near existing employment areas and well connected to transport links. It is next door to Cambridge Science Park and St John's Innovation Park, and the future employment area at CB4.

The site is also well connected to employment sites elsewhere in Cambridge and South Cambridgeshire by the Cambridge North Station and the Cambridge Guided Busway.

The CNFE site meets several sustainable development criteria. It represents part of the solution to meeting Greater Cambridge's current and future local housing needs because it is:
- previously developed land
- accessible by sustainable modes of transport
- close to employment and amenities within the City Centre
- able to deliver higher density development, and provide a wide variety of house types, tenures and sizes

The affordable component will help house low-income households and tackle homelessness

The scheme presents a real opportunity to increase the local supply of social housing at rents which are at or below Local Housing Allowance rates, and to support us in preventing and tackling homelessness.

The scheme would enable a range of affordable housing options to be delivered, to meet the needs across the low to medium income spectrum. The site would provide housing for first-time buyers, young professionals, families, students and older people, and would provide a variety of dwelling types, sizes and price points to meet the full range of housing needs. Alternative housing models such as custom build, shared living, cohousing and micro housing will also be explored.

The variety of house types and sizes that would be provided at the site would meet the findings of Oliver Letwin's Independent Review of Build Out, that delivery rates at larger sites could be increased by offering different house types and tenures.

There are around 4,500 applicants on the social housing register across Greater Cambridge. Local Housing Allowance rates are significantly lower than lower quartile rents in the area, making access to private rented housing for those on low incomes extremely difficult. For example, the lower quartile private rent for a two bedroom property in Cambridge City is around £1,000 per month, and £825 per month in South Cambridgeshire. This compares with a Local Housing Allowance rate of around £650 per month across Greater Cambridge.

Local affordability analysis suggests that the 35% of households resident in Greater Cambridge who are on incomes of less than £30k could, in theory, only afford social housing. Even at the higher end of this income group nothing larger than a one bedroom private rent or lower quartile resale in South Cambridgeshire would be affordable, with no rent or market housing affordable in the City.

Homelessness is a significant local issue. For example, during 2017-18, 112 homelessness applications were accepted in Cambridge, and 158 in South Cambridgeshire for those found to be unintentionally homeless, eligible for housing, and in priority need.

Affordable rents and affordable homes will help mid-income people too

Research commissioned for Greater Cambridge from Savills in 2017 found a significant shortfall in new supply to meet the needs of those with incomes below £50,000 in Greater Cambridge.

The City Council's local affordability analysis, carried out to build on Savill's findings, backs this up. It suggests that as well as those on low incomes, options for the 26% of households on incomes of £30k to £50k are also limited. For this group, the only housing assessed as affordable in Cambridge is a one bed average private resale or a one/two bedroom median private rent or shared ownership property. For South Cambridgeshire, anything larger than a two bedroom property in terms of average new-build or resale is likely to be unaffordable.

The scheme can help house people with specific needs

The scheme may also present opportunities to contribute to meeting the housing needs of specific groups.

- Older people. Research recently carried out for Greater Cambridge suggests that, if similar levels of current forms of provision were projected forward, Greater Cambridge would need an additional 1,823 units of age exclusive housing, 2,883 units of specialist housing (sheltered, enhanced sheltered or extra care), and 2,051 additional care beds by 2035.

- Accessible housing. National research suggests that, in 2014, just 7% of homes in England had all four accessibility features that provide the ability to visit by most people including wheelchair users. These features are level access to the entrance, a flush threshold, sufficiently wide doorways and circulation space, and a toilet at entrance level. Nearly 30% of existing homes were not capable of being adapted to this level. Cambridge City Council's emerging Local Plan requires that 5% of housing on strategic sites to meet higher accessibility standards.

- Gypsy and Traveller Accommodation. There is also the opportunity to consider whether provision of a transit and/or emergency stopping place for Gypsies and Travellers would be appropriate. There has been a noticeable increase over the last year or so of temporary unauthorised encampments across Greater Cambridge, particularly by those needing to access hospital treatment. The Greater Cambridge councils have tried to identify an appropriate location for a transit and/or emergency stopping place site in the area but have so far been unable to find anything suitable.

- Essential workers. Through development of the local housing strategy Cambridge City and South Cambridgeshire District Council are considering their policy position in relation to delivery of new homes specifically for local workers who cannot access social housing but are unable to afford to rent or buy in or around Cambridge. This follows a noticeable increase over the last year or so in the number of businesses and other organisations approaching the council with a potential interest in provision for this group.
Further evidence is being gathered to formulate a policy view on this, but subject to this the development of CNF could help to support any local priorities which may emerge.

No attachments

Local Support

How will this scheme demonstrate effective joint working? E.g. with neighbouring local authorities and other local partners, Private sector organisations, Local Enterprise Partnerships etc.

Cambridge City Council is leading this bid on behalf of the core site landowners proposed joint venture (Cambridge City Council and Anglian Water) and with the priority support and engagement of key partners.

We work closely together with partners to address the multi-dimensional challenges we face. These are members of our overarching CNFE programme review group and the CNFE vision supports their objectives.

- The Cambridgeshire and Peterborough Combined Authority (CPCA). Key ambitions for the CPCA include improving transport and digital infrastructure, doubling the size of the economy, and accelerating house building rates to meet the area's requirements.

- The Greater Cambridge Partnership (GCP). A partnership between Cambridge City Council, South Cambridgeshire District Council, Cambridgeshire County Council, the University of Cambridge and the CPCA. Their role is to deliver infrastructure, housing and skills to support the CPCA's strategy and ambitious growth plans for the area.

- Partnerships that represent the growth corridors Cambridge sits at the heart of. They include London-Stansted-Cambridge, Oxford-Milton Keynes-Cambridge, Norwich-Cambridge.

- We share services with neighbouring Councils including the Greater Cambridge Shared Planning Service with South Cambridgeshire DC, who are leading the development of the CNF Area Action

Plan, underpinning the economic development strategic aims of the Local Authorities. We are also engaged closely with the County Council on proposals for the appropriate planning route.

The HIF business case is prioritised by the CPCA as the only HIF Forward Funding proposal in the area. Letters of support for the application were submitted by the Mayor of the CPCA, Chair of GCP and other key stakeholders, including Cambridge MP Daniel Zeichner.

We will work with partners to deliver the scheme

Delivery of the scheme will be overseen on a partnership basis:
- Cambridge City Council and Anglian Water are working as partners to enable the development of the core site through the relocation of the CWRC. They have previously worked via an MOU, but have now agreed Heads of Terms for a Joint Venture agreement via a Limited Liability Partnership.
- A master developer for the core site, U+I, has been procured through an OJEU tender process. U+I will work as partners to promote the site, obtain planning permission, fund and deliver infrastructure, and procure the delivery of the housing.
- Anglian Water and Cambridge City Council are working closely with the CPCA and GCP to ensure that the project is supported through, aligns with, and helps to provide solutions to key wider issues including housing and transport.
- Community and business engagement is a critical element and we are working CNFE area local stakeholder partners and Councillors on the evolving development of the project at this early stage, although this will increase if we are successful in the bid.

The Planning Framework
- The Area Action Plan (AAP) for the CNF area, including the CNFE core site, is being developed independently by Greater Cambridge Planning Service to ensure timely delivery. The AAP is proposed to extend from the core site (which is within the City Council's boundaries) to include the Cambridge Science Park and other key employment sites in South Cambridgeshire.
- We are engaging closely with the County Council as the Waste Planning Authority

Please demonstrate local support for your scheme (for example in Local Plans and policies)

Regenerating the CNFE has been part of our local plan for over 10 years

Since 2006 it has been an objective of Cambridge City Council and South Cambridgeshire District Council to secure the regeneration of the CNF area to make better use of this important location within the city.

The CNF Area of Major Change designation was included in the new Local Plans for both Local authorities. Recognising the challenges in relocating the CWRC, the policies promote the area primarily for employment use. There were no challenges made to the allocation of the CNF area in the local plans.

The area, extent, and the quantum and phasing of development, is proposed to be established through the production of a new joint Area Action Plan.

A scheme with similar parameters got significant support during consultation

Work on preparing a joint Area Action Plan (AAP) began in early 2014. An Issues and Options draft was published for consultation in December 2014. This considered the potential of expanding the AAP boundary beyond the Local Plan site allocation to include the Cambridge Science Park. It also set out the strategic objectives for the area and four broad options for the areas regeneration – the 4 options are below.

No representations were received objecting to the proposed to bring the area forward for redevelopment. The vast majority of respondents supported the vision to maximise the development potential.

The consultation results indicated a clear preference for spatial development Option 4, maximum level of development (see below). But the cost of relocating the CWRC made that option unfeasible. Therefore, proposals were drafted to take forward Option 2, which the majority of consultees considered was a deliverable, if not ambitious, option.

The four development options were issued for consultation in 2014:

1: Lower Level of Redevelopment – This focused on development of the vacant easily available land parcels, with all existing business areas and CWRC retained on site. Offices/R&D 7.7ha (162,000sqm=13,600 jobs)+02.ha B2/B8, 1.2ha Open Space, and no residential.

2: Medium Level of Redevelopment: Focused on areas of more easily available land, introducing residential development near the new station and the redevelopment of some of the existing employment sites to provide a buffer between the retained CWRC and the residential development to the south. Offices/R&D+ 7.8ha (180,000sqm=15,100 jobs), Industrial (B2/B8)-7.1ha, Open Space +4.3ha, and Residential +4.4ha (440 dwellings).

3: Higher Level of Development: This proposal upgrading the existing CWRC facility, would mean rationalisation of the facility reducing the overall size of the facility. This would free up further land and increase the development capacity of the area. Offices/R&D+ 14.7ha (307,000sqm=25,800 jobs), Industrial (B2/B8)+0.5ha, Open Space+ 5.0ha, and Residential +6.7ha (630 dwellings).

4: Maximum Level of Development. This option proposed to relocate the CWRC offsite, enabling comprehensive redevelopment across the entire area for employment-led mixed use. Offices/R&D+ 16.0ha (328,000sqm=27,600 jobs), Industrial (B2/B8)+5.8ha, Open Space+ 5.0ha and Residential +6.7ha (630 dwellings).

The joint CNF AAP will be developed in tandem with implementation of the HIF. In accordance with the Local Development Schemes of both authorities, a further Issues & Options consultation is to be undertaken before or upon announcement of the HIF being approved. This would be predicated on the WRC being relocated off the site. As the consenting process for the relocation of the WRC is advanced, so too the joint AAP will be developed to a pre-submission stage to ensure it can demonstrate the regeneration benefits to be realised through the HIF. The weight and status of the AAP will increase with the certainty of the WRC relocating and be sufficiently advanced to guide and enable pre-application engagement and consultation on an outline planning permission for the core site.

Can you provide evidence of support for your proposal from the following:

	Support	**Further Details**
Local MP(s)	Yes	The Leader and CEO of the Council meet regularly with Daniel Zeichner in planning strategic development of the city and a letter of support from him is attached below.

Filename	**Description**
D Zeichner MP – Letter of Support[2].pdf	MP Letter of Support

	Support	Further Details
Local community	Yes	As part of the development of the Cambridge Northern Fridge AAP, the Greater Cambridge Planning Service have established three forum groups to engage with key stakeholders and community. These are for landowners / developers; businesses and communities; and local ward members across the wider Northern Fringe area. In addition Officers from other departments within Cambridge City Council regularly attend a Northern Area Committee to brief and receive feedback from ward members and local community on proposed development in their area

Filename	Description
Statement on Partnership with the Local Community 1.12.18.docx	Local Support

	Support	Further Details
Local Enterprise Partnership(s)	Yes	We have worked closely with the LEP and they provided a letter of support at EOI stage. Since that time the LEP has been subsumed into the Combined Authority and at the business case stage, the combined letter of support comes from the Mayor. We are engaging with the Combined Authority's Business board and growth team in developing meanwhile and longer term plans for the site.

Filename	Description
GCGCP support for CNFE v180917[4].pdf	LEP Support Letter

	Support	Further Details
Supporting upper tier local authorities	Yes	We work closely together with key partners including the Cambridgeshire and Peterborough Combined Authority (CPCA), of which Cambridge City is a core member, to address the multi-dimensional challenges we face. Partners are members of our overarching CNFE programme review group and the CNFE vision supports their objectives. Key ambitions for the CPCAA include improving transport and digital infrastructure, doubling the size of the economy, and accelerating house building rates to meet the area's requirements. The HIF business case is prioritised by the CPCA as the only HIF Forward Funding proposal in the area.

Filename	Description
CNFE-CPCA Letter of Support 27.11.18.pdf	Combined Authority letter of support

	Support	Further Details
Supporting lower tier local authorities	Yes	The Greater Cambridge Partnership (GCP). A partnership between Cambridge City Council, South Cambridgeshire District Council, Cambridgeshire County Council, the University of Cambridge and the CPCA. It uses the City Deal to deliver infrastructure, housing and skills to support the CPCA's strategy and ambitious growth plans for the area.

Filename	Description
CNFE Letter of Support LH 1218.pdf	City Council Letter of Support
Letter of Support CNFE – 03 12 18.pdf	South Cambridgeshire Letter of Support
CFNE – GCP Letter of Support.pdf	GCP Letter of Support

	Support	Further Details
Any other key stakeholders	No	N/A

No attachments

Meeting housing policy objectives

How will your scheme support the Government's ambitions for housing, as set out in the Housing White Paper?

The CNFE scheme – which the HIF funding will enable – directly addresses following themes in the Housing White Paper (HWP).

"Planning for the right homes in the right places"

The HWP emphasises delivering homes where demand is greatest. Cambridge is one of the fastest-growing and most productive cities in the country, with a world-renowned knowledge economy. And the Cam-KM-Ox Arc and will increase the need for development in and around the city.

The Cambridgeshire & Peterborough Combined Authority (CA) has set a goal of doubling GVA which includes reinforcing Greater Cambridge's position as a global centre of excellence for research, development and business growth. This will drive substantial need for new homes across Greater Cambridge.

The new homes in CNFE will make a significant contribution to Greater Cambridge housing needs, and help address affordability pressures.

"Making more land available for homes in the right places by maximising the contribution from brownfield and surplus public land"

The HWP states an ambition to make the most of publicly owned surplus land with the aim of releasing public land for 160,000 homes during this Parliament.

The CNFE core site is on land owned by Cambridge City Council, a public authority, and Anglian Water, a regulated utility company.

Cambridge is surrounded by the Green Belt. NPPF2 expects all reasonable options to be assessed before land is released from the Green Belt. This includes the reuse of previously developed land and increasing densities at locations well-served by public transport. The CNFE site meets these criteria.

"Making better use of land for housing by encouraging higher densities"

Development within CNFE will be of high-density, low-to-medium-rise, at scale. The core site could deliver 5,600 homes across 47 hectares – an unprecedented level of density for Cambridge.

"Building homes faster"

The CNFE site is identified for redevelopment through the recently adopted Cambridge Local Plan 2018 and the South Cambridgeshire Local Plan 2018. Relocation of the CWRC will make this site suitable for residential development.

The Housing White Paper and NPPF2 both seek to increase the rate of housing delivery.

Our plan is to build the CNFE core site out in a central case of [redacted]5 years – an average delivery rate of [redacted] dwellings per annum. This is far quicker than would normally be achieved on a single strategic site.

We will manage make this fast-track delivery happen by:

engaging with the Greater Cambridge Planning Services preparing the joint CNF Area Action Plan (AAP)

submitting a hybrid planning application so that early phases of the proposed development can be delivered quicker

preparing a design code for the first phases of the proposed development alongside the hybrid application

using a Planning Performance Agreement process that will reduce the number of pre-commencement conditions

planning for delivery from the outset by having a master developer on board

diversifying the market so that there is not undue reliance on too few types, tenures and delivery routes

overcoming capacity constraints and meeting high construction standards by using modern construction methods

phasing development to deliver site infrastructure smoothly, optimising the amount and range of development lots available in each phase

"Diversifying the market"

The HWP encourages operators to diversify the housing market and embrace innovative and efficient methods (like modular and factory-built homes), and encourages institutional investment in the private rented sector.

We support this approach and have identified three ways to put these areas into action at CNFE:

Cater to a wide array of markets including first-time buyers, young professionals, families, students and older people. Offer a variety of dwelling types, sizes and price points across the site. This will give the scheme broad appeal and market resilience. And we expect 40% of housing to be affordable.

- Capture some of the pent up institutional build-to-rent demand by offering a substantial number of private rented units in a desirable build-to-rent (BTR) location. Initial analysis suggests BTR could account for [redacted]% of delivery.

- Explore alternative housing models. U+I, the master developer of the core, and TOWN, U+I's partner, have investigated or delivered custom build, shared living, cohousing and micro housing. These may not be a large proportion of the overall housing mix but they will diversify the housing offer, aid affordability and catalyse a new community.

"Boosting productivity and innovation by encouraging modern methods of construction (MMC)"

Increased use of MMC on Strategic Sites is an aspiration of the Combined Authority and we will investigate how to realise the potential MMC benefits of less construction time on site, better and more consistent quality, more efficient materials sourcing and use, and improved energy efficiency.

We have commissioned a study to examine:

-how MMC could help deliver the scheme

-how MMC could speed up our build-out rate

-the potential for MMC to improve environmental performance

-the MMC approaches that might be deployed across the scheme and whether the master developer should mandate or encourage them

-the potential for dedicated on-site MMC facilities.

"Building good quality homes"

Quality, innovation and sustainability will be at the core of the development. Development proposals will be assessed against a stringent design code.

This project will deliver a sustainable city quarter with low operational energy consumption, at or close to the Passivhaus standard for residential development; commercial spaces will achieve BREEAM Excellent.

Nature will form an important part of the development. A green corridor will connect to Milton Country Park, providing a focus for ecology, planting and biodiversity. Green walls and roofs will soften the urban form, provide habitat and help cool buildings.

Scheme Objectives

What are the overarching objectives of the scheme? Objectives should be SMART – specific, measurable, achievable, relevant and time constrained

- Objective 1: Relocate the CWRC to a suitable new site. S – Relates to existing and new CWRC facilities and continuity of Anglian Water services while releasing development land. M – Objective is met when the new CWRC is completed and fully operational. A – Relocation achievable subject to S35 and DCO processes and HIF funding approval. R – Relocation directly facilitates the creation of residential development land. T – Programme for relocation established and deliverable subject to HIF funding.
- Objective 2. Unlock 47 hectares of fully serviced brownfield land for residential-led mixed use development within the core site. S- Relates directly to the remediation and reuse of the core site (CWRC plus City Council land) once HIF-funded relocation has taken place. M – Objective is met when CWRC is relocated, planning permission obtained and site infrastructure installed such that development land can be brought to market. A – Partners unified behind HIF bid to facilitate residential-led reuse of core site, with planning framework to be established through new Area Action Plan (AAP). R – Directly enables delivery of additional housing. T – Programme established to unlock the land following existing CWRC decommissioning and planning permission being obtained.
- Objective 3. Deliver 5,600 homes and 4,000 jobs within the core site. S – Relates specifically to the development potential of the core site once HIF-funded relocation has taken place. M –

Clear targets set for level and rate of housing and commercial delivery. A – Strong partner support, planning framework in process through AAP and master developer already procured through OJEU process. R – Relates directly to the delivery of homes and job outputs. T – Delivery timeframe established and strategies to meet it in development.

- Objective 4. Deliver a further 3,000 homes and 20,000 jobs across the wider CNF area over the Area Action Plan Period. S – Relates to specific sites identified within wider CNF area where constraints to development are lifted by HIF-funded CWRC relocation. M – Understanding of landowner aspiration including indicative masterplans. A – Targets are based on an assessment of development capacity and assessment of how rational landowners will act when land is allocated for relevant uses. CPO will be considered if obstacles to the realisation of additional development are encountered. R – Relates to the delivery of homes and jobs on land currently constrained by the location of the CWRC. T – Prioritise sites developable within the plan period covered by the forthcoming AAP.
- Objective 5. Deliver transport-neutral growth across the CNF area. S – Relates to the decoupling of development from the growth of harmful impacts on the transport network, thereby making the proposed scale of development following HIF-funded relocation of the CWRC achievable. M – Targets, likely to be expressed in terms of peak-time movement volumes, will be set and monitored by the AAP. A – Based on expectation of AAP policies setting standards for mixed-use development, modal share, parking restraint and improvements in public transport, walking and cycling infrastructure. R – Transport capacity and impacts directly affect the level of development that can be accommodated under the AAP. T – To be achieved through monitoring on occupation of each development phase.
- Objective 6. Deliver a new city quarter achieving exemplary standards of design and sustainability. S – Relates to the design quality and environmental performance of development enabled by HIF-funded CWRC relocation. M – Standards and policies will be set and monitored: i) strategically for CNFE as a whole through policies in the AAP; ii) for the core site by a design code. These will include fabric energy efficiency, renewable energy supply, water conservation and reuse, operational and embodied carbon emissions, sustainable drainage, green infrastructure, biodiversity and (related to transport neutrality) modal share. A – Standards will be related to and/or improve upon existing recognised benchmarks and levels of performance in development in Cambridge. R – Relates directly to the quality and sustainability of the housing and other development enabled by CWRC relocation. T – Relates to development taking place during the AAP plan period.
- Objective 7. Create a mixed community with good homes for all. S – Relates to the design, amenity and mix of types and tenures of the 8,625 homes to be delivered within CNFE following the HIF-funded relocation of the CWRC. For example, the achievement of 40% affordable housing on the core site. M- Policies will be set by the AAP by reference to the Housing Market Assessment and identified housing need in Cambridge and South Cambridgeshire, and for the core site will be carried through into the planning permission and design code. Policies and standards will relate to inter alia the level and mix of housing types (eg, family houses, apartments, specialist housing) and tenures (eg, social and affordable rent, shared ownership, private rented, owner-occupied, community-led), space and external amenity standards, accessibility, thermal performance and daylighting. A – Standards will be related to national and local policies and needs. R – Relates directly to the mix and quality of housing enabled by CWRC relocation. T – Relates to development taking place during the AAP plan period.

Please list the criteria (critical success factors – CSFs) against which you will assess the successful delivery of the project and the evaluation of options

- Strategic fit and business needs ("Strategic Case") -Recycling brownfield land for housing development – target at least 47 hectares of urban brownfield land released within site 1A and 1B and for housing-led development. -Enabling rapid additional large-scale housing delivery – target at least 5,600 new homes on Sites 1A and 1B by [redacted].
- Value for money ("Economic case") -Maximising social, economic and environmental benefits relative to costs – target a benefit-to-cost ratio of at least 2. -Maximising the number of dwellings delivered for the level of public investment – target a HIF cost per dwelling of [redacted] or less.
- Capacity and capability ("Commercial case") -Facilitating operational continuity of water recycling for Greater Cambridge – target delivery of water recycling facilities with capacity to serve up to 250,000 people (including Waterbeach option) for waste water treatment and 548,000 people for sludge treatment (rising to over 1 million before 2025), across around 100 places. -Releasing a development opportunity that is private sector and able to deliver – target [redacted] of private-sector-led investment once the CWRC is relocated.
- Affordability ("Financial case") -Public funding requirement is focused specifically on the relocation/remediation of the CWRC – target 100% private-sector-led or commercially-based funding for all non-CWRC-related development costs. -Public funding is affordable from available sources of finance – target a HIF funding requirement of less than [redacted], or if greater than [redacted] other sources of funding are available.
- Achievability ("Project management case") -Deliverable by the partners involved – target capability within Cambridge City Council and Anglian Water to manage and deliver the chosen CWRC relocation option. -Private sector delivery capacity for housing – target demonstrable private sector appetite to fund and manage delivery of infrastructure and development associated with release of CWRC land.

Rationale for intervention

What is the market failure being addressed? Please provide a detailed account of why the existing arrangements, both financial and delivery, are not sufficient to deliver the scheme and the rationale for government intervention (HIF funding)

The market failure being addressed

The Cambridge Water Recycling Centre (CWRC) has occupied its 39 hectare site since the 19th century when it was some distance from the urban edge of Cambridge. It now lies south of (or inside) the A14, which currently forms the northern urban boundary of the city.

Over the years, the city has grown up to and around the CWRC. Much adjacent land within the Northern Fringe is now home to a critical mass of highly productive science-led industries. Infrastructure improvements include the Cambridgeshire Busway and the recently-opened Cambridge North railway station, and make the site well connected – locally and globally. Demand for housing in Cambridge is extremely high, as evidenced by one of the most stretched income-to-house-price ratios in the country, and has significantly outweighed supply for housing in Cambridge over the last 20 years resulting in a growing affordability issue and developers bringing forward the majority of other viable brownfield development opportunities in the city.

The city's growth is limited by many factors, including the Green Belt and the importance of conserving the historic environment. This increases pressure for development further outside the city and imposes additional costs on workers and businesses in the form of increased travel times and distances, rising congestion and lost productivity.

Consequently, the CWRC represents a completely sub-optimal land use for its location. The opportunity cost of using a prime mixed-use site for a water recycling and sewage treatment plant has never been higher.

And these costs are not limited to the CWRC site itself. Some 42 additional hectares of potentially suitable land around the site cannot be developed for housing uses because of the odour constraints. Residential development is not suitable within the immediate area, and the enhancement of existing land uses (eg, employment) that is acceptable is of limited commercial viability.

The market failure, therefore, lies in the inability of the market to deliver relocation of the CWRC and release of the site for land despite the strong and longstanding signals that the site should be released for housing-led development. These failures owe to combination of the regulatory environment under which Anglian Water operates, the size and nature of the transitional costs and risks associated with relocation, and the difficulty of internalising the wider benefits of relocation to third-party land. Specifically:

-Regulation. The CWRC currently satisfies Anglian Water's operational requirements and allows it to meet its statutory obligations so there is no operational need to relocate the CWRC. Ofwat's regulatory framework, which is supported by the Water Industry Act 1991 and other legislation, does not allow Anglian Water to raise finance, or charge its customers, to pay the costs of building a replacement facility.

-Viability and commerciality. The scale and concentration of costs and risks associated with relocating the CWRC are such that no private investor or developer would perceive sufficient profit to be available from a redevelopment scheme to make those costs/risks worth taking on speculatively, Even if a land value uplift well in excess of the costs could be generated, the discount a rational investor would apply to future returns for the compound time and cost risks would make it unacceptable as an investment.

-Coordination externalities. It follows from the extensive negative externalities attributable to the CWRC's current location that relocating it would have positive external impacts on other land (ie, currently within the odour zone). Internalising these impacts (eg, by assembling land in advance, or coordinating among landowners) could, in theory, improve the viability of a market-led solution but in practice there is no effective and reliable mechanism for achieving this.

Why existing arrangements are not sufficient to deliver the scheme

The absence of commercial appetite to finance relocation and the inability of Anglian Water to raise funding itself mean that the only feasible solution is public funding. However, no other suitable source of public funding is available:

-Similar concerns about the scale and nature of cost and risk that apply to commercial funding routes apply equally to existing public sources. The project is simply too large, and the time horizon for returns too long, for example for local authorities to prudently deploy reserves, or use their borrowing powers, for such an undertaking.

-Even if such investment could be justified on prudential grounds, the opportunity cost of deploying capital funds, reserves and/or borrowing capacity to the project would be so great as to crowd out other investments which may be seen as safer, more immediately necessary and more directly linked to the statutory functions that must be local authorities' first priority.

The rationale for government intervention

The rationale for government intervention is to overcome the market failures described and limits of existing arrangements in order to unlock CWRC relocation and enable the market to deliver circa 8,600 homes in Cambridge Northern Fringe East.

Provision of HIF funding would create or enable efficiencies and positive externalities:

-A new Area Action Plan (AAP) will be able to be prepared on the basis that housing-led development is a feasible and beneficial land use, and land-use planning undertaken across the CNF area so that different ownerships are coordinated to maximise delivery across the area and level land-value uplift to pay for key housing-related infrastructure;

-A better jobs-housing balance will be created in the CNF area which will reduce pressure on existing (particularly transport) infrastructure, and existing high-value land-uses such as science parks will be able to be 'upzoned' to provide for additional density of jobs;

-Pressure to identify land outside the urban area for an equivalent number of additional homes over a similar timeframe, with substantial and probably less well-coordinated infrastructure requirements of their own and higher external costs in journey times and lost productivity, will be alleviated.

No attachments

Additional Information

If you have any further information to support your strategic case, which has not already been captured in the above, please include this here

Whilst no specific appendices are referenced in our responses to Section 2 above we would draw your attention to the full list of appendices that should be read in conjunction with our submission. The full list of all appendices are included after Section 8.

[redacted] [redacted]

[redacted] [redacted]

Options Appraisal

Outline of options

Please provide a summary of all options considered during co-development related to the extent of HIF funding required. Please set out the rationale for why these options were discounted in favour of the preferred option

Relocating the Cambridge WRC (CWRC) in order to bring forward transformational development in Cambridge Northern Fringe (CNF) has been an ambition for several decades, during that time, many options have been considered.

The last attempt to relocate the CWRC culminated in 2006-07 with identification of potential relocations sites by Cambridgeshire County Council. Ultimately, there was no confidence that the cost of the relocation could be paid for out of the land receipts (with the subsequent global financial crisis further weakening this), and the initiative was halted.

The work undertaken during that process was the starting point for the preparation of the options developed during the co-development period.

-Several technical options for relocating the CWRC to an alternative site were explored by consultants MWH and costed by Arcadis. These included different sites and solutions for tunnelling, discharge points and retention of some facilities on the existing site. This helped in understanding the impact of a complete relocation on odour contours and the creation of new developable areas within the Northern Fringe.

-The option of rationalising the CWRC and retaining it on site was also explored. This would still be at a considerable cost, whilst not allowing the release of any land for residential development on the core Site. The potential of the City Council's land along Cowley Road (8 hectares), assuming the CWRC remains on site in a do-nothing scenario, was explored. The limited business, storage and industrial uses which could come forward on that land would not generate sufficient value to fund even the partial relocation of the CWRC. It would also not achieve the intended regeneration objectives.

The option of a complete relocation was chosen for its ability to minimise odour risk and maximise residential development. The process of identify and assessing potential locations for the new WRC has been further developed during the co-development period. This has including asking Cambridgeshire County Council for pre-application advice relating to the methodology for the site selection.

The relocation of the CWRC requires three elements of construction, as follows.

Connecting tunnels (for waste water flows) from the existing CWRC to the new one, and from the new WRC to the receiving watercourse for the effluent (treated water).

The water recycling centre itself, to separate the waste water from the sludge and to treat the former.

The sludge treatment centre to treat the resultant sludge and use it to produce gas from the anaerobic digestion process, which is then used to generate electricity via a Combined Heat and Power engine.

The options for these elements have been explored by Anglian Water's @one Alliance team to produce a design for these elements to allow the cost of them to be determined. These costs have formed the basis of the quantum of HIF funding requested by the submission of this Business Case.

The cost of items 2 and 3 above are approximately the same, wherever the new plant is relocated. The location of them does affect the length of the tunnels and therefore the cost of them. The combination of the site identification process undertaken so far, and the design work of the new WRC has allowed Anglian Water to identify a likely range of cost for the relocated WRC, and hence the amount needed from HIF. The range is £[redacted] to £227m, depending on the distance of the relocated WRC from the existing site.

As Anglian Water's customers cannot fund the relocation of CWRC, they have taken the top of the cost range as the quantum of funding needed from HIF. During the co-development phase of the Business Case, we were advised to use the higher end of the range as the amount to request. In our answer to the question in Section 6 (Do you aim to recover any of the HIF funding (to be retained locally)?) we have explained that our draw down from the Fund will be in line with actual spend, which will be based on the location of the new CWRC determined by the DCO or PA/CPO consenting process.

Please summarise shortlisted options considered and how these meet the required objectives of the scheme detailed earlier in the business case.

	With requested HIF funding	**With a reduced amount of HIF funding**	**Do nothing (no HIF funding)**
HIF Funding Required	£227,000,000	£227,000,000	£0
Total scheme cost	[redacted]	[redacted]	[redacted]
Housing units delivered	8625	0	0
Estimated % affordable	40 %	0 %	0 %
[redacted]	[redacted]	[redacted]	[redacted]
Amount of LA funding (inc. LGF)	£0	£0	£0
Amont of other Central Govt. funding	£0	£0	£0
Amount of private sector funding	[redacted]	[redacted]	[redacted]
Amount of other public sector funding	£0	£0	£0

1. **With requested HIF funding**

Through the relocation of the WRC, Option 1 unlocks a significant brownfield site for development with potential for 5,600 new homes and could enable the development of a further 3,025 homes on other sites constrained by odour. In doing so, it meets the operational, financial and risk management requirements of Anglian Water and the City Council. Option 1 shows that a viable and

deliverable scheme can be brought forward and the joint ventures, development agreements and procedures to do this are largely in place.

What strategic risks do the shortlisted options carry?

Description	Likelihood	Impact
Planning risk – A new joint Area Action Plan is required for the site to realise the development potential and set the development parameters. Following which a hybrid application will be submitted and subsequently reserved matters. The political risk of meeting all the sustainability, housing and transport aspirations of the stakeholders will be a key part of this.	Low	MediumLow
DCO or LPA route and relocation delivery risk – A DCO process is the preferred planning route to acquire the land and secure planning permission for the new water recycling centre. Should the LPA route be required, or delivery of the replacement facilities be delayed, it may impact on the housing delivery programme.	Low	High
Market risk – There will be market cycles in the delivery of housing where certain tenures and mixes will be in greater demand than others – which may impact speed of delivery. The wider sites outside of our ownership will require the assistance of third parties to be delivered – all have been progressing residential redevelopment plans in isolation.	MediumLow	Low
Please note that a more detailed risk register for Option 1 is included in Appendix AC.		

What are the constraints related to this shortlisted option?

- Land ownership – While we control the majority of the land released for housing from the relocation of the water recycling centre there are other land owners who need to cooperate to enable the comprehensive and coordinated development to deliver the housing numbers stated. Site 2A – has a masterplan and a development partner on board to bring forward housing already. The owners of Site 2C have plans to redevelop for housing in the medium term. However site 2B is in disjointed ownership. We are therefore looking at the potential to acquire via private treaty or CPO powers.
  Please refer o the report on Land Assembly Strategy prepared by GVA included in Appendix K
- Contamination/remediation – While initial desktop analysis and test pits suggest the contamination that will remain following the relocation of the water recycling centre will be manageable – there will inevitably be hot spots of contamination and remaining constraints from the subterranean Victorian water treatment infrastructure.
- Pylons – There are 132MW electricity pylons running diagonally across the site. These will need to be buried and rerouted to enable development. While this is a fairly common

practice in development the exact treatment, buffer zones, timing, and costs will have to be evolved with the masterplan.

- Transport neutrality – Part of the brief for the site, and a likely requirement of the emerging Area Action Plan, will be that the housing and commercial development across the entire CNF area has a net neutral effect on the transport network. A very carefully thought out transport strategy will therefore be agreed with a strong focus on links to the station, and pedestrian/cycle links to the surrounding area.

Please provide details of any inter-dependencies related to this shortlisted option

- For the full HIF funding scenario the key interdependencies are all preplanning: A S35 application to the Secretary of State unlocks the DCO process in Q1 2019, along with a positive result to our HIF business case, after which the Area Action Plan can be progressed in 2019, once the SoS decision on the DCO is received in Q1 2021 (and the Judicial Review period has expired), the Area Action Plan can then be submitted for Examination in Public and both the housing site planning application and relocated water recycling centre construction can commence following receipt of the inspector's report on the AAP. If the DCO route is not possible, the Local Planning Application (LPA) route could potentially delay relocation, as additional consenting would be necessary and potentially a CPO. Work is being undertaken to mitigate the potential time impacts of an LPA route.

Please provide details of any inter-dependencies related to this shortlisted option

- For the full HIF funding scenario the key interdependencies are all preplanning: A S35 application to the Secretary of State unlocks the DCO process in Q1 2019, along with a positive result to our HIF business case, after which the Area Action Plan can be progressed in 2019, once the SoS decision on the DCO is received in Q1 2021 (and the Judicial Review period has expired), the Area Action Plan can then be submitted for Examination in Public and both the housing site planning application and relocated water recycling centre construction can commence following receipt of the inspector's report on the AAP. If the DCO route is not possible, the Local Planning Application (LPA) route could potentially delay relocation, as additional consenting would be necessary and potentially a CPO. Work is being undertaken to mitigate the potential time impacts of an LPA route.

Please provide details of the exit strategy for the shortlisted options

- Cambridge City Council (via their joint venture with Anglian Water) will offer building licenses and/or long leasehold interests to plot developers (institutions, house builders, commercial developers, or others) – who will pay a land price for the plot and potentially further overage and estate charges. Quality will be monitored, maintained and policed under the build license, the design code, and contractually by the master developer U+I under the Master Development Agreement. Following completion of construction, the Council will have an ongoing passive head leaseholder interest in the site.
- In terms of the green, grey, social and public infrastructure the master developer (U+I) will deliver these elements under a build license and pass ownership to the relevant public authority, management company, charity or other to operate on an ongoing basis.

2. With a reduced amount of HIF funding

Three variations of Option 2 have been considered over a number of years.

Option 2a: Anglian Water part-subsidising the WRC relocation.

Anglian Water would finance in whole or in part the relocation of the CWRC. As referred to in other sections, Anglian Water has no operational requirement to relocate the CWRC. The regulatory and funders' restrictions prevent the part-subsidisation of the relocation.

Option 2b: Cross-funding relocation from future development value

Under this option, the cost of relocating and the CWRC would be partly met as a development cost within the context of developing the Core Site for housing, with the effect being that the land value would be discounted by a corresponding sum.

The development already has a heavy burden of on and off-site infrastructure costs, a target of 40% affordable housing, and significant transport contributions and direct costs which means it cannot support additional costs without reducing the land value to a level that would be considered unviable given the scale and nature of the costs and risks associated with the relocation.

Option 2c: A third party part-subsidising the works via a loan

Under this option, the cost of relocating and remediating the WRC would be met in whole or in part by a loan. It is likely that this would be a substantial amount, so having an impact on viability. This would be the same as under option 2b, as the loan and associated costs would still be met by the land value. Even if only a small percentage of the CWRC relocation cost were to be funded via a loan, there would be significant risks and delays, as follows:

-Option requires HIF funding to be secured

- Time constraints on arranging such a loan arrangement would result in uneconomic premiums

- Anglian Water would not be able to commit to the planning works required to enable the relocation until 100% of the required funding was guaranteed

What strategic risks do the shortlisted options carry?

Description	Likelihood	Impact
No significant risks – as only low density industrial/commercial uses are feasible	Low	Low

What are the constraints related to this shortlisted option

- The remaining odour zone prevents any housing development in the area.

Please provide details of any inter-dependencies related to this shortlisted option

- There is no housing development in these options and therefore no interdependencies.

Please provide details of the exit strategy for the shortlisted options

- There is no housing development in these options and therefore no exit strategies.

Please summarise any economic appraisal conducted for this shortlisted option, relative to the do nothing (no HIF funding) option

- As confirmed with Cambridge City Council's planning department, there is only one option under consideration at the moment, based on the relocation of the Cambridge Water Recycling Centre (CWRC). No housing delivery is possible without the relocation of the CWRC. While it is possible for the CWRC to release circa 55 hectares for development, this is limited

to light industrial uses due to planning constraints associated with the CWRC odour zone. The potential for light industrial development has been considered within the reference case (no HIF funding) and the associated land value uplift is discounted from the figures presented below.

The headline outputs are set out below:

Net homes delivered: [redacted] (accounting for 20% displacement)

Land Value Uplift (residential development: [redacted]

Land Value Uplift (commercial development: [redacted]

External benefits of affordable housing: [redacted]

Transport external costs: [redacted]

Combined impacts of the option: [redacted] (NB: This excludes the positive impact of the transport user benefits of the A10 mitigation programme which could be apportioned to CNFE. These would increase the total benefit of this option to [redacted]).

HIF funding request (including OB): [redacted] (present value, including Optimism Bias)

Benefit Cost Ratio (BCR) for housing component (Housing Benefits / HIF Funding): [redacted]

BCR for public sector (Total benefits / public sector costs: [redacted] (potential to increase to [redacted] with the apportioned transport user benefits of the A10 mitigations programme)

As identified above, this is the only option under consideration.

3. Do nothing (no HIF funding)

Without HIF funding, the CWRC cannot be relocated because of market failure. Anglian Water has no operational reason to relocate the CWRC. Therefore, the relocation cannot be funded by customers' bills using the regulatory processes.

The relocation of the WRC has been explored over 20 years, and it has been deemed unviable due to the large upfront costs:

Savills Strategic Investment Advisory Team were asked to comment on the ability of Anglian Water to raise funding for the relocation of the CWRC. Their report can be found in Appendix J.

The report gives the following reasons why the total funding required could not be raised.

Anglian Water's inability to use the CWRC site as security or collateral for lending purposes due to restrictions from the regulatory regime and/or its funders.

Even if it were possible to raise funds, the funding horizon is too long because of the length of time, [redacted] to [redacted] years, before the funds could be repaid to the funder from the proceeds of land sales.

The interest payable on the funding could not be paid until proceeds from land receipts were received. This would mean that interest, which is normally paid from the start of the funding arrangement, could not be paid. This would also dramatically increase the cost of the fund, even if a funder could be found.

For Anglian Water, the operational imperative of having the new WRC operational before the CWRC can be decommissioned means that 100% of the funding needs to be in place from the start of the project. The time needed to raise these funds, even if they could be raised, would result in a significant delay in the start of the project.

The planning risks involved with the project, both the Core Site and the relocation site, are significant and impact the value of the land even if it could be used as collateral (see above). Market risk and cost risk also add to this problem.

For these reasons, funding could not be raised to cover the cost of relocating the CWRC.

What strategic risks do the shortlisted options carry?

Description	Likelihood	Impact
No significant risks – as only low density industrial/commercial uses are feasible	Low	Low

What are the constraints related to this shortlisted option

- The remaining odour zone prevents any housing development in the area.

Please provide details of any inter-dependencies related to this shortlisted option

- There is no housing development in these options and therefore no interdependencies.

Please provide details of the exit strategy for the shortlisted options

- There is no housing development in these options and therefore no exit strategies.

Please summarise any economic appraisal conducted for this shortlisted option, relative to the do nothing (no HIF funding) option

- There is no housing development in these options and therefore no economic appraisal.

Options Summary

Please summarise why the preferred option, with the requested HIF funding, has been chosen and why the other shortlisted options have been discounted – this should make reference to advantages and disadvantages of the options in relation to scheme objectives and CSFs

Option 1 is selected as the preferred option because it is the only option that (i) enables all of the strategic objectives to be met and (ii) delivers against all of the critical success factors.

In simple terms, relocation of the CWRC is a binary outcome: either it occurs, and all of the strategic objectives and critical success factors are brought into play; or it doesn't, and none of the strategic objectives and few of the CSFs are meaningfully achievable. And the CWRC is only able to be relocated with provision of the full level of HIF funding being sought.

Please refer to the table in Appendix L for a full cross-reference of the options against the strategic objectives and CSFs.

In summary:

-Option 1 achieves, or enables the achievement of, all of the objectives and CSFs. It is the best performing option.

-Option is the worst-performing option in that it could incur HIF funding but without much likelihood of delivering housing outputs. As such it specifically fails on CSFs concerned with value for money in housing delivery and in maximising social, economic and environmental benefits relative to costs.

-Option 3 achieves none of the strategic objectives but is a better performing option than Option 2 because it is effectively the status quo. Therefore, no additional benefits are achieved but no additional costs incurred either.

Please provide a summary of the impact should funding not be received

If funding is not received then the Do Nothing (Option 3) will become the single option available.

The impact of this considered below.

Impact on housing deliver

-8,625 fewer homes will be delivered within the CNF / Area Action Plan (AAP) area.

-Housing prices in Cambridge are likely to continue to grow rapidly as a key opportunity to increase supply within the city is lost.

-The delivery of substantive additional housing above that already planned for under the local plan is unlikely to materialise.

-Meeting the growth needs of Greater Cambridgeshire beyond 2031 would become even more challenging and require the consideration of significantly less suitable and sustainable locations.

-The current spatial strategy is reliant on a relatively small number of very large development sites, which are in private ownership, and over which the Local Authorities have little influence over build-out rates, giving rise to the risk of market fluctuations impacting overall delivery.

-Being more distributed and less supported by infrastructure and mixed uses, new housing development is likely to be on the whole more car-dependent, increasing the overall impact on the highway network or requiring greater investment in public transport initiatives to mitigate.

-Pressure for new growth within the city itself will lead to increased development pressure on less suitable and more sensitive areas adjacent to the city's edges, with a focus on greenfield sites and including the greenbelt.

Impact on the AAP area

-The CNFE area will continue to be constrained by the odour levels, with all future housing development being considered unsuitable. Future development will be restricted to general industrial uses that are suitable to be located within the odour zones. This area of Cambridge will continue to have an unsustainable mix of land uses, dominated by commercial and light industrial, and with no supporting residential or amenity uses.?

-The current land use pattern would continue, with many of the current and future land-hungry uses remaining and with little incentive on owners to achieve more land-efficient uses

-Cambridge North railway station will continue to be located next to a series of primarily light-industrial uses in the short to medium term and will fall short of its potential in terms of capacity and strategic rationale.

-The nearby Science Parks will lose the potential to have a large quantity of new housing within close proximity. This will compound their existing car-dominated travel patterns, preventing them from growing sustainably in future years.

Economic impact

-There is a significant risk that the lack off additional housing will curtail the potential of Cambridge's local economy to continue to grow. In particular, it is unlikely that the Mayor of the Combined Authority will achieve his ambition of doubling GVA

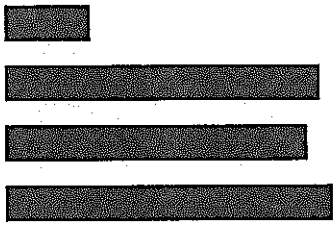
-Slow growth in the Cambridge economy is likely to have knock on effects for the economic prospects of the surrounding districts

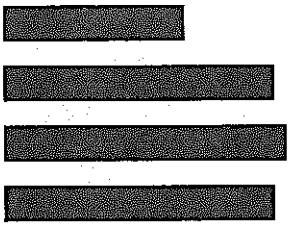
-The high house prices will impact on the ability of the service industry to retain and attract new staff

-The attractiveness of Cambridge as a place for work and enterprise will be affected by the requirement to build further strategic roads to manage congestion to enable workers to access the Cambridge market.

-Ultimately, the above could influence global business decisions on where to locate, resulting in a loss of investment not only in Cambridgeshire but potentially in the UK.

If you have any further information to support your options appraisal, which has not already been captured in the above, please include these here





Economic Case

Net Present Value (NPV) of housing benefits

Please provide the estimated NPV (in 2018/19 prices) of the additional housing benefits (as monetised using land value uplift) of the preferred option relative to the do-nothing option

[redacted]

Please provide the estimated NPV (in 2018/19 prices) of the current use land value for the scheme overall (before additionality adjustments)

[redacted]

Please provide the estimated NPV (in 2018/19 prices) of the site specific residential land value for the scheme overall (before additionality adjustments)

[redacted]

Please provide the undiscounted values used to estimate the residential land value calculation across all sites

GDV (compliant with the Economic Case guidance)	[redacted]
Build costs	[redacted]
Externals	[redacted]
Professional fees	[redacted]
Sales costs	[redacted]
Finance costs	[redacted]
Contingencies	[redacted]
Developer profit	[redacted]
Please provide the additionality % assumed for the scheme (deadweight and displacement)	75%

Please provide a detailed explanation of the method and assumptions used to derive the deadweight and displacement estimates. As part of this, an estimate of deadweight for each site individually must be provided, by illustrating how the homes/each site are linked to the infrastructure

Please refer to the Economic Impact Assessment included in Appendix M for all tables and charts referred to or referenced in our response to this section.

Deadweight

Without HIF funding for the relocation of Cambridge Water Recycling Centre, opportunities for residential development are extremely limited:

- No residential development could come forward on site 1A (the Cambridge Water Recycling Centre) as the site will remain in active use.
- The remaining sites fall within a Waste Water Treatment Safeguarding Area, or odour zone, which prevents any residential development within 600 metres of the site and restricts employment land-use to light industrial. It has been confirmed with the Cambridge City Council planning department that light industrial uses are the only acceptable alterative land use across the wider sites in any scenario where the CWRC remains operational.
- However, Anglian Water does not utilise it entire site and it is possible that the unused elements could be made available to industrial uses. Therefore, in the absence of HIF funding, we assume that 55 acres (22.5 ha) of the of the existing Anglian Water site will be made available to light industrial uses. Based on the assumptions set about above, this would increase the land value of the Anglian Water by [redacted] (before displacement).

Based on the assumptions set out above, we have assumed deadweight of zero homes, but have assumed that the land values in the odour zone will increase by [redacted] at current prices (before displacement), reflecting the alternative uses that can be brought forward on the Anglian Water site. While this is a non-residential impact, we have incorporated it into this section of the analysis to more clearly set out the land value uplift that would be achieved in the preferred option compared to the alternative uses that could be achieved without HIF. We have applied a displacement factor of 35% to this land use, in line with the other non-residential land uses considered in Q4.3.1.

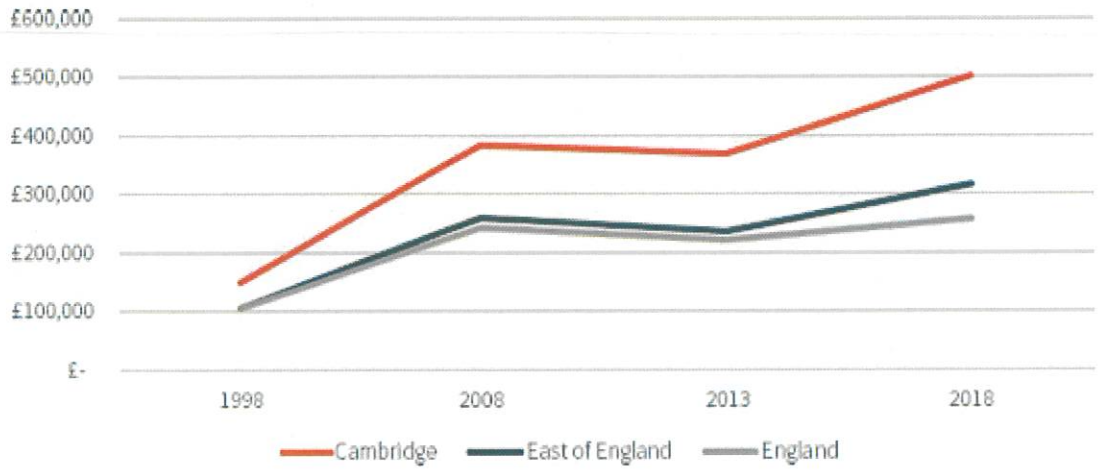
All other sites are expected to be retained for their existing uses and so there will be no uplift in land values for these sites.

[redacted]

House Prices

As identified, the strength of the housing market can have a notable impact on the level of displacement generated from a development. To this end Cambridge is one of the least affordable cities in the UK with an average house price of £500,700, well above the average for the East of England (£315,400) and almost double the price seen nationally (£256,000). House prices of this order reflect the high levels of demand for property in the area suggesting that the likelihood for displacement will be low.

Figure 4.1 Cambridge House Price in Context 1998-2018



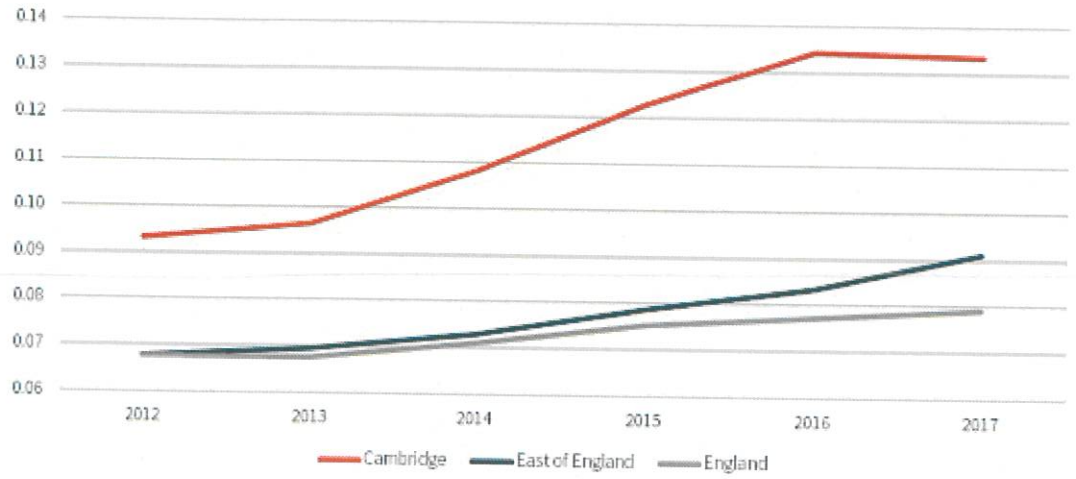
Source: Land Registry, 2018. Note historical prices have been deflated to current prices.

Figure 4.1: Cambridge House Price in Context 1998-2018

Local house prices relative to incomes also indicate high levels of demand in the market and indicate that house prices relative house prices cannot be explained simply by relative differences in local house prices. The median house price in Cambridge was almost thirteen times median gross earnings in 2017. This is an exceptionally high ratio – directly comparable to the London housing market and markedly above the national average where house prices are 8 times median earnings.

Trend analysis presented in Figures 4.1 and 4.2 both indicate that house prices and the house price to income ratio have both increased significantly. The latter demonstrates that the growth of house prices has significantly outpaced earnings in Cambridge.

Figure 4.2 Median House Price to Median Earnings



Source: Shelter, 2017

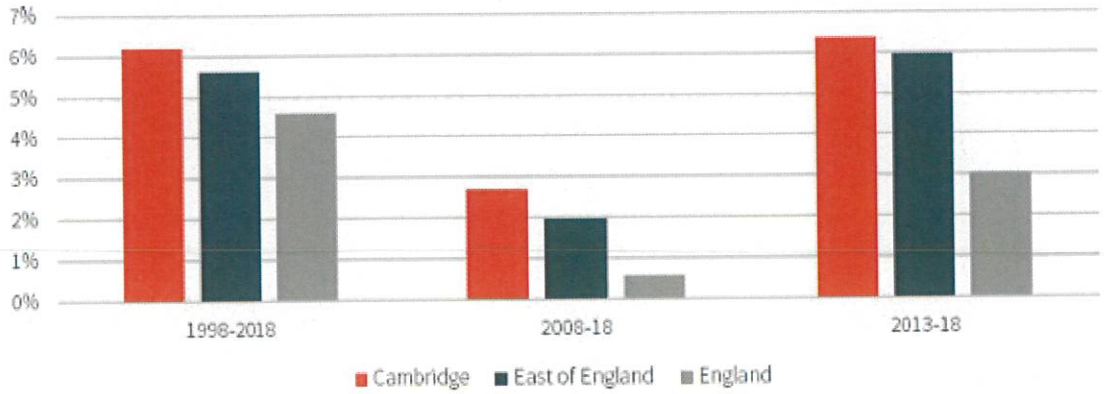
Figure 4.2 Median House Price to Median Earnings

Historically the housing market in Cambridge has been resilient, with compound annual growth rates (over 20, 10 and 5 years) showing consistent and sustained house price growth, that outstrips the rate seen nationally (Figure 4.2). House prices in Cambridge have increased by 72% since 2008, compared to growth of 47% in the East of England and 34% across England. This sustained growth rate again further highlights the high demand in Cambridge's housing market, linked in part to the globally mobile workforce that is attracted to employers and research institutions in the area.

Housing Supply

Between 2012 and 2017, Cambridge delivered around 4,600 homes (DCLG Live Table 122, 2017) – almost 1,000 homes per annum – and despite this level of delivery, house prices have continued to grow, demonstrating that an increase in supply has had a limited effect on local house prices.

Figure 4.3 Compound Annual House Price Growth Rate



Source: Land Registry, 2018. Note historical prices have been deflated to current prices.

Figure 4.3 Compound Annual House Price Growth Rate

Affordable Housing

Overall, 40% of the housing unlocked by HIF will be affordable. This will also help to limit displacement, as affordable housing would be expected to supplement the delivery of market homes, rather than compete directly with them. In addition, the provision of affordable housing in North Cambridge, will not preclude the development of additional affordable homes either elsewhere in Cambridge or across the wider housing market area (such as Cambridgeshire), given the high demand for them.

Additionality Summary

Of the 8,625 gross homes identified on dependent sites, none are expected to be delivered without HIF funding – only a modest addition to the stock of industrial land will be possible, with a net value increase of [redacted]. However,

[redacted]

This results in 6,900 net homes delivered, with additionality of 80%. This is in line with the MHCLG Appraisal Guide benchmark for a low level of additionality which would apply to supply focused

developments, including developments where there is a high 'clean-up cost' that mean that the site is unviable and would not go ahead in the counterfactual / reference case.

The figures presented above are for the number of housing units, however the effect on land value uplift will be affected by the profile of development and the deadweight associated with the additional uses that would be permitted on the CWRC in a do-nothing scenario. The corresponding values and proportions associated with deadweight and displacement (in Present Values) are estimated to be:

- [redacted]
- [redacted]

These give a combined additionality factor of 75%.

These figures are set out in Table 4.1.9.

Please provide a detailed explanation of the method and assumptions underlying the estimates of NPV of residential land value, NPV of current use value, and NPV of additional housing benefits above, as outlined in the Economic Case guidance

The economic impacts of the direct housing benefits associated with the CNFE development set out in the above have been assessed through Land Value Uplift in line with the MHCLG Appraisal Guide and Green Book. The main assumptions underpinning our approach are considered in turn below.

Overarching assumptions

Discounting

In line with the HIF Business Case Guidance, housing benefits have been estimated over a 60-year appraisal period, with future values discounted by 3.5% a year for years 1-30 and 3% a year for years 31-60.

Real land value growth:

We have assumed that property prices will increase at 2% per annum in real terms. This is consistent with the assumptions underpinning the Development Appraisal for the growth of property sales values and is significantly below the 5% benchmark assumption provided in the Forward Funding Business Case Guidance for sites where no local market assessment is available.

For context, in the last 20 years (since 1998) real terms average property prices in Cambridge have increased at 6% a year (Constant Average Growth Rate). In the most recent ten years (2008-18), real average property prices have increased by 3% a year (CAGR) and in the most recent five years for which data is available, average property price growth has been 6% a year – a return to the long-term growth rate. Therefore, we consider the land value growth assumption to be a conservative assumption, which is significantly below long-term trends for the local market and is considered to be achievable by U+I, our development partners.

The impact of alternative land value growth scenarios has been set out in the Sensitivity Tests.

Assessment sites

The Economic Case is based on the level of housing that is expected to come forward across the Cambridge North area. Overall five sites have been identified which can accommodate 8,625 homes. Details of these sites are set out in Appendix A.

The sites include:

- the CWRC, which will only become available for residential development once the water treatment works has been relocated
- wider sites that are located in the odour zone of the water treatment works and on which significant residential development can only occur once the treatment works has been relocated.

In addition to these two residential sites, we have also considered the new site for the CWRC. The new facility will be located at a greenfield location and its current economic land value will reflect agricultural uses. Consequently, there is the potential to capture a modest additional uplift associated with the land's conversion to Anglian Water's uses.

Gross residential land values

The gross residential land values associated with the development unlocked by HIF funding have been estimated by deducting the total development costs (excluding site abnormals and

infrastructure costs) from the estimated Gross Development Value of the residential units. This has been estimated on an annual basis for each housing site. The headline figures are set out below and the detailed assumptions are available from the Economic Impact Assessment model (provided as an appendix M).

The assessment of GDV has considered three factors:

1. Gross development trajectories associated with each site

These are taken from the masterplan developed for the core and wider sites, which provides the total number of housing units accommodated at each site and the development trajectories for each site.

2. Unit size mix

The site level masterplans also provide information on the expected unit size mix for each of the sites. We have applied this to the gross development trajectory on a site by site basis to forecast the profile of housing completions, by unit size over the assessment period.

(NB: due to the format in which sales values and build costs have been provided, we have disaggregated houses by their number of bedrooms. However, apartments are presented as a single unit type).

3. Average Sales values

Average sales values have been taken from the development appraisal for each site.

For the core site, we have based our assessment on the average sales values of a house and the average sales value of an apartments (as this is the only level of disaggregation that can be extracted from the development appraisals). These are weighted averages based on the mix of housing proposed for the core site and reflect the 2018/19 sales values provided in the development appraisal. Over the whole of the core site, each home will have an average estimated NIA of 101 sqm and each apartment is expected to be 61 sqm.

For the wider sites, we are able to use the average sales values for each type of house (2-bed, 3-bed and 4-bed). These are based on consistent assumptions concerning the sales values psm and reflect the level of disaggregation that is available for housing units on these sites. For apartments, we only have cost information on the density mix of each site, rather than the unit size mix and have presented the sales values on a consistent basis. Taking relevant information from the cost plan and development appraisal, we have estimated the average sales price of an apartment on each of the wider sites. The variation in sales prices across sites reflects the relative density of development (i.e. the average NIA of an apartment) for each site. They are based on the same sales price assumptions as for the core site.

The average sales values take account of the two market tenures that will be accommodated on site – market sale and market rent. In line with MHCLG Guidance, the sales value is not reduced for affordable properties (i.e. all properties are assumed to sell at these market rates). The wider benefits associated with affordable housing are set out in Q4.2.1.

Overall, the average sales value in 2018/19 prices for a house is based on £550 psf for a market house and £475 for a PRS house (providing an average sales value of £525 across both tenures). The average sales price of an apartment is based on £600 psf for a market apartment and £475 for

a PRS apartment (providing an average sales prices of £558 psf across both tenures). As set out above, these values are expected to increase at 2% per annum, in line with the development appraisal.

These assumptions have informed our assessment of scheme GDV as set out in Tables 4.1.1, 4.1.2, 4.1.3, and 4.1.4. (The calculations underpinning the assessment of sales values for the core and wider sites is available from the supporting spreadsheet 'Cost Input Calculations' appended alongside the LVU model.)

Table 4.1.1: Gross Development Overview

[REDACTED TABLES]

Table 4.1.3: Average Sales Values, by Site

[in table 4.1.4, the profile of GDV is:

- uprated by 2% a year for future sales, in line with the development trajectory
- discounted by 3.5% per annum for any benefits accruing in future years. The Present Value GDV is the value quoted in the Business Case template form.)

[REDACTED TABLE]

Assumptions for Building Costs

Build costs have been estimated on the following basis:

Basic build costs have been provided by Faithful+Gould

- They have provided a build costs which align to the development schedule provided above. These costs are exclusive of external works and all infrastructure works, however an

allowance has been included for incorporating Passivhaus construction (@10% of basic build costs) and contingency (@ 3% of basic build costs).

The additional site development costs

These have been estimated on the following basis for the core site:

- **Externals.** These are estimated to be [redacted] of the basic build costs, in line with the assumptions set out in the Cost Plan. These costs include: residential enhancements (such as blue roofs, green roofs and photovoltaics), on-plot infrastructure (eg tertiary roads), on-plot public realm, on-plot blue and green infrastructure, plus on-site roads (primary and secondary roads within the red-line boundary) and site-wide blue green infrastructure (within the red-line boundary). (Please refer to the spreadsheet 'cost input calculations' for further information).
- **Professional fees.** Assumed to be [redacted] of basic build costs in line with the development appraisal assumptions
- **Marketing costs / sales costs.** Assumed to be [redacted] of the sales prices, in line with the development appraisal
- **Developer profit.** Assumed to be [redacted] in line with the development appraisal.
- **Finance costs.** Assumed to be [redacted] based on the proportionate costs of finance set out in the development appraisal.

(NB: For marketing costs and development profit, the sales price is assumed to be the 'achieved' sales price, rather than the price at market values, to avoid overstating these costs. Based on the development appraisal, affordable sale properties are expected to achieve [redacted] and affordable rent is expected to achieve [redacted] of the market price.

Building costs are assumed to remain constant over the assessment period, in line with the assumptions set out in the development appraisal, except for developer profit and sales costs which increase in line with the sales price – as they are estimated as proportion of total sales.

For the wider sites, in the absence of site specific information, we have continued to estimate the additional development costs on a consistent basis. The only exception is External Costs – were we have assumed 15% of basic build costs as, in the absence of site specific costs, this is closer in line to the MHCLG standard assumption.

The calculations underpinning the build cost assumptions are set out in the table below. The variation in costs for apartments on the core and wider sites reflects the varying development densities of development set out in the Masterplan. Below we have provided a single average

figure for the Wider sites for conciseness, however the average build cost per unit (with contingency and Passivhaus) ranges from £170,000 per unit on site 2C to £189,000 on site 2B.

[REDACTED TABLE]

Table 4.1.5: Basic Build Cost Assumptions

An overview of the additional development costs (for all sites) is set out in Table 4.1.6. A more detailed breakdown is available from the Economic Model.

[REDACTED TABLE]

Table 4.1.6: Development Costs

It is important to note that the high-quality proposals for this development may not be fully reflected in the achievable sales price and may therefore result in a lower direct economic benefit. Proposals such as Passivhaus will also lead to a broad range of external environmental and financial benefits not quantified in this assessment.

Residential Land Values are therefore estimated to be £877 million (PV), calculated by deducting the costs of construction from the sites' GDV, as set out in Table 4.1.7. (Note: this is the economic assessment of land values and will differ from the price paid for the site and/or the assessment set out in the Financial Case, as it is based on a different set of assumptions).

[REDACTED TABLE]

Table 4.1.7: Residential Land Value Estimate

Existing land values

The housing sites are predominantly located on brownfield land, with the exception of the golf course, where part of the site can be considered to be greenfield.

For the Anglian Water site, it has been possible to use the VOA land value estimate on which the Rateable Value for the site has been estimated. This has been provided by Anglian Water and is considered to be a robust assessment of the existing land use value.

For the remainder of the core site and the wider sites, in the absence of detailed market information, we have taken the MHCLG Benchmark figures for industrial land values in Cambridge. This is considered to be an appropriate baseline figure, given that light industrial is the predominant land use in the wider sites. The only exception is the Golf Course, which is classified as greenfield land and is subject to significant development constraints. It is therefore likely to have a value below that for light industrial uses (for example agricultural uses in Cambridgeshire are as low as £21,420 per ha) and therefore this approach is considered to provide a conservative estimate.

All figures (from the VOA and MHCLG) are for 2017 and the figures presented below have been updated at 2% a year for 1 years to estimate the existing land values.

Based on these assumptions, the total value of the sites unlocked for development, in their current use, is estimated to be £55 million.

[REDACT TABLE]

Table 4.1.8: Existing Land Values

Additionality

Additionality has been applied on the following basis:

- [redacted]
- Deadweight is assumed to be 0%.

The basis for these estimates is set out in the previous question concerning additionalty.

Net Present Value of Housing Benefits

Drawing on the assumptions set out above, we have estimated the NPV of the private economic benefits of new housing (based on land value uplift) to be £617 million after accounting for existing land values, deadweight and displacement.

[REDACTED TABLE] [redacted]

[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

NPV of external impacts of additional housing

Please provide the estimated NPV (in 2018/19 prices) of external impacts of additional housing from the preferred option relative to the do-nothing option

Type	Summary of impact	NPV of impact
Affordable Housing	Health benefits of affordable rented properties	[redacted]
Transport User Costs	Cost to existing transport users of the new development	[redacted]

Please provide a detailed explanation of the method and assumptions underlying these estimates, as outlined in the Economic Case guidance

The external impacts of the development also include affordable housing and transport external costs. These are considered in turn below

Affordable Housing

The assessment of affordable housing is based on the guidance from the DCLG Appraisal Guide which states that the health impacts of improved affordable housing amount to £2,400 per affordable rented dwelling.

The associated external impact has been estimated as follows

- 40% of housing completions on the dependent sites is assumed to be affordable, in line with the Masterplan proposals. This level of affordable housing is compliant with the affordable housing policy in the Local Plan.
- Of the total affordable homes [redacted] will be 'affordable sale' properties and the remaining will be 'affordable rent'. It is these 'affordable rent' properties that MHCLG indicate can be considered as generating additional health impacts which can be assessed here.
- Affordable rent provision has been discounted by [redacted] to reflect the assumed programme wide level of displacement.
- [redacted]
- Deadweight has not been considered as no homes are expected to come forward on the core or wider sites in the reference case.

The headline figures are set out in Table 4.2.1)

[REDACTED TABLE]

Table 4.2.1: Net Eternal Impacts of Affordable Housing

Transport External Costs

Available transport models:

A package of pre-existing models developed by and for Cambridge City Council was used to assess transport impacts as part of the Ely to Cambridge Transport Study including Strand 3 CNFEC SP Transport Report (February 2018), and the Ely to Cambridge Transport Study, Preliminary Strategic Outline Business Case (January 2018). The study utilised the Cambridgeshire County Council Cambridge Sub-Regional Model (CSRM2). The CNFE site was a core part of the assessment and the model has been used by Cambridgeshire County Council to consider the impacts of development on this, and other sites, across Greater Cambridge's and the wider model study area.

CSRM2 is a WebTAG compliant strategic transport model which uses base data from 2015, including:

- Validation against traffic and transportation counts
- All networks (highway, PT, walk, cycle)
- Representation of parking and Park and Ride
- Base transport movement data
- Base land use data
- Matrices with up-to-date mobile phone data

Modelling Transport External Costs:

For the purposes of the assessment of Transport User Costs, Cambridgeshire County Council's transport consultants (Mott MacDonald) used a Reference Case 2031 version of the highway component of the CSRM2 model. This incorporates all committed transport schemes up to 2031 and all underlying growth and committed Local Plan development, excluding the CNFE site.

Cambridgeshire County Council agreed that the model was fit for purpose for use in the Strand 3 work and preparation of the Preliminary Strategic Outline Business Case and Highways England has been engaged throughout the A10 study.

The Reference Case also includes a number of committed strategic highways measure that are programmed for delivery delivered across the study area including Highways England's A14 Cambridge to Huntingdon improvement and associated junction works. The committed transport improvements provide a large localised increase in capacity. These will be complemented by other measures identified in the Ely to Cambridge Transport Study which the local authorities are exploring. There are no transport schemes directly associated with the CNFE site (other than alterations to the access junctions) and therefore the development will be required to make a per development unit transport contribution to the funding pool for the package of schemes in the A10 corridor.

A second 2031 model run has also been developed that incorporates the additional trips associated with the CNFE development.

The CNFE development trips have been determined through a stand-alone multi-mod al trip generation and trip distribution assessment, utilising people trip rates, Office for National Statistics (ONS) Census data and an aspirational mode share that reflects the exemplar nature of the proposals in terms of creating a high level of sustainability and public transport accessibility and achieving a low vehicular mode share. These trips have been distributed to origins and destinations using the same trip distribution as forecast by the CSRM2 model for the NorthernFringe.

Importantly, the low vehicular mode share is in line for the proposed CNFE housing-led development is in line with the trip budget assessed in the Ely to Cambridge A10 Transport Study. Cambridgeshire County Council are also supportive of this strategy.

The outputs from these two model runs scenarios have been input into TUBA to provide an assessment of the Transport External Costs associated with the additional highway trips.

No future year modelling scenarios are available beyond 2031 and so the outputs from the 2031 model were extrapolated to represent all future years. The County Council have indicated that they consider this approach to be reasonable.

The outputs of the modelling described above indicate that the Transport User Costs of the proposed development at CNFE is [redacted] over 60 years using a base year of 2010 and an assumption of a two-hour peak period. This reflects the additional costs or disbenefits borne by existing/background users of the transport network as a result of the additional trips generated by the CNFE.

To ensure that the figures are consistent with the wider present values included in this business case, it has been necessary to re-base the TUBA outputs to a 2018/19 base year. To do this we have:

- Accounted for the discounting (at 3.5% a year) from 2018 to 2010 by adjusting the figure upwards by 32% (1.0358).

- Accounted for inflation by adjusting the 2010 figure upwards by 14% in line with the GDP inflator (WebTAG Databook, May 2018).

The combined impact of these two adjustments is to increase the transport user costs by [redacted] to [redacted]

The outputs of the TUBA modelling and the adjustment for discounting and inflation are provided as an appendix M to the Business Case.

While this is a large number, it is important to note that, as we cannot isolate the impacts of the A10 Corridor that directly relate to the contributions to be made by CNFE. However, an analysis of the transport user benefits of this scheme showed a significant positive benefit of [redacted] (at 2018 prices - adopting the same adjustment from a 2010 assessment base year as set out above) to the transport network as a result of the [redacted] (also 2018 prices) of mitigation measures proposed by this study. The CNFE site provides a contribution of [redacted] towards these mitigation measures, these contributions equate to [redacted] of the overall scheme cost and therefore the same proportion of benefit could reasonably be attributed to CNFE. This equates to a transport user benefit [redacted] associated with the CNFE site which broadly matches the estimated transport external costs of the development and highlights that the scheme will ultimately have a minimal net impact on the local transport network.

We therefore consider the true impact of the proposed development on the transport network is only [redacted]. However, in accordance with guidance we have modelled the more substantial impact through our economic case

We have not undertaken any additional sensitivity testing relating to trip generation for the following reasons:

- The A10 study has specified a trip budget that the development must work within to be acceptable in highway capacity terms;
- The transport strategy will include a package of infrastructure improvements and behavioural change initiatives to achieve the mode split;
- The trip generation of the development will be monitored on a phase by phase basis to ensure the trip budget is on track.
- The location of the development (close to employment, public transport (bus, guided bus, and rail), and cycle networks) supports a low car trip generation development
- The car parking standards, which constrain maximum parking numbers then enforce the vehicle trip generation.
- The cycle mode share is consistent with what is observed across Cambridge
- The development has to achieve the target mode shares to allow the full scheme to be constructed (and therefore viable)
- The development is being supported through the local planning process, so is a scheme that has political backing for both the develop men t and the approach to sustainable transport

No attachments

NPV of infrastructure impacts

Please provide the estimated NPV (in 2018/19 prices) of infrastructure impacts, and any other monetised impacts not captured above, from the preferred option relative to the do-nothing option

Type	Summary of impact	NPV of impact
Non-Residential Development	Additional land value generated by non-resi uses, such as commercial	[redacted]

Please provide a detailed explanation of the method and assumptions underlying these estimates, as outlined in the Economic Case guidance (incl annex A)

Commercial property impacts

In addition to the residential uses, the developments are also expected to provide a range of commercial uses, as set out in the table below. These uses will further increase the value of the land on which the development will occur, and this impact has been estimated below. Overall, around 88,000 sqm of commercial floor space is expected to come forward in the preferred option. This information has been taken from the site masterplan developed by Passivhaus, which includes a detailed assessment of requirements on the core site and a higher-level assessment of potential commercial provision on the wider sites.

In the reference case (no HIF funding) it is assumed that 55 acres (22.5 ha) of the site currently occupied by Anglian Water would be converted to industrial uses, which would also deliver an uplift in land values. However, that uplift was considered in the central housing analysis and deducted from the total residential land value delivered in the preferred option. Consequently, we have not included it here to avoid double counting. Beyond this, all other sites are expected to retain their existing use in the reference case (no HIF funding): a golf driving range and the CWRC. As no land uses have changed , there will be no increase in values associated with them.

[REDACTED TABLE]

Table 4.3.1: Commercial Uses (sqm)

To estimate the land value of these uses, we have estimated their expected land value and deducted the estimated build costs. These are considered in tum below .

In addition to the land values set out above, the development will provide 'car barns' as alternative to street or off-street parking. The primary purpose of the car barns is to mitigate the traffic impacts of the development. However, these barns will be let to residents of the development and generate additional commercial yield. As they will add to the overall value of the development, we believe that it is appropriate to include them in the assessment of commercial land values. Over the whole development, 2,180 car parking spaces will be provided in car barns. The values associated with these spaces has not been captured by the sales values of properties, which will be sold on the basis of zero on-site parking.

Table 4.3.2: Car Barn Spaces

	Car Barn Spaces
(1A) Cambridge Water Recycling Centre	303
(1B) Cambridge Golf Driving Range, etc.	919
(2A) CB4 (Chesterton Partnership)	317
(2B) Cowley Road Industrial Estate	466
(2C) Nuffield Road Industrial Estate	175
Total	2,180

Source: URBED Masterplans

Table 4.3.2: Car Barn Spaces

Commercial property values

Commercial property values for the uses outlined above have been taken from the development appraisal developed by U+I for the core site. We have assumed that values for the core site will also apply to the wider sites.

The commercial values are estimated as follows:

- Retail uses achieve [redacted] sqm (or per sqf - based on rents of [redacted] and a yield of [redacted]
- Commercial uses achieve [redacted] per sqm (or [redacted] per sqf - based on rents of [redacted] and a yield of [redacted]
- Hotels achieve [redacted] psm, based on an assumption that the hotel will provide 167 rooms with a rent of [redacted] per room and a yield of [redacted]
- Parking spaces in the car barns are assumed to achieve a sales value of [redacted] per space.
- We have not estimated the value of community uses as these are not typically traded and market level data is unavailable for them. However, they will be expected to deliver an additional community benefit to the area in addition to the figures presented here.

In line with residential values, al sales values are expected to grow at 2% per annum in real terms in line with the development appraisal.

Commercial development costs

The costs of commercial development have been sourced from the Cost Plan provided by Faithful+Gould. The build costs set out below are psm for all uses except the car barns, where costs are per space.

These costs are for basic build costs and the additional cost of development (external costs, developer profit, marketing costs, professional fees) have been assumed in line with the assumptions for residential housing, with the exception of external costs as this is captured in the costs of the residential development.

Commercial Displacement

It is estimated that displacement would be higher than for residential uses and we have assumed displacement of across all commercial uses to reflect this. This is consistent with a medium level of additionality, set out in the MHCLG Appraisal Guide.

Relocation of the CWRC

In addition to the non-residential accommodation on the site, the investment involves the relocation of the CWRC to a new location. All options under consideration are greenfield locations and are assumed to have an existing land value consistent with agricultural uses (of £21,000 per ha in the Greater Cambridge and Greater Peterborough area (MHCLG benchmarks for 2017). This value has been updated to 2018 prices in line with the other land values used in this assessment.

The new CWRC is expected to require [redacted] in line with the existing facility and the new land value associated with the site is expected to be consistent with the land value of the current site (of [redacted] million).

Summary of Commercial Impacts

The commercial impacts are estimated to have a combined net impact of [redacted] present value), based on the assumptions set out above.

[REDACTED TABLE]

Table 4.3.2: Commercial Uses (sqm)

Transport User Benefits

Potential scale of transport impacts:

The strategic modelling work undertaken by Cambridgeshire County Council for the 'Ely to Cambridge A10 Transport Study' produced a series of recommendations on the transport schemes needed to accommodate development across a range of sites, including CNFE, Cambridge Science Park, and a new town north of Waterbeach. The study makes a number of recommendations relating to the development of the CNFE site, notably the need to deliver measures that significantly reduce the car mode share for trips to and from the area, through a combination of demand-side mechanisms such as parking restraint, investment in measures to support non-car transport, and the concept of a highway 'trip budget' to manage vehicular traffic generation by the site.

The transport strategy that is being developed as part of the CNFE HIF bid submission aligns with the recommendations as set out within the Ely to Cambridge Transport Study, with reliance on private car trips being very low and in line with the trip budgets modelled. As such, the modelling and outcomes from the strategic Ely to Cambridge Transport Study have been accepted as a representative outcome for CNFE. Furthermore, an agreement is in place with officers from Cambridgeshire County Council and Highways England that additional site-specific modelling work is not a requirement as part of the development of CNFE as long as the trip budgets are maintained.

Whilst the CNFE HIF bid does not include any request for funding of transport interventions , as identified, the delivery of the CNFE scheme will be accompanied by a comprehensive package of transport mitigation measures. Some of these measures are already programmed/underway and include Highways England's A14 Cambridge to Huntingdon Improvement. Others will be implemented part of a wider strategic package of growth-related interventions across the wider corridor and these will be complemented by local access measures. The strategic transport measures (covering highways and public transport) proposed for delivery across the corridor are linked to a range of planned development growth and so isolating specific measures to individual development sites, such as CNFE, is challenging. However, it is clear that existing committed schemes, including the A14 improvement, together with those being developed by the local transport and highway authorities following the Ely to Cambridge Study, will deliver significant additional transport capacity.

While it has not been possible to model the transport user benefits associated with CNFE's contribution to the proposed transport mitigation package, as identified in our response to Q4.3.2, an analysis of the transport user benefits of this scheme showed a significant positive benefit of [redacted] to the transport network as a result of the [redacted] of mitigation measures proposed by this study. The CNFE site provides a contribution of £116m towards these mitigation measures, these contributions equate to [redacted] of the overall scheme cost and therefore the same proportion of benefit could reasonably be attributed to CNFE. This **equates to a transport user benefit of [redacted] associated with the CNFE site** which broadly matches the estimated transport external costs of the development and highlights that the scheme will ultimately have a minimal net impact on the local transport network.

We therefore consider the true impact of the proposed development on the transport network is only [redacted]. However, in accordance with guidance we have modelled the more substantial impact

through our economic case. It is unfortunate that it is not possible to capture these benefits in our assessment however the implications of doing so are considered in the sensitivity tests.

At the next stage of the business case appraisal of the environmental and social impacts will be undertaken. A qualitative review of the impacts has been undertaken for the HIF submission and this is considered proportional.

The transport mitigation package and the masterplan will lead to significant improvements to travel options. The site will have a competitive advantage because of its accessibility and be a catalyst for **improvements in air quality and noise**

The AAP transport modelling and strategic outline business case shows a mitigation package that can deliver the CNF and wider development. These schemes will evolve through the latter stages of the business case when accident appraisal will be undertaken. Given the CNF development is seeking to reduce severance and remove pedestrian/ cyclist/ vehicle conflict when crossing the Milton Road, it is considered that there will be a positive impact in terms of accidents on Milton Road.

The impact of walking and cycling improvements on physical activity has been considered qualitatively at this stage. The masterplan will reduce severance and increase opportunity for walking & cycling. This will have a positive impact on physical activity through improved health and greater productivity through reduced absenteeism.

The masterplan will include a mix of uses active at different times of the day fronting streets that will be designed with people in mind. Routes to and from public transport will be legible, lit and landscaped with quality waiting facilities. A qualitative assessment of the security and journey quality impacts is that these will be a positive.

The site currently creates severe severance caused by the road network, railway and the CWRC. The CNF development will improve connectivity, reduce severance and improve permeability to destinations including Cambridge North Station and the Science Park via a permeable site masterplan, a new link over the A14 and across Milton Road creating a safe, direct route for pedestrians and cyclists between Cambridge North Station and the Science Park. The severance and accessibility impacts will be largely positive.

Given the findings of this qualitative assessment, this reinforces the point made above that the overall transport assessment for CNF will potentially underplay the monetized benefits that are likely to be associated with the development.

No attachments

NPV of scheme costs

Please provide the estimated NPV (in 2018/19 prices) of infrastructure scheme costs (and revenues) as incurred by the following groups under the preferred option relative to the do-nothing option, ensuring no double counting of any costs included in prior answers - NPV of housing benefits, NPV of external impacts of additional housing, and NPV of infrastructure impacts

Type		Total Nominal Amount	NPV (18/19 constant prices
HIF funding	Cost	£227,000,000	[redacted]
	Revenue	£0	£0
Central Government	Cost	£0	£0
	Revenue	£0	£0
Local Authority	Cost	£0	£0
	Revenue	£0	£0
Other public sector	Cost	£0	£0
	Revenue	£0	£0
Private sector (not developer contribution)	Cost	[redacted]	[redacted]
	Revenue	£0	£0
Private sector (developer contribution)	Cost	[redacted]	[redacted]
	Revenue	£0	£0
Optimism Bias applied to *Total Public Sector Costs*	Cost	[redacted]	[redacted]
Optimism Bias applied to *Total Private Sector Costs*	Cost	£0	£0
Real Net Present Public Sector Cost		[redacted]	
Real Net Present Private Sector Cost		[redacted]	

Please provide a detailed explanation of the method and assumptions underlying all estimated costs, as outlined in the Economic Case guidance

A cost plan has been developed by Faithful+Gould to support the masterplan and this has formed the basis of the development cost assumptions presented in 4.4.1. From this cost plan we have extracted the full costs of infrastructure provision required to unlock the site and make it suitable for the proposed development. The figures exclude any costs specifically relating to the housing which have already been factored into the land value uplift assessment (e.g. basic build costs, external costs, and associated fees and developer profit).

The figures also exclude the S106 transport contributions as it has not been possible to capture the benefits associated with this financial contribution and including them here would therefore adversely impact on the assessment. As identified in section 4.3.2, the economic impacts of the transport contributions are expected to significantly exceed their financial contribution and effetely fully mitigate the transport external costs associated with the additional housing.

Therefore, the costs are based on the known infrastructure costs required to unlock the core site, which is the element of the proposal that is being directly delivered by Cambridge City Council. The remaining costs for the wider sites are unknown at this stage and would be provided by the private sector developers – however our initial assessment of the wider sites indicate that such development would be viable.

Minor additional adjustments have been made to the costs plan to reflect recent feedback that a secondary school is not likely to be provided on site (with contributions applying instead) and reflecting the most recent assessment of site mitigation and preparation costs.

The total costs of the scheme (expressed as current day prices) provided in Table 4.4.1.

[REDACTED TABLE]

Table 4.4.1 : Total Scheme Costs (Expressed Current Day Prices)

The total infrastructure costs incorporate a contingency of [redacted] which is considered sufficient for a scheme of this nature.

The detailed assumptions underpinning this assessment are set out in the supporting cost plan.

CWRC infrastructure costs

Anglian Water have also provided detailed costings for the CWRC relocation. The total costs in current day prices are £227 million, however these represent the worst-case scenario based on the highest cost potential site. If a site located closer to the current facility can be confirmed, the total cost of this investment may fall to £[redacted]

The costs include a [redacted]% contingency.

Optimism bias

The costs presented above for the WRC include Optimism Bias at 26%, the method of which is set out below.

Following guidance from Steer and Homes England, no optimism bias (OB) has been applied to the housing development related infrastructure (ie the element not funded by HIF). There are no private sector contributions to the relation costs associated with CWRC so it has not been necessary to apply optimism bias here.

No attachments

Non-monetised impacts

Are there any impacts it is not feasible or proportionate to monetise?

Yes

Details, including an indicative scale of impact and why these have not been monetised

The land-value based approach to monetising the economic value of the scheme captures the effects of the Cambridge Northern Fringe East scheme in terms of housing delivery. higher quality environment and area attractiveness through the uplift in real estate values in the area.

However, the economic impact assessment does not fully capture the bong-term impacts of the scheme on the areas surrounding the development and across the rest of Cambridge. The following categories of impacts have not been monetised but are central to the case for Cambridge Northern Fringe East scheme as they contribute to some of Cambridges priority objectives with regards to economic growth and social inclusion

- transport user benefits
- employment impacts
- wider housing development agglomeration economies
- labour market benefits
- social and equity impacts

These effects are presented below , along with the reasons why they have not been monetised.

1. Transport User Benefits

As identified in 04.3.2, it has not been possible to model the transport user benefits associated with CNFEs contribution to the proposed transport mitigation package. However, an analysis of the transport user benefits of this scheme indicate that the CNFE contribution to these mitigation measures would equates to a transport user benefit of £307m. These figures have not been incorporated into the monetised assessment, how ever it is important to recognise their potential scale of benefits associated with the transport mitigation measures funded by CNFE

2. Employment impacts

Research by Cambridge City Council indicates that the infrastructure investment has the potential to unlock significant employment in the wider area.

Without HIF funding employment onsite and in the neighbouring Science Parks is expected to increase by 20,000 between now and 2041. Employment in the wider area is therefore expected to increase to 24,000 with the HF investment.

Turning to the level of employment that can be accommodated on the core and wider sites specifically, the development schedule set out in Q4.3 provide s a breakdown of the non-residential uses expected to come forward. These are repeated in Table 4.5.1. Overall, more around 63.000 sqm of non-residential floorspace is expected to come forward, covering retail, office, hotel, and community uses.

Table 4.5.1: Commercial Uses (sqm)

By applying a standard Gros s internal Area to Net Internal Area (GIA-NIA) discount (of 15% for all uses and applying standard employment densities to these uses (Source: HCA Employment Densities Guide, 3rd Edition), it is possible to estimate the level of employment that would be accommodated at these sites.

(NB. As employment densities are unavailable for community facilities we have assumed a low employment density of 70 sqm per worker). Overall the uses are expected to support employment for 2,400 people -- primarily in office accommodation, but also in retail and commercial uses

Table 4.5.2: Employment Accommodated in the Proposed Development

In line with the MHCLG Appraisal Guidance we have not sought to monetise these impacts or incorporate in the central assessment of the scheme benefit cost ratio.

However, despite not being monetised, the employment accommodated in these uses will help create employment opportunities for the new local residents, reducing the requirement for commuting and support employment growth across Cambridge.

Wider housing development impacts

There will also be a wider range of local amenity benefits associated with the proposed developments, including:

- The provision of blue and green infrastructure throughout the development
- Enhanced environmental performance and sustainability -- through the provision of Passivhaus and photovoltaics onsite.
- The improved amenity benefit of relocating the WRC awa y from developed areas and enhancing and maximising the development potential of currently underutilized industrial space.

These impacts have not been monetised as there is no agreed approach for doing so in a proportionate way, as specified in the MHCLG Appraisal Guide, however the amenity and environmental benefits of this assessment could be significant

4. Enhancing Cambridges agglomeration economies and continued economic competitiveness

Agglomeration economies are the benefits that come when firms and people locate near one another in cities and industrial dusters. They include:

- easier access to labour, resources, suppliers and customers
- a large and diverse provision of inputs and greater certainty of those inputs
- knowledge spill overs providing a source of information and innovation. Al of these cumulatively have a positive effect on productivity.

Agglomeration economies are at the core of the Cambridge's knowledge-based economy, with a strong pull around the centre of Cambridge, along side business/science parks located on the periphery of the town centre (eg Cambridge Science Park). Combined this has transformed Cambridge from a market town with a world-class university to one of the leading technology hotspots in the world supporting spin-outs from the university and attracting investment and talent into the area.

Typically, these agglomeration economies are driven by improvements to transport (or more housing available near to transport hubs) and an avail able supply of housing. To intensify Cambridge and further build its agglomeration impact, there is a need to provide housing closer to the city centre and/or connect this with existing transport infrastructure. This will help increase the effective density of a city / cluster by broadening its catchment area as well as the population within this area, therefore helping to boost the potential workforce and skills available. The location of the Cambridge Northern Fringe East scheme close to Cambridge North station and areas of employment (eg Cambridge Science Park and Business Park) will help boost the agglomeration effect within Cambridge.

However, the full effects of agglomeration economies result from complex, correlated and long-term interactions which are difficult to quantify, let alone monetise. Recent guidance has been produced by the Department for Transport which recommends further research in this area and highlights the complexities involved in developing the econometric models required to estimate agglomeration benefits. This level of effort is not appropriate or available for this bid.

5. Labour market and productivity impacts

As mentioned above, there is an accepted link between agglomeration economies and higher productivity. However, this supposes a fluid, unconstrained labour market. This is increasingly not the case in Cambridge, largely as a result of housing issues, with some of the most unaffordable homes in the city relative to local wages. Without continued and ambitious investment in housing, the constraints will worsen and threaten the growth of Cambridge's economy.

Over the last eight years, Cambridge has had the greatest increase in house prices of all cities nationally, with a 76% increase. This is creating growing challenges for firms in attracting the workers they need, as they cannot afford to live locally.

Despite Cambridge having the second highest level of housing growth of all UK cities, it is only behind London and Oxford regarding affordability (Source: Centre for Cities UK Outlook) Research by the Greater Cambridge Partnership (GCP) found that almost three quarters of local people were unhappy with their current housing situation - with most people recognising that a key problem for the area was a lack of affordable housing. Of concern for Cambridge's economic future is the impact this is having on Cambridge's ability to attract workers at all levels.

A survey undertaken by the GCP found that one of their biggest problems was recruiting and staff turnover, especially due to the high cost of housing. Some also talked about a wages gap' for different professions , with high-earning jobs pushing up the cost of renting and buying houses, making it harder to find staff to fill service or administrative positions. Without a strong and stable workforce, Cambridge will struggle to attract workers on a long-term basis.

Cambridge Northern Fringe East can contribute to tackling these challenges and ensure that Cambridge continues to attract and retain the skills it needs across al sectors of its economy. The site's dose proximity to Cambridge Science Park and Cambridge Business Park means it will provide an enhanced housing supply close to some of Cambridge's core locations for businesses.

In addition, the housing capacity unlocked by the scheme will play a central role in ensuring that the city can continue to attract and accommodate the workforce it needs for its high value, knowledge-based services as well as for public sector services and for sectors which rely on lower paid workers but are equally vital to Cambridge's economy (eg tourism, hospitality, catering. light manufacturing etc). Rough sleeping in Cambridge has nearly doubled over the last two years (Source: MHCLG) and those in lower-paid jobs currently struggle to find affordable housing for them.

In the absence of interventions to address housing shortages, labour market constraints will lead to wage inflation or displacement, as workers either seek higher wages or choose to move to places with more affordable housing. The implication for employers is to either increase wages or operate within a reduced labour market, which will constrain their growth potential, leading to skill gaps, dis-investment and knock-on effects on productivity and long-term prospects for Cambridge.

However, while the growing constraints on Cambridge's labour market are undeniable, the impacts from the Cambridge Northern Fringe East scheme are difficult to isolate and monetise as a range of other investments will influence the performance of Cambridge's labour market (including other housing investments but also policies and programme s relating to skills, education or employment law). In addition, labour market impacts relate to a large extent to the cost of doing nothing ie what would happen if housing shortages and transport capacity issues continue to worsen , which is too complex to quantify.

6. Living conditions and equality benefits

By increasing the supply of housing (both market and affordable) in Cambridge, the Cambridge Norther Fringe East scheme can contribute to improving access to housing across a range of groups in Cambridge and help address some of the impacts of housing shortages on living conditions and inequality.

At the moment housing affordability issues most affect young people's prospects for independent life, the eldest and the most deprived . lousing is becoming increasingly unaffordable for young people, and this has had an impact on graduate retention within Cambridge, with only 15% of the city's students staying in the city after graduating (compared to 24% nationally; Source: Centre for Cities). The average first time buyer would need a (combined) salary of £79.000 to be able to afford a flat in Cambridge - the third highest level in the country behind London and Oxford. The ratio of the aver age price of homes to average earnings is at a value of 13.5 in Cambridge (compared to 7.9 nationally). This puts Cambridge as the 16th most unaffordable local authority outside of London (out of 315 local authorities). With high (and generally unaffordable) house prices, private rents have

also risen very quickly in real terms and rental affordability has worse ned as earnings have failed to keep up.

Rising housing costs lead to failing disposable income and reduced standards of living, which exposes the most vulnerable groups to the risk of homelessness. in recent years, the level of homelessness in Cambridge has nearly doubled (Source MHCLG) This in turn places additional costs on local authorities, as restrictions on the housing and labour market gradually push people out of the housing market as a result of limited income and rising prices.

By providing a supply injection of 8,625 new homes , the Cambridge Northern Fringe East scheme helps to mitigate the pressures of a restricted housing market, and to prevent the displacement of low- and middle-income earners out of Cambridge. It also contributes to addressing social mobility and inequality issues in Cambridge by preventing the growing gap between low and high earner s, and between generations.

While these are important benefits of the Cam bridge Northern Fringe East scheme, they are challenging to monetise in any meaningful way. These issues are complex, requiring a large -scale provision of new housing across Cambridge as a whole in order to affect house prices and affordability. While the Cambridge Northern Fringe East scheme can contribute to addressing these issues, its individual impact cannot be isolated and quantified.

Please refer to appendix M for the Economic Impact Assessment

Sensitivity Analysis

Please describe sensitivity analysis conducted (if not covered above)

Sensitivity test have been undertaken to consider the most significant risks and uncertainties surrounding the economic assessment of the proposed housing delivery.

We also consider the potential effects of capturing the transport user benefits that could be attributed to the CNFE development by apportioning the economic benefits of the A10 mitigations package based on the expected financial contribution of the development. As identified, apportioning the benefits to CNFE on this basis would generate a transport user benefit of £307 million and, while this value cannot be modelled precisely, it is important that the potential scale of benefit is considered to give a rounded assessment of the development proposals.

In total we have considered the following six tests. The supporting method note also include tables which summarise the main results.

Sensitivity Test 1: Inclusion of apportioned A10 transport user benefits

The transport user benefits of the A10 mitigations package, apportioned to the CNFE development on the basis of their proportionate contribution, are incorporated into the NPV of infrastructure

impacts. The apportioned benefit is estimated to be [redacted] present value, which increases the overall economic contribution of CNFE to [redacted]

This has the following impacts:

- *The central (BCR) (housing impacts / HIF) is unchanged.*
- *The return on public sector investment (total impacts / public investment) increases from 1.6 to 2.9*
- *The return on total investment (total impacts / total costs) increases to 2.0.*

Therefore, by including the transport user benefits estimated to be attributable to CNFE, the scheme is expected to deliver good value for money under all metrics.

Sensitivity Test 2: Displacement

[redacted]#

This has the following impacts

- *The central BCR (housing impacts / HIF) reduces to 2.2.*
- *The return on public sector investment (total impacts / public investment) reduces to 1.3*
- *The return on total investment (total impacts / total costs) reduces to 0.9. However, if the apportioned transport user costs are considered this rises to 1.8 which can be considered acceptable value for money. Transport user benefits as low as* [redacted] *would be sufficient for this BCR to remain above 1.*

Sensitivity Test 2 Results	**Central Assessment**	**Sensitivity Test**	
		Central Case	**With TUB**
Housing Impacts / HIF	2.5	2.2	2.2
Total Impacts / Public Sector Costs	1.6	1.3	2.5
Total Impacts / Total Costs	1.2	0.9	1.8

Based on the assessment above and the likely value of the transport user benefits, we consider that the CNFE proposals will deliver a return on total investment in excess of 1:1 and a return on public investment in excess of 2:1.

Sensitivity Test 3: Real Terms Land Value Growth

We have assumed that land values increase at an average rate of 2% per annum, which is significantly below historic trends for Cambridge. We have therefore undertaken 2 sensitivity tests in relation to this:

ST3a: Lower property price growth (of 1%)

This has the following impacts:

- *The central BCR (housing impacts / HIF) reduces to 1.8, which represents an acceptable return on investment.*
- *The return on public sector investment (total impacts / public investment) reduces to 0.8.*
- *The return on total investment (total impacts / total costs) reduces to 0.6.*

However, while two of the metrics fall below 1:1, all metrics will deliver a minimum of acceptable vfm if the apportioned transport user benefits are included. The total return on public investment is 'good' in this scenario.

Under this test, all metrics will achieve an acceptable return on investment if the transport user benefits exceed £150 million – which is likely given the results from the A10 study.

Sensitivity Test 3a Results	Central Assessment	Sensitivity Test	
		Central Case	With TUB
Housing Impacts / HIF	2.5	1.8	1.8
Total Impacts / Public Sector Costs	1.6	0.8	2.1
Total Impacts / Total Costs	1.2	0.6	1.4

Based on the assessment above and the likely value of the transport user benefits, we consider that the CNFE proposals will deliver a return on total investment in excess of 1:1 in a scenario with lower house price growth.

ST3b: property price growth of 5% per annum – closer to the long-term average for Cambridge.

This has the following impacts:

- *The central BCR (housing impacts / HIF) increases to 5.4.*
- *The return on public sector investment (total impacts / public investment) increases to 4.8*
- *The return on total investment (total impacts / total costs) increases to 3.3.*

Sensitivity Test 3b Results	Central Assessment	Sensitivity Test	
		Central Case	With TUB
Housing Impacts / HIF	2.5	5.4	5.4
Total Impacts / Public Sector Costs	1.6	4.8	6.0
Total Impacts / Total Costs	1.2	3.3	4.2

Under this test all metrics deliver high vfm and very high is achieved for the HIF metric. If transport user benefits are included, the achieved value for money would be very high for all metrics.

Sensitivity Test 4: Wider Development Sites

Cambridgeshire City Council and its development partners have less control over the pace of delivery on the wider sites. We therefore model a where the building out of the wider sites if 10% lower than proposed over the assessment period.

This has the following impacts:

- *The central BCR (housing impacts / HIF) reduces to 2.4, which still represents high level of value for money.*
- *The return on public sector investment (total impacts / public investment) reduces to 1.5.*
- *The return on total investment (total impacts / total costs) falls to 1.1.*

Sensitivity Test 4 Results	Central Assessment	Sensitivity Test	
		Central Case	With TUB
Housing Impacts / HIF	2.5	2.4	2.4
Total Impacts / Public Sector Costs	1.6	1.5	2.8
Total Impacts / Total Costs	1.2	1.1	1.9

Sensitivity Test 5: Stalled Development

Development across the whole site is 10% lower than proposed over the assessment period.

This has the following impacts:

- *The central BCR (housing impacts / HIF) reduces to 2.4, which remains in the good vfm category.*
- *The return on public sector investment (total impacts / public investment) reduces to 1.5.*
- *The return on total investment (total impacts / total costs) reduces to 1.1.*

Under this test, all cost metrics continue to deliver an acceptable value for money.

Sensitivity Test 5 Results	Central Assessment	Sensitivity Test	
		Central Case	With TUB
Housing Impacts / HIF	2.5	2.4	2.4
Total Impacts / Public Sector Costs	1.6	1.5	2.8
Total Impacts / Total Costs	1.2	1.1	1.9

Sensitivity Test 6: Cost Increases

In this test we consider the impact of a 25% increase in costs – both total public-sector costs and the level of HIF requested.

This has the following impacts:

- *The central BCR (housing impacts / HIF) reduces to 2.0,m on the threshold for the good VFM category.*
- *The return on public sector investment (total impacts / public investment) reduces to 1.3.*
- *The return on total investment (total impacts / total costs) reduces to 0.9.*

However, while the total cost metric falls below 1:1, all metrics will deliver a minimum of acceptable vfm if the apportioned transport user benefits are included.

Under this test, all metrics will achieve an acceptable return on investment if the transport user benefits exceed £34 million – which is considered to be likely given the results from the A10 study

.

Sensitivity Test 6 Results	Central Assessment	Sensitivity Test	
		Central Case	With TUB
Housing Impacts / HIF	2.5	2.0	2.0
Total Impacts / Public Sector Costs	1.6	1.3	2.3
Total Impacts / Total Costs	1.2	0.9	1.6

Based on the assessment above and the likely value of the transport user benefits, we consider that the CNFE proposals will deliver a return on total investment in excess of 1:1 in a scenario where all costs of the development were 25% higher than the level expected.

Sensitivity Test 7: Housing Price Cost Reduction

As indicated in our method section, the proposals for CNFE are relative high cost due to the high quality environmental standards associated with the design – such as the inclusion of photovoltaics and Passivhaus standards. To some extent this will be reflected in the sales prices, but there are a range of wider benefits that are unlikely to be fully costed in the achievable sales price.

This scenario considers the impact on land values of a lower cost development (assuming that similar sales prices can be achieved) of 10% of basic build costs (the uplift applied for Passivhaus).

This has the following impacts:

- *The central BCR (housing impacts / HIF) increases from 2.5 to 3.0.*
- *The return on public sector investment (total impacts / public investment) increases to 2.1 – into the high vfm category.*
- *The return on total investment (total impacts / total costs) increases to 1.5.*

Sensitivity Test 7 Results	**Central Assessment**	**Sensitivity Test**	
		Central Case	**With TUB**
Housing Impacts / HIF	2.5	3.0	3.0
Total Impacts / Public Sector Costs	1.6	2.1	3.4
Total Impacts / Total Costs	1.2	1.5	2.3

All schemes will deliver good vfm if the apportioned transport user benefits are considered.

Sensitivity Test 8: Optimism bias

Our approach has involved us adjusting the potential level of optimism bias from its upper bound. This test considers the impact of OB at its upper bound range of 66%.

This has the following impacts:

- *The central BCR (housing impacts / HIF) reduces to 1.9, near the threshold for the good vfm category.*
- *The return on public sector investment (total impacts / public investment) reduces to 1.3.*
- *The return on total investment (total impacts / total costs) reduces to 0.9.*

However, while the total cost metric falls below 1:1, all metrics will deliver a minimum of acceptable vfm if the apportioned transport user benefits are included.

Under this test, all metrics will achieve an acceptable return on investment if the transport user benefits exceed £25 million – which is considered to be highly likely given the results from the A10 study.

Sensitivity Test 8 Results	Central Assessment	Sensitivity Test	
		Central Case	With TUB
Housing Impacts / HIF	2.5	1.9	1.9
Total Impacts / Public Sector Costs	1.6	1.3	2.2
Total Impacts / Total Costs	1.2	0.9	1.7

Based on the assessment above and the likely value of the transport user benefits, we consider that the CNFE proposals will deliver a return on total investment in excess of 1:1 in a scenario where all a full level of optimism bias is applied.

Sensitivity Test Results

For all of the sensitivity tests, the core metric of housing impacts divided by HIF costs delivers high or acceptable value for money.

In some of the tests, the metric for the wider impacts falls below 1, however in each case it is considered that the likely scale of transport user benefits which have not been monetised in the central assessment would be sufficient to ensure that as a minimum the CNFE scheme will deliver an acceptable return on investment.

If it is possible to capture the full apportioned transport user benefits relating to the A10 mitigations package, then the proposals achieve high or very high value for money under a range of scenarios.

Optimism bias

Please describe how optimism bias has been applied in line with the Green Book guidance (and where relevant DfT WebTAG guidance (if not covered above))

The relocation of the Water Recycling Centre would be classified as a non-standard civil engineering project and the Green Book that Optimism Bias of between [redacted] and [redacted] should be applied to the scheme costs. We have reviewed the costs provided by Anglian Water and adjusted the BCR down to

26% reflecting the nature of the proposals the level of their development. Tables 4.7.1 and 4.7.2 provide an overview of the Optimism Bias assessment and further explanation is provided below.

The adjustment has been undertaken in line with the guidance set out in the Green Book Supplementary Guidance.

[REDACTED TABLE]

Table 4.7.1: Optimism Bias Summary (All Values in £m)

[REDACTED TABLE]

Table 4.7.2: Optimism Bias Adjustment

Procurement:

Relocation of the WRC to be internally managed and delivered. No procurement required for the overall project. However, procurement of specific technical services will be required, so risk is not fully mitigated.

Design Complexity:

The new facility costs are based on a conceptual design building on past experience of delivering similar schemes (over the past 14 years). Limited to risks due to scheme complexity identified.

Degree of Innovation:

The facility is based on demonstrated solutions and does not include significant innovation in design.

Environmental Impact:

Scheme costs are based on an identified location and site-specific characteristics have been taken into consideration, however the nature of the investment requires significant attention to environmental considerations and consultation with local authorities and communities. It is also important to note that this project has the political backing of Cambridge City Council, South Cambridgeshire Council, Cambridgeshire County Council and the Cambridgeshire and Peterborough Combined Authority so at a local authority level (local and sub-regional) there is political support for these proposals.

Inadequacy of the Business Case

The costs have been developed in-house by Anglian Water and the proposals will meet their requirements over the next 40 years. The requirements are agreed with OfWat and are confirmed as satisfying the requirements of all relevant stakeholders. The project costs are based on the worst-case scenario (with costs ranging from [redacted] to £228 million) and the financial risks associated with the investment are fully costed in the proposals. While it could be argued that his risk is fully mitigated, we have allowed for some OB against this category to reflect that the standard of a Full Business Case will be achieved once funding is confirmed and relevant contracts are agreed in principle.

Funding Availability

Project will be fully funded by HIF, no other funding is sought. Project risks are fully costed in the proposals.

Project Management Team

Project will be delivered in-house by Anglian Water, which has over 14 years' experience of delivering similar schemes. We have not categorised the risk as fully mitigated as the specific project team will be confirmed once funding is in place.

Poor Project Intelligence

Project costs are based on specific site options identified by Anglian Water. Costs also reflect the worst-case option. However, more detailed site investigation will be required as part of a site shortlisting and selection process.

Site Characteristics

As above, detailed site level investigations will be confirmed as part of a site shortlisting and selection process.

Economic

Demand for water treatment will increase due to commercial, population and housing growth in the area. The project forms part of Anglian Water's existing five-year Business Plan and proposals are confirmed with OfWat. No significant risks are identified against this criteria.

Legislation/Regulations

Proposals are made in the context of a regulated market in agreement with OfWat. Business Plans are agreed with the regulator and no short-medium term changes to legislation are envisaged within this context. Risk allowance is therefore considered to be small.

Technology

Project technologies are tried and tested and satisfy the requirements of Anglian Water. All approaches are developed in agreement with OfWat. There is limited opportunity for technological disruption.

Other (specify)

None specified, therefore OB factor is retained.

Risk Analysis

Please describe how risk has been assessed and appraised in line with HMT Green Book guidance (if not covered above). The risk analysis should focus both on the risks to the delivery of the infrastructure and the delivery of housing

CWRC

The costs of relocating the Water Recycling Centre have been subject to detailed cost review and, in addition to the optimism bias discussed in the previous section have fully considered the key financial risks to the scheme.

Anglian Water's approach to considering risk been to apply an Impact and Probability score (of 1 to 5), multiply these scores to get a combined risk score out of 25 and to also assign a risk category (based on the Red, Amber, Green approach). Finally, a risk allowance is applied to each risk line. In total risks amounting to [redacted] have been identified (at current, non-discounted prices), which amounts to [redacted] of the total project costs. This figure has been included in the baseline costs and

is subject to the uplift for optimism bias outlined above. The Risk Register is appended to the financial case and is included in Appendix AC, which sets out the main risk categories and proposed mitigations, and below we have highlighted the main risk categories.

This approach is compliant with the Green Book requirements.

Red Risks (high likelihood and high impact):

- **Commissioning – Flow and Load**

  Mitigation: Detailed commissioning plan to be determined during optioneering and detail design

  Risk Value: [redacted]

- **Poor Ground Conditions at Cambridge WRC**

  Ground investigation to take place local to Sewer intercept

  Risk Value: [redacted]

- **Route Modifications required to accommodate AW Tankers off the A10**

  Work with RES to anticipate problems during optioneering

  Risk Value: [redacted]

- **Outcome from Enabling Risk Assessment**

  Mitigation: Complete GEOPLM and desktop Enabling Assessment

  Risk Value: [redacted]

- **Construction Challenges with new shaft and tunnel route**

  Mitigation: Undertake ground investigations

  Risk Value: [redacted]

- **Wider Power Network Upgrade Required**

  Mitigation: Establish Power Requirement and liaise with DNO

  Risk Value: [redacted]

Green Risks (low likelihood and/or low impact)

- **Office Welfare and Stores Charges. [redacted] per week ([redacted]) allowed for currently.**

  Mitigation: Optimise programme and procure for best value site requirements.

  Risk Value: [redacted]

- **AW @One OH's – assumed a 1% increase**

  Mitigation: Determine contract strategy and delivery route

  Risk Value: [redacted]

- **Material off site – assumed all spoil remaining on site**

  Mitigation: SWMP

  Risk Value: [redacted]

- **Additional Storm Storage Required**

  Mitigation: Confirm storm discharge requirements

  Risk Value: [redacted]

Total Risk Value: [redacted]

Housing Development

The housing development incorporates contingency at xx%, which is considered to be a reasonable level given the stage of development of the proposals. The housing scheme for the core site is supported by a detailed risk register which is included in Appendix AC.

The risk register assesses risks against a RAG rating system and considered likelihood, impact and proximity. These risks have not been monetised, however the level of contingency is deemed sufficient to manage the amber and red risks specified in the risk register.

The sensitivity test have considered an increase in development costs of 25% which is significantly in excess of the required level of mitigation and demonstrates that the scheme will continue to deliver value for money with only a modest contribution from transport user benefits. Given this, we consider this to be a reasonable approach for considering the housing risks.

Supporting material and additional economic considerations

Please provide any other information not covered above to support the economic case

Please attach all economic modelling done as part of the economic case (other than that provided in specific questions)

Filename	Description

Schemes with Transport Impacts

For any transport modelling conducted, please refer to Annex B of the guidance and attach




Commercial Case

Market analysis

Please provide details of how the proposed scheme fits with the local housing market and with local demand. Please provide supporting evidence of relevant value assumptions in the area

Trends and patterns in the local housing market

Greater Cambridge has huge housing demand. With a unique strong global brand, it offers an exceptionally high quality of life and was recently voted the third best city to live and work in the UK (Glassdoor 2018).

Cambridge' s universities are a vital part of its success, home to 29,000 students and expanding There is a higher proportion of students in Cambridge (at 27%) and in CB4 (at 12%) than in the East of England and nationally.

Cambridge's economy has emerged as a key driver of growth. The city is home to over 4,300 knowledge and research- based companies and this is expected to grow significantly over the coming years. Oxford Economics forecasts that in the next 5 years employment could reach 76.600 in South Cambridgeshire and Cambridge, a 6% increase on the current level which will drive continuing demand for office space.

These factor s place pressure on Cambridge to expand, and is reflect ed in the size of the city's population, which is expected to grow from 123,900 in 2011 (Census 2011) to 150,000 by 2031, an increase of 21%.

Although Cambridge has seen substantial new housing in recent years, an average of 602 homes pa have been delivered since 2001 (Cambridge Annual Monitoring Report 2017) housing has become increasingly unaffordable. Current house prices are nearly twice the national average (approximately £425.000 in Q2 2018) and with FTE wages averaging £31,668 pa, homes in Cambridge are currently 13.5 times more expensive than earnings, one of the highest affordability ratios in the country.

Cambridge has limited opportunities to densify or expand to address the pressure on its housing market. Its historic city centre is dominated by University of Cambridge and Colleges' buildings, and so offers little scope for development Much of the city's recent growth has been on the edges , particularly to the south (Great Kneighton) and north west (Eddington). The Cambridge greenbelt surrounds the city and limits further growth out from the city's edges, meaning that much new demand will be met further afield, including at Northstowe and Waterbeach.

As the last substantial brownfield site in Cambridge, CNFE is a unique opportunity to deliver new housing at a scale that will have a meaningful impact on housing availability in the city, contributing 8.625 homes to future growth and helping ensure economic prosperity is not hindered by employees in all sectors being price d out of the city's housing market

Moreover, CNFE is located in a uniquely accessible location, within easy reach of the city centre and dose to major employment centres. Unlocking land at CNFE will provide a sustainable mix of employment, housing, amenities and transport, all in close proximity to one another.

Local Demographics

Cambridges projected growth is underpinned by a series of key drivers which will change and shape the demographic profile of the city.

Ageing population

There are just under 8 million households aged 65+ in the UK. International benchmarks suggest we should be providing specialist housing for 15% (1.2 million) of these households. At present, only 726,000 are available. More than half that stock (52%) was built or last refurbished more than 30 years ago. in line with the UK, Cambridge's population is growing older. As a result, there is an increasing sector of down sizers who are booking to release equity held in housing. The requirement here is for reduced spatial requirements while staying in the local area and continuing to be able to access and enjoy the amenities offered by the city.

Students

The number of students in Cambridge will grow 0.5% per year for the next ten years, and postgraduate numbers by 2% per year. CNFE will provide an opportunity to house students in an affordable, convenient location , close to places of study. It will provide for students across a range of formats focus ed on smaller, apartment-type accommodation, including halls of residents, and build-to-rent apartments.

Young professionals

With two universities, a high quality of life and strong science and tech sectors, it is not surprising that Cambridge retains 17% of its graduates. This demographic will require both proximity and convenient access to employment centres, city centre, and higher-density living in smaller homes with shared amenities.

Knowledge-based workers

According to Cambridge Ahead, the number of businesses based in the city has increased by 31% since 2011. Employees in the professional, scientific and tech sector make up 16% of total employment market yet contribute more than 20% of the city's total GVA Science and tech jobs are predicted to grow twice as fast as other occupations. Knowledge-based workers require easy access to their place of work, without reliance on car travel.

Affordable - Social delivery

The demand for affordable housing is high in the UK and is no different in Cambridge. The City has seen rapid house price growth of 55% over the last five years. Current sales of new build stock in Cambridge are concentrated at the top end of the market, and the majority above the Help to Buy cap of £600,000.

PRS Change in Tenure

The rented market is developing fast, with a switch in focus to stock built specifically for those who want to rent. The UKs private rented sector is now worth £1.5 trillion, an increase of 111% on 10 years ago, with the sector housing 20.3% of households, up from 10.1% in 2001. Since Build to Rent has emerged , the total pipeline has grown 478% sine 2013. In Cambridge, the number of PRS households has grown by 33% in the ten year s between censuses . The outlook is positive for rental growth in strong employment markets such as Cambridge , and PRS is a key tenure.

CNFE Housing Scheme

The CNFE masterplan will mee t this demand in the following ways.

- A strong focus ([redacted]% of the CNFE core site) on apartments at a range of densities, supported by shared green spaces and excellent shared facilities.
- A range of apartment sizes and formats. from micro-living to larger family apartments, suited to a mix of students, young professionals and families.
- A smaller proportion ([redacted] of the CNFE core site) of town houses, recognising that families seeking suburban housing with large gardens will prefer to live further afield.
- Through a major BTR component ([redacted] of the CNFE core site). a strong focus on professionally-managed rented homes.

Market absorption and sales rates

The Local Plan 2018 envisages housing delivery at an average of 700 dwellings per annum over the period 2011 to 2031, an increase on an average delivery rate of 457 dwellings per annum achieved for the period 2001 to 2011.

While this delivery is currently focused at large-scale housing developments, including Trumpington Meadows, Clay Farm, Glebe Farm, the National Institute of Agricultural Botany (NIAB), and Eddington, these will not meet all future housing needs to 2031 or beyond.

CNFE is expected to deliver a significant proportion of the required new housing completions in Cambridge over the course of the project.

- Limited land supply across the city. From 2026, CNFE will become the main focus of new housing delivery in Cambridge. This is particularly important given that annual delivery from 2027 is due to drop to 352 units, with 224 units the following year. Without CNFE. this will leave Cambridge with a deeper housing crisis.
- A strong focus on BTR and 40% affordable housing
- Development across several neighborhoods in parallel, allowing multiple sales outlets

Average prices

Our analysis is based on the following prices and comparables (explored in detail in 06.3.3).

Private sale residential: £570 t0 620 psf (2018 values). Private rented sector: £500psf capital value (based on £20 psf at a 3.5% to 4% yield). Affordable housing (shared ownership) at 65% of OMV, affordable housing (for rent) at 35% of OMV.

Please refer to appendix N for further Market Analysis information.

[redacted] [redacted]

[redacted] [redacted]

[redacted] [redacted]

[redacted] [redacted]

Delivery strategy

Please provide details of who will be delivering the infrastructure

Note on CNFE infrastructure

The infrastructure for CNFE is split into two key elements:

- The relocation of the CWRRC.
- Delivery of the new infrastructure for the core site masterplan.

The relocation of the CWRC

Anglian Water is the appointed waste water undertaker for the region which includes the Cambridge area It will enter into a tripartite contract with Cambridge City Council and the @one Alliance to deliver the relocation of the Cambridge WRC (CWRRC)

The @one Alliance is Anglian Water's established framework of contractors. It is a collaborative organisation of the consultants and contractors: [redacted]

The organisation works together to deliver more than half of Anglian Water's capital investment programme. The @one Alliance was established in 2005 and, between 2015 and 2020 will have designed and built around 800 capital investment schemes worth approximately £1.2bn.

Each of the partners within the @one Alliance brings different expertise, as follows.

- [redacted] specialise in the construction of infrastructure (underground assets).

Please provide details of who will be delivering the infrastructure

Note on CNFE infrastructure

The infrastructure for CNFE is split into two key elements:

- The relocation of the CWRC

- Delivery of the new infrastructure for the core site masterplan

The relocation of the CWRC

Anglian Water is the appointed waste water undertaker for the region which includes the Cambridge area. It will enter into a tripartite contract with Cambridge City Council and the @one Alliance to deliver the relocation of the Cambridge WRC (CWRC).

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The organisation works together to deliver more than half of the Anglian Water's capital investment programme. The @one Alliance was established in 2005 and, between 2015 and 2020 will have designed and built around 800 capital investment schemes worth approximately £1.2bn.

Each of the partners within the @one Alliance brings different expertise, as follows.

- [redacted] specialise in the construction of infrastructure (underground assets)
- [redacted] lead on design, construction and maintenance services
- [redacted] lead on project development
- [redacted] provide feasibility, design, construction and commissioning services
- [redacted] provide treatment design
- [redacted] lead and advise on sustainability and efficiency initiatives in infrastructure

The @one Alliance works closely with Anglian Water operational teams and other key stakeholders. They design and construct water and water recycling (waste water) treatment centres that serve more than six million people int eh east of England (and Hartlepool Water) and maintain and improve the water mains and the sewerage network in the region.

The @one Alliance has carried out the initial design and costing work for the relocation of CWRC. This has looked at the following main elements.

- A new tunnel, intercepting and transferring existing waste water flows
- A new water recycling centre
- A new sludge treatment centre
- A treated waste water effluence pope to the discharge point in the River Cam

The initial design work has shown these elements will occupy an approximate land area of 39 hectares (this does not include any initial land required for landscaping or other mitigation requirements).

The @one Alliance has a proven track record of delivering capital projects efficiently in close collaboration with Anglian Water and the rest of its supply chain.

Examples of scheme delivered by the @one Alliance are set out below.

Tunnelling

Cambridge, Madingley Road – 1200mm tunnelling

Lowestoft DG5 Flooding – 1500mm adjacent to a railway and sinking shafts in Network Rail's Yards

GT Yarmouth DG5 Flooding – 1500mm Tunnel down Northgate Street into Tar Works

Norwich Resilience (Water) – Tunnelling under the River Yare to accommodate Water Main

Cambridge, Madingley Road – 1200mm tunnelling

Lowestoft DG5 Flooding – 1500mm adjacent to a railway and sinking shafts in Network Rail's Yards

Gt Yarmouth DG5 Flooding – 1500mm Tunnel down Northgate Street into Tar Works

Norwich Resilience (Water) – Tunnelling under the River Yare to accommodate Water Main

Cambridge, Glebe Farm – Installation of Rising Main under the East Coast Main Line for the Development around Addenbrookes

Milton Keynes – 600mm Tunnelling for Housing Development to connect into existing Sewer Network

Kettering, North West Sewer (Ise Valley Sewer Scheme) – Tunnelling through Asda land and Housing/Industrial Estates

Market Harborough – 1800mm Tunnel in Housing Area

Sludge Treatment Centres:

Milton Keynes STC

King's Lynn STC

Water Recycling Centres:

Chalton WRC

Great Dunmow WRC

Dereham WRC

Ingoldisthorpe WRC

Water Treatment Works:

Dalton Peircy WTW

Postwick WTW

Heigham WTW (Norwich)

Page Break

Delivery of the new infrastructure for the core site masterplan

Cambridge City Council working together with the majority landowner, Anglian Water, has appointed U+I as the master developer to manage and implement the masterplan infrastructure required for the new housing scheme for the core site.

The supply chain delivering the masterplan infrastructure under the overall management of the master developer, U+I, can be summarised into on-site infrastructure and off-site infrastructure.

All infrastructure, whether delivered directly by the master developer's supply chain or via statutory third parties, will be scoped, scheduled and coordinated by U+I as part of delivering the overall housing scheme. U+I is a specialist regeneration and property developer with a proven track record and a £9.5bn portfolio of complex, mixed-use, community focused regeneration projects. A case study is include at Appendix AD evidencing the master developer's track record.

1. On-site Infrastructure

The on-site infrastructure will be delivered in four ways.

A. On-site infrastructure by U+I as master developer.

B. On-site infrastructure by the plot developers.

C. On-site infrastructure by Cambridge County Council.

D. On-site infrastructure by statutory undertakers.

1A. On-site Infrastructure by U+I as master developer

U+I has been selected and appointed as the master developer by the landowners. The scope of the infrastructure to be delivered by U+I includes the following.

- Demolition of the existing waterworks and any necessary remediation and site preparation

- Primary roads and cycleways to serve the development plots together with strategic highways links to neighbouring sites

- Provision of facilities to extend the local bus route on the primary road network

- Strategic utilities to serve to the development plots (to include water, sewerage, surface water drainage, telecoms)

- Key attenuation in ponds and storm cells

- Green infrastructure (hard and soft landscaping) to form the main park, perimeter boundaries, natural corridors and strategic green zones

- Social infrastructure buildings including community and health centre

The aspiration to reclaim heat energy from the existing sewer tunnel (Sewerage Heat Recovery – SHARC) to contribute to energy needs of the new schools and community buildings

1B. On-site Infrastructure by the plot developers

As the master developer, U+I will procure individual developers/housebuilders to deliver the non-strategic infrastructure within the development plots. The delivery of this infrastructure will be controlled under the guardianship of U+I using explicit contractual arrangements. The scope of the infrastructure to be delivered by the on-plot developers includes the following.

- Secondary roads within the development plots

- Neighbourhood squares and green links within the development plots

- Car and cycle parking in multi-storey car barns

- Utilities distribution within the development plots

- Local attenuation through blue roof and storm cell technology

- Waste management through underground bins

- 'Secure by design' obligations

1C. On site Infrastructure by Cambridgeshire County Council

The masterplan will require the delivery of new schools for the new urban quarter of Cambridge. The schools will be funded through a Section 106 contribution with the delivery supply chain procured by Cambridgeshire County Council coordinated with the wider development under the control of U+I. The scope of the infrastructure includes two primary schools and one secondary school.

1D. On site Infrastructure by statutory undertakers

The only on-site utility related infrastructure is expected to be delivered outside of U+I's own supply chain is the diversion of the overhead HV power cables currently crossing the site on pylons. These will be buried and routed along the northern boundary with the A14 and below Cowley Road on the western boundary of the site. This work will be delivered by National Grid and their contractors but coordinated with the master developer, which includes the following.

- Removing overhead power cables and pylons on the site

- Diverting the power cables underground

- Creating two locations on site where the cables enter the ground

2. Off-site infrastructure

The off-site infrastructure will be delivered in two ways.

A. Off-site infrastructure by U+I, as master developer.

B. Off-site infrastructure by statutory undertakers.

2A Off-site infrastructure by U+I as mater developer

The scope of the infrastructure to be delivered by U+I includes highways works consisting of four junction improvements, together with a new underpass under Cowley Road to improve pedestrian and cycle links westwards to the Science Park.

2B. Off-site infrastructure by statutory undertakers.

The following works relate to the off-site highway structure and utility reinforcement requiring delivery by the relevant statutory undertaker but coordinated by the master developer. The scope of the off-site infrastructure delivered by statutory undertakers includes the following.

- A new pedestrian and cycle link over the A14 trunk road delivered by Highways England

- A new pedestrian and cycle link over the railway delivered by Network Rail

- The reinforcement of the power supply to serve the wider development site by UK Power Networks

- The reinforcement (if necessary) of other utility supplies.

Procurement strategy

Please provide details of engagement with contractors to date and the procurement strategy for delivery of the infrastructure scheme

Note on CNFE infrastructure

The infrastructure for CNFE is split into two key elements:

- The relocation of the CWRC.

- Delivery of the new infrastructure for the core masterplan.

The relocation of the CWRC

A collaborative commercial model for working with design and delivery partners

Anglian Water's decision to form strategic alliance of partners for the design and delivery of capital schemes emerged in Asset Management Period 3)2000 to 2005). The previous delivery approach had inefficiencies inherent in its approach. Whereas lowest cost suggested efficiency, in practical terms, the relationships with the supply chain tended toward adversarial and were less efficient. Anglian Water has successfully led its industry in applying a collaborative commercial model with its design and delivery alliance partners, co-located and working with our own engineering people as one team.

The model has been refined over the last 15 years

The basis of this approach is the belief, demonstrated by performance, that proper use of a top down incentivised target cost approach, in collaboration with partners, is a more sustainable and efficient way to achieve Anglian Water's business outcomes and to drive innovation. This approach led to the formation of the @one Alliance, which is now approaching 15 years of outperformance. The associated commercial model is widely respected and identified as best practice across the utilities sector.

The companies within the @one Alliance are: [redacted]. They benefit from being able to enhance capacity and expertise through parent companies to support a major scheme such as the relocation of the CWRC. The @one Alliance operates as a collaborative virtual joint venture entity to deliver a large proportion of Anglian Water's capital programme.

Resources used so far

To date the @one Alliance has worked with Anglian Water's internal Steering Group to design and cost all activities to relocate the CWRC. This input includes planning and other enabling activities and well as the detailed design and related costing of major assets such as tunnel transfers and

treatment processes. Where necessary, the @one Alliance has worked with others in their supply chain for expert opinion on matters such as tunnelling.

Input from the various parties to date is quantified as follows.

Anglian Water staff – [redacted]

Appointed consultants – [redacted]

@one Alliance- [redacted]

Preliminary project planning activities relating to the relocation of the CWRC have been governed through an Anglian Water internal steering group, with representation at executive direct, director and technical/planning specialist levels. Input at specialist level extended to legal, flood risk, environmental permitting and decommissioning. In addition, [redacted] have provided advice in relation to planning, the Nationally Significant Infrastructure Project processes, compulsory purchase and strategy.

Ground conditions and decommissioning

With reference to ground and groundwater contamination, the appointed consultants have worked with Anglian Water technical specialists to review existing baseline data to understand the hydrogeological setting, potential contaminant pathways, contaminant sources and receptors. A conceptual model of the site has been developed and a draft remediation strategy has been developed. This follows the adoption of the approach described in Model Procedures for the Management of Contaminated Land (CLR11). This initial phase of activity identified data gaps and these have been addressed through further intrusive investigations. An Anglian Water framework partner, [redacted] was engaged to undertake related site based geotechnical drilling and sampling activities.

[redacted] has also been engaged to report on other aspects of decommissioning. A full cost build up for site demolition and clearance has been delivered using industry wide cost databases. This complements a report prepared an experienced site decommissioning contractor. To inform discussions on decommissioning, [redacted] has developed a 3D visualisation tool to indicate the extend of below ground assets to inform the scope for site decommissioning to allow for future development.

Permitting

In addition to the joint activities with consultants, Anglian Water has, for a period of 12 months, discussed environmental permitting matters with the Environment Agency. This has been focussed on impact assessments if consideration needs to be given to relocating the effluent outfall to another point on the River Cam or an adjacent catchment. Consultants were engaged to develop hydrological models to assess the impact of losses to the river system through a relocation of the outfall.

Senior level in involvement from the start and into the future

The decision was taken at an early stage to invite a senior level project management and scheme delivery expertise to the project. In this case, the expertise was sourced from the @one Alliance.

Anglian Water has, through the governance described above and with consultant support, carefully considered the best value delivery approach to ensure timely delivery of the related and relocated CWRC, with full adherence planning requirements and to the necessary quality and budgetary ceilings.

Following the above, and focussed discussions with Anglian Water's Director of Alliances and Integrated Supply Chain, the decision was taken to follow a procurement strategy under which, the @one Alliance is appointed to deliver the relocation of the CWRC, including the strategic infrastructure links in the form of tunnel transfers.

If the Business Case is successful, further director level discussions with the @one Alliance will focus on the development of an Integrated Programme Team (IPT) or the planning, details design and delivery of the relocation. The IPT will be formed from members of Anglian Water, the @one Alliance and appointed consultants. The strategic delivery plan will assume that Anglian Water leads matters relating to the planning permits needed for development and other related planning activities.

Delivery of the new infrastructure for the core site masterplan

As the landowners of the CNFE core site, Cambridge City Council and Anglian Water have appointed U+I as the master developer to procure the masterplan infrastructure required for the new housing scheme for the core sites (sites 1A and 1B).

U+I will fund the infrastructure for the core site masterplan and will engage and procure the following parties to deliver the overall infrastructure.

- The master developer's supply chain contractors
- Plot developers/housebuilders
- Cambridge City Council's framework partners
- Statutory providers for the utilities and highways
- Network Rail for the link bridge over the railway
- Highways England for the link bridge over the A15 trunk road.

Procurement of the U+I's supply chain contractors

The masterplan developer has been appointed by U+I, along with a team of other professional consultants to progress the masterplan strategy and design. Much of the strategic infrastructure for

the masterplan will be delivered by U+I through the procurement of specialist designers and works contractors.

Pre-construction surveys and investigations

Prior to securing planning consent to undertake the infrastructure works, U+I and their professional team will scope and procure a range of details surveys and site investigations to inform the scope of the site preparation works, to assess and mitigate risk and the environmental impact and inform the infrastructure design.

Key infrastructure packages

A table showing the proposed principal work packages to be procure to deliver the CNFE core site infrastructure is included in Appendix O1.

The strategically important infrastructure to be delivered outside of the housebuilding development plots will be procured through six disciplines of infrastructure works. This package approach complies with stakeholder interests and provides the optimum efficiency and flexibility to sequence the infrastructure works in accordance with the target delivery programme:

- **Package 1 – Site preparation** This will include the demolition, site remediation and site preparation to provide a formation suitable for both primary infrastructure contractors and then the subsequent developers/housebuilders to build out the housing plots. The package will be split into 2 phases to reflect the phased release of land by Cambridge City Council and Anglian Water. This package will also include the creation of an acoustic berm along the northern boundary with the A14 to help facilitate the early diversion of the overhead HV power cables.

- **Package 2** – Primary roads and utilities. This will include multi-utility provision following the network of primary roads together with junction improvements and connections to the existing road network. This package will be split into 6 phases to reflect neighbourhood delivery.

- **Package 3** – Green infrastructure. This will include hard and soft landscaping and by specialist contractor procured by the Master Developer.

- **Package 4** – Network Rail link bridge. This will include the link bridge works over the existing railway undertaken by Network Rail.

- **Package 5** – A14 link bridge. This will include the link bridge works over the A14 trunk road undertaken by Highways England.

- **Package 6** – Power cable diversions. This will include the removal of overhead cables and pylons and the diversion of the power cables underground by National Grid.

Procure Process

Package 1 – Site preparation – split into 2 phase to reflect site acquisition

[redacted]

- [redacted]

- [redacted]

- [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

- [redacted]
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- [redacted]
- [redacted]
- [redacted]

[redacted]

[redacted]

[redacted]

5.3.3 Please attach any supporting evidence from contractors / developers which support your proposal

CWRC Relocation

Anglian Water Services Limited, the @One Alliance and parts of its supply chain have all been heavily involved with the preparation of this Business Case and the preparation of the supporting material and needed. Therefore the relevant people for the delivery of the relocation of the CWRC have supported this proposal and are able to continue to support if the grant is awarded.

Delivery of the new infrastructure for the core site masterplan

A period of detailed market engagement with infrastructure providers, housebuilders and register providers (affordable housing) will be undertaken in Q1 2019. To date, there has been limited engagement with both a demolition & ground remediation contractor and a utilities network system provider to support our proposed programme, phasing and cost estimates in this regard.

A land remediation methodology and programme has been provided by [redacted] (a multi-disciplined specialist contractor delivering decontamination, asbestos removal, demolition, civil engineering, construction and recycling services) developed in support of the approach to preparation of the CNFE core site. This information is included in Appendix P.

Please attach any support evidence from contractors / developers which support your proposal

[redacted]

[redacted]

[redacted] [redacted]

Implementation timescales

Please provide an overview of the implementation timescales for your procurement strategy

The relocation of the CWRC

The timescales for procurement depend on the route taken to secure the consents necessary for the relocation of the CWRC. There are two potential routes, via Development Consent Order (DCO) or Planning Application/Compulsory Purchase Order (PA/CPO). Both of these routes will be taken forward in parallel with the submission of this Business Case, and appropriate action will be taken to keep them both available.

DCO

The DCO process is described in Q7.4.5. Our use of this process is reliant upon the relocation of CWRC automatically qualifying as a National Significant Infrastructure Project (NSIP), or to be deemed to be under s35 of the Planning Act 2008. These are descried in the following paragraphs.

Automatic NSIP process

If the relocation of the CWRC automatically falls within the definition of an NSIP, as defined in the Planning Act 2008, Anglian Water will prepare an application for a DCO. This will be submitted to the Planning Inspectorate in [redacted], for determination [redacted].

Section 35 process

If the relocation of the CWRC requires the project to be deemed to be an NSIP, Cambridge City Council and South Cambridgeshire District Council will jointly submit an application to the Secretary of State for the Environment, Farming and Rural Affairs (SoS) under Section 35 of the Planning Act 2008. This will ask the SoS to deem relocation of the water recycling element to be an associated project to the relation of the sludge treatment centre (because the relocation of the sludge treatment centre it is automatically an NSIP). If this is successful, a DCO will be prepared and submitted to the Planning Inspectorate [redacted] for determination [redacted].

*The Planning Inspectorate will then follow due process through examination and determination phases over the subsequent 12 months resulting in an anticipated confirmation by the Secretary of State for Housing, Communities and Local Government to confirm the DCO in [redacted] which would then be subject to a 6-week period of potential judicial review.

Concurrent with the above DOC process, Anglian Water will procure the relation of the CWRC using their existing framework arrangements (see Q5.2.1) with supply chain contractors ready to allow the work to commence, once the necessary consents are secured.

[redacted] following a successful DCO process set out above, Anglian Water, Cambridge City Council and delivery contractor will enter into a contract for the delivery of the relocation project. The construction of the relocated CWRC will take around [redacted] with completion and commissioning finishing in [redacted]. This will be followed by a decommissioning process which will see part of the CNFE core site (1A) being available for development in [redacted], and the rest in [redacted].

Planning Application/Compulsory Purchase (PA/CPO)

If the use of the DCO route is not possible, the PA/CPO route will be taken. This requires a planning application to be submitted for the new WRC and, once received, a compulsory purchase order confirmed for the acquisition of the land and rights in land for the connecting tunnels. The details of this process are described in Q7.4.5.

The timescales for this process are different from the DCO. In summary, the key dates are the submission of the planning application in [redacted], planning permission in [redacted], CPO

confirmation in [redacted] Preparations for the award of the contract to relate the CWRC would take place in parallel.

The new infrastructure to support the housing masterplan on the core site

A successful application for a HIF grant in [redacted] will trigger a [redacted] for the development of the CNFE core site masterplan, leading to the submission of a compliant hybrid planning application in [redacted]. In this period the masterplan team will undertake all necessary pre-planning activities for the core site masterplan. This will include development of the design in cognisance of the wider-area Area Action Plan (AAP) and applicable design codes. Intrusive site investigations and an environmental impact assessment to support a compliant planning application will be undertaken in agreement with Cambridge City Council planning team and the partnership landowners. Pre-planning public and stakeholder consultations will also be undertaken during this period.

The planning strategy is to develop and submit a hybrid planning application. This will be detailed in respect of the strategic infrastructure works to activate the development plots but will be outline in respect of the new building development including housing. The hybrid application is planned to be submitted to the local planning authority in [redacted].

Concurrent with the above development of the masterplan design for planning, the AAP will also be evolving during this period. The programme anticipates that the AAP will be finally adopted by Cambridge City Council in [redacted] such that the hybrid planning application for the masterplan can be determined with planning consent granted by [redacted] in full appreciation of the adopted AAP.

Following procurement of a specialist demolition and groundwork contractor, site preparation (demolition, ground remediation and site profiling) is planned to take place in two phases to reflect the following vacant possession dates.

- Phase 1 – Vacant possession of 100% of the Cambridge City Council owned land and approximately 10% of the Anglian Water owned land will take place in [redacted] following obtaining the planning consent. This phase delivers suitable ground formation

levels required for the subsequent infrastructure and development of neighbourhoods 1 and 2. This phase involves less demolition and anticipates lower levels of ground remediation. This 1st phase of site preparation will complete in [redacted].

- Phase 2 – Vacant possession of 90% of the balance of the Anglian Water owned land will take place following the decommissioning of the existing CWRC in [redacted]. This phase delivers suitable ground formation levels required for the subsequent infrastructure and development of neighbourhoods 3 to 6. This phase involves more demolition and anticipates higher levels of ground remediation.

- This 2nd phase of site preparation will complete in [redacted].

Please refer to the site preparation phasing drawing in Appendix O2.

During the above site preparation works a framework contract will be set up with preferred specialist civil engineering contractors to deliver the subsequent strategic infrastructure (roads, utilities, SuDs, green zones) to create and activate the development plots within each housing neighbourhood. This strategic civil engineering will be undertaken in 6 phases.

- Phase 1 – Infrastructure to activate the plots within neighbourhood 1 will commence following phase 1 of the site preparation in [redacted] and will complete in [redacted].

- Phase 2 – Infrastructure to activate the plots within neighbourhood 2 will commence following phase 1 of the site preparation in [redacted] and will complete in [redacted].

- Phase 3 – Infrastructure to activate the plots within neighbourhood 3 will commence following phase 2 of the site preparation in [redacted] and will complete in [redacted].

- Phase 4 – Infrastructure to activate the plots within neighbourhood 4 will commence in [redacted] and will complete in [redacted].

- Phase 5 – Infrastructure to activate the plots within neighbourhood 5 will commence in [redacted] and will complete in [redacted].

- Phase 6 – Infrastructure to activate the plots within neighbourhood 6 will commence in [redacted] and will complete in [redacted].

Please refer to the strategic infrastructure phasing drawing in Appendix O3

Please also refer to the Strategic Programme for the CNFE core site included in Appendix Z1 along with the Timetable in Appendix AA

Please provide an overview of your phasing and implementation strategy for the wider scheme

In responding to this question we have assumed that this primarily relates to the implementation timescales for the procurement of the wider housing development as the relocation of the CWRC and the new infrastructure to support the housing masterplan on the core site have been explained in the above response to Q5.4.1.

Please also refer to the overall strategic programme together with activity durations and milestone dates as provided in response to Q7.4.3.

Core site housing development

A successful application and approval of the HIF grant by Homes England in [redacted] will trigger a three year period for the development of the CNFE core site masterplan leading to the submission of a compliant hybrid planning application in [redacted].

In this period the masterplan team will undertake all necessary pre-planning activities for the core site masterplan. This will include development of the design in cognisance of the wider-area Area Action Plan (AAP) and applicable design codes. Intrusive site investigations and an environmental impact assessment to support a compliant planning application will be undertaken in agreement with Cambridge City Council planning team and the JV landowners. Pre-planning public and stakeholder consultations will also be undertaken during this period.

The planning strategy is to development and submit a hybrid planning application. This will be details in respect of the strategic infrastructure works to activate the development plots but will be outline in respect of the new building development including housing. The hybrid application is planned to be submitted to the Cambridge Planning Services in [redacted].

Concurrent with the above development of the masterplan design for planning, the AAP will also be evolving during this period. The programme anticipates that the AAP will finally be adopted by Cambridge City Council in [redacted] such that the hybrid planning application for the masterplan can be determined with planning consent granted by [redacted] in full appreciation of the adopted AAP.

Following the preparation of the core site and the delivery of the strategic infrastructure (roads, utilities, SuDs, green zones) to create and activate development plots, neighbourhoods will be delivered in the 6 phases across the core site.

Plot developers will be procured to deliver the housing plots in line with the overarching sales strategy planned around market absorption rates. The Master Developer and the Programme Management Office will oversee the procurement of plot developers on behalf of the JV Programme Board.

The procurement of the plot developers will take place to allow sufficient time for the plot developers to develop their designs in alignment with both the outline planning consent and design standards, in order to then obtain detailed planning permission and procure their construction supply chains. The procurement of developers for neighbourhood 1 plots will take an estimated [redacted] commencing in [redacted] and completing in [redacted]. This will allow plot developers a little [redacted] [redacted] to secure their detailed planning consents and be ready to commence on site.

During this period the master developer's PMO will act as custodians of the masterplan and ensure that the plot scheme complies with the requirements of the outline planning consent and the design standards.

The development plots will be built out by the plot developers and the release of the plots and the subsequent development will be phased in line with the 6 neighbourhoods:

- Phase 1 – Housing development on plots within neighbourhood 1 will commence following significant completion of phase 1 strategic infrastructure in [redacted] and will complete in [redacted].

- Phase 2 – Housing development on plots within neighbourhood 2 will commence following significant completion of phase 2 strategic infrastructure in [redacted] and will complete in [redacted]

- Phase 3 – Housing development on plots within neighbourhood 3 will commence following significant completion of phase 3 strategic information in [redacted] and will complete in [redacted].

- Phase 4 – Housing development on plots within neighbourhood 4 will commence following significant completion of phase 4 strategic infrastructure in [redacted] and will complete in [redacted].

- Phase 5 – Housing development on plots within neighbourhood 5 will commence following significant completion of phase 5 strategic information in [redacted] and will complete in [redacted].

- Phase 6 – Housing development on plots within neighbourhood 6 will commence following significant completion of phase 6 strategic information in [redacted] and will complete in [redacted].

Contract management approach

Please provide details of your approach to contract management and any details of any arrangements already in place – this should include charging mechanisms

Note on CNFE infrastructure

The infrastructure for CNFE is split into two key elements:

- The relocation of the CWRC.

- Delivery of the new infrastructure for the core site masterplan.

Approach to contract management for the relocation of the CWRC

Anglian water has established a rigorous governance process in respect of its delivery of programmes of works. At each stage or Delivery Milestone, Anglican Water acts as an informed client, and as an integrator within the @one Alliance, to ensure that designs are completed prior to site entry, that relevant commissioning plans are developed alongside the design, and that the relevant outputs at each stage of the delivery process are delivered.

The delivery process for the standalone solutions is a six-stage, six milestone process, as shown in the Anglican Water Governance Structure included in Appendix Q. Each stage is followed by a milestone which is a stop/go point in the process where certain criteria need to be met in order to pass that milestone, as described below.

DM- Decision Milestone 0

Stage 0: Asset-related risks are identified, validated and prioritised using robust and consistent data.

DM1 Decision Milestone 1

Stage 1: Anglian Water, as the client, leads the Blue Box stage where the root cause of the problem is confirmed and an appropriate Totex (total expenditure) strategy is identified.

DM2 Decision Milestone 2

Stage 2: The Delivery Contractor is now driving the project and stage 2 is to optioneer a single solution which will meet the identified need and affordability.

DM3 Decision Milestone 3

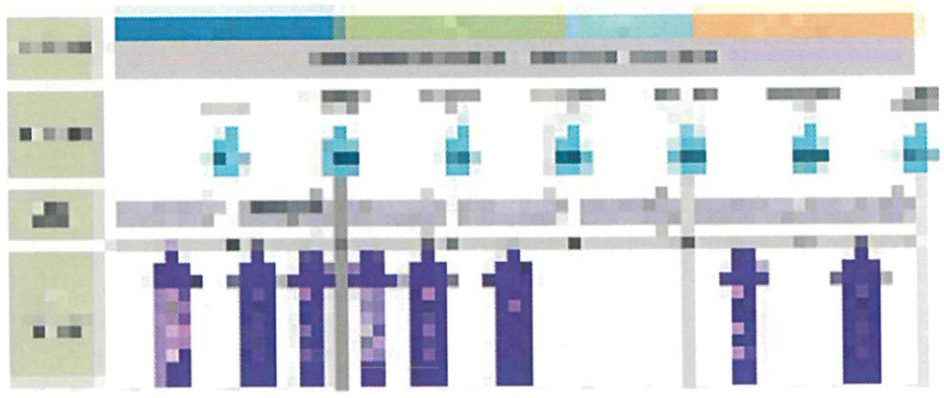
Stage 3: This is where the detail design is undertaken and the supply chain is fully engage and the integration of standard products considered.

DM4 Decision Milestone 4

Stage 5: This stage is about completing the financial and administration aspects of the project, settling accounts and submitting corporate data relating to the project

DM6 Decision Milestone 6

Stage 6: Stage 6 actually starts at the same time as stage 5 (on completion of DM4) and comprises a [redacted] warranty period where delivery will respond to any warranty issues that occurs after DM4 Handover.



As well as relying on a degree of self-assurance of costs by the @one Alliance (which includes Anglian Water staff), Anglian Water also has a dedicated contract management team whose focus is the administration of the construction contracts, ensuring that the relevant documents are signed on time, and any notices under the contracts are issued and responded to appropriately.

Costs are paid via our own enterprise system (SAP). All of our alliance partners are on the Anglian Water systems to ensure there is a single version of costs information, and ensure visibility of cost. Anglian has a commercial assurance team who ensure that the correct payments are made based on actual cost, and that the commercial mechanisms such as gainshare programme pools are properly administered.

Approach to contract management for the delivery of the new infrastructure for the core site masterplan.

U+I will set up a Programme Management Office (PMO) to act as the guardian for the masterplan. Part of the PMO team role will be to manage and administer all contracts put in place to deliver the master plan.

The requirements from contract management will be defined as part of the Project Execution Plan (PEP). The PEP will contain a Contract Administration Manual which will include:

- Organisation, Governance and Structure
- Commercial Management Practices and Tools
- Contract Hand-over and Start-up
- Contract Administration
- Contract Completion

In addition, the proposed Contract Administration tools include:

- Web-based Administration for NEC Contracts ie, CEMAR

- Project Risk Register ie, EZ Risk

- Cost Management System ie, Oracle Unifier

- Scheduling Tool ie, Microsoft Project or Primavera P6

Contract administration system

The Contract Administration System, eg, CEMAR, is a digital web-based system that supports contract administration procedures and ways of working. It includes document, administration and communication templates. Its workflow approach ensures that the project team members, including Contractors, are notified promptly of actions required of them. The tool will provide an accurate and up-to-date record of the status and progress of each contract.

Contract handover and start-up

This is the point at which a newly-signed contract is handed over from the procurement process to the contract administration phase. Central to handover is a commercial information pack prepared during tendering and contract award. At handover the contract administration team is appointed and briefed, and meetings held with the contractors to make sure that all parties have a common understanding of how the contract will be managed.

Accepted programme

The accepted programme describes what will happen during the course of the works under the contract and when the work will be done by. The contractor is required to submit a programme when the contract is initiated and provide updates as the programme changes. Each time the programme changes the contractor submits a new programme for our acceptance.

Deliverables

Contact deliverables are defined as the contractual obligations and requirements to be provided by both the contractor and client team. A schedule of contract deliverables is established at the earliest opportunity but by no later than the commencement of the contract and acts as a control tool to manage and record the status of each of the deliverables. It is compiled by the project team, led and managed by the Commercial Manager.

Cost management and reporting

Information supplied by contractors during the monthly payment cycle is extracted and consolidated to provide the source for progress reporting and financial control.

Communications

There are very specific arrangements for managing the communication ?ow between the Project Manager and contractor. The correct type of communication must be used at all times and recorded properly.

Management of early warnings

Whenever the client team or the contractor becomes aware of an actual or potential event that may affect the project there is an obligation to raise an early warning so that it can be managed efficiently and minimise impact. Early warnings are managed within the contract administration system and reviewed frequently to ensure that risks are managed in a timely way.

Contract change management

Changes to the works programme are managed through compensation events (in NEC terminology). These occur where changes to the programme result in contractor's entitlement to compensation for additional cost incurred. This may come about , for example, as a result of our failing to provide resources or equipment or changing the works specification. Compensation Event will usually follow the raising of an Early Warning.

Contractor payments

Contractor submit payment applications according to a contract-specific payment schedule. Each application is validated by the Commercial team before an amount is agreed and a payment certificate is issues. The company verifies that the detailed breakdown in the payment application accurately reflects progress and costs. Payment follows the submission of an invoice by the contract.

Subcontracting

The Project Manager must be satisfied that a contractor's programme of works is realistic in terms of the work packages that are to be subcontracted and the capabilities of the proposed Subcontractors.

It helps to ensure that we maintain adequate control of the programme and is achieved through the active participation through the active participation of the Commercial team in the Subcontract selection process.

Administration and record keeping

The keeping of comprehensive, well-managed records is vitally important. Among other things it supports decision-making, enables control of costs, removes ambiguity and confusion and assists with dispute resolution if needed. Document management policies, procedures and guidance documents define the requirements for record keeping and compliance with these requirements is mandatory.

Cost verification and temporary asset disposal

Anglian Water makes sure that contractor's systems for managing costs are fit for purpose and that costs submitted are properly verified. This ensures that all records required are prepared by the contractor and that costs submitted are properly verified. This ensures that all records required are prepared by the contractor and that costs are not over-recovered. Cost verification minimises the incidence of fraud and corruption in the supply chain and establishes an environment that avoids abuse in the recording and application of defined cost. It provides audit and evidence data to support audits carried out on behalf of stakeholders.

Insurance

The sums involved in the project are substantial and insurance is a vital part of contract administration. Insurance over is in place for loss and damage of project property and any injury caused to third parties. These insurances extent to contractor's, Subcontractors, Suppliers, Manufacturers and Consultants, although these other parties must put in place their own arrangements covering safety and wellbeing of their employees, professional liabilities, loss of or damage to their own equipment and vehicle use.

Avoidance contract dispute

The company are anxious to avoid disputes. Nevertheless, they may arise, usually as a disagreement over the interpretation of the contract or other facts or opinion, or a breakdown of commercial negotiations. All parties involved in a dispute are expected to make best efforts to resolve their differences, conducting themselves in a spirit of collaboration based on mutual trust and cooperation. A dispute avoidance procedure will set out the dispute escalation/ resolution process required, and each contact will also set out the principles for dispute resolution.

Contractual and commercial completion

The mechanism for closing a contract covers the physical completion of work as well as commercial close; the settlement of the outstanding amount. Commercial close takes place at the end of the defects liability period; the time during which the contractor must address any defects found. This will typically be 12 months following completion of works.

Please provide details of the proposed key contractual clauses

CWRC relocation

There will be a number of key clauses in the various contracts and agreements required to enable the relocation of CWRC. The exact drafting of these clauses will take place at various stages to ensure the HIF grant is used to deliver the relocation of the CWRC and so allow the regeneration of the CNFE.

Joint venture agreement

This will be an overarching agreement between Cambridge City Council and Anglian Water as landowners governing the relationship between the parties to enable relocation of the CWRC. Key

clauses in this agreement will cover the mechanism for making land available on the Core site and the distribution of receipts.

Constructions Agreement

An overarching framework agreement between Anglian Water, its alliance partners and Cambridge City Council governing the design and construction works, pursuant to which Professional Services Contract for the design of the works from feasibility to design completion ready for construction, and New Engineering Contract NEC3 (as amended by AWS) for the construction and commissioning phases of the relocation of the CWRC, are issued. The key terms will include the following.

Contract terms for liability, indemnity, termination provisions.

Financial instruments including guarantees and bonds.

Contractor responsibility including design standards, and the responsibilities and obligations of any subcontractors.

Programme delivery including start and completion dates, and associated remedies for low performance.

Testing requirements, and defects management.

Payment provisions.

Change control management.

Risks management.

Insurance provisions.

CNFE masterplan

Master Development Agreement

The relationship between Cambridge City Council and Anglian Water as landowners of the CNFE core site (sites 1A and 1B) and U+I as the master developer will be governed by a Master Development Agreement (MDA). Key clauses in the MDA include the following.

- Objectives and Milestones – overarching outcomes and timescales

- Developer's Warranties providing assurance to the landowners about the developer's standing and authority to carry out the MDA

- Licence for Access granted by the landowners to the master developer and its agents to carry out surveys, investigators and other works in accordance with its responsibilities

- Conditions Precedent including obtaining HIF funding, approval of a Business Plan comprising a range of strategies for the pursuit of the development, landowner approval of a masterplan, obtaining satisfactory planning permission and satisfying development viability criteria

- Plot Conditions applicable to each development plot relating to vacant possession, detailed planning, a plot delivery strategy and plot viability criteria

- Provisions for Plot Licences to allow the master developer to carry out infrastructure and enabling works

- Obligation on both parties regarding the Marketing and Disposal of serviced plots of land for building

- Provisions for a Project Band made up of the landowners and the master development to oversee the project

- Provisions limiting the developer's liability and indemnifying the owner's against matters arising in the carrying out of works

- Provisions for third-parry arbitration in the event of disputes

Core site plot disposal agreements

The key contractual clauses to be included in the Plot Licences between the landowners and master developer and plot developers for the build-out of the development plots will obligate the plot developers and their supply chain in respect in respect of their performance against, and compliance with each of the following.

- Overarching objectives of the CNFE scheme agreed by the Project Board and defined by the strategies contained within the approved Business Plan

- Planning requirements set out the CNFE Area Action Plan (AAP) and the satisfactory planning permission for the overall development

- Delivery of the Approved Scheme on the basis of which the Plot Developer has been selected

- Design and specification standards set out in the Design Code and the Employer's Requirements developed by the master developer

- Delivering at least the minimum number of residential units and providing the landowners with at least the minimum return as consideration for the disposal of each plot

- Provision of local employment opportunities, the employment of local labour and use of the local supply chain

- Compliance with the Site-wide Infrastructure Strategy and Site wide Maintenance Strategy

- Measures to protect the environment set out in the masterplan EIA and the Construction Management Plan

- Sustainability requirements set out in the CNFE Sustainability Strategy (Part of the Business Plan)

- Completion and release of homes into the market in accordance with the Marketing and Disposal Strategy

- Compliance with health and safety requirements set out in the site wide Health and Safety Plan

- Compliance with the Considerate Constructors scheme

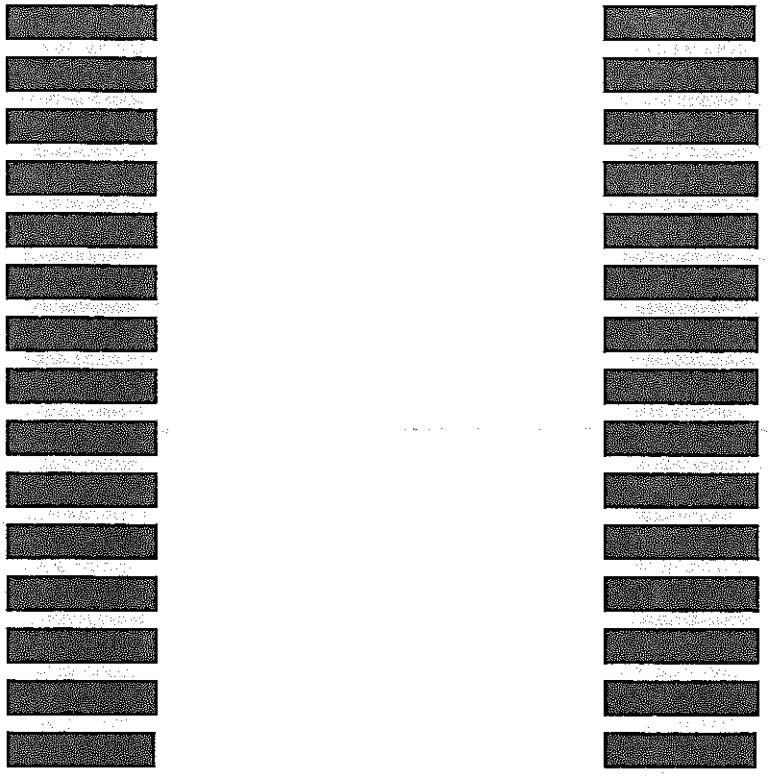
- Communication policies and requirements set out in the Communication Plan as part of the overarching Project Execution Plan (PEP) for the masterplan

The plot developers will be required to comply with all relevant parts of the Business Plan. U+I's PMO will act as stewards and guardians of the masterplan and will enforce compliance by plot developers to their contract obligations within the plot licences to comply with the Business Plan and protect the interests of the joint venture Programme Board, Cambridge City Council and the local neighbourhood.

Additional information

Please provide details of the proposed key contractual clauses

[redacted]



Financial Case

What are the total scheme costs?

[redacted]

Will the infrastructure costs be 100% funded through HIF?

Yes

Please provide a summary of the total infrastructure costs of the project

Description	Type	HIP Funding
Construction – WRC, STC, tunnels	Infrastructure	[redacted]
Other – fees, OH, land	Infrastructure	[redacted]

Please provide a summary evidencing how you have assumed these costs

The costs estimates contained within this business case have been prepared by the @one Alliance. The @one Alliance has used its normal costing processes to arrive at the estimates being used in this business case. This includes using the costing database which is used to verify costs estimates submitted to Ofwat as part of the five yearly Asset Management Period submission. All of the material produced to support the cost estimates can be found in Appendix 6.1.4.

Please refer to the cost estimates for the relocation of the CWRC (short and long tunnel options) included in Appendix R. Both of these options have been included because the location of the relocated CWRC is unknown at the moment, therefore, the longer option cost has been used as the potential maximum cost.

No attachments

Can you provide detailed costing for the housing element of the wider project that forms part of your total scheme costs?

Yes

Description	Type	Cost
Site preparation – 1A, 1b	Abnormals	[redacted]
Major Service Diversions – 1A, 1B	Abnormals	[redacted]
Reinforcement to off-site Utilities – 1A, 1B	Infrastructure	[redacted]
On-site primary Roads and Utilities – 1A, 1B	Infrastructure	[redacted]
Section 278 Road Improvement – 1A, 1B	Infrastructure	[redacted]
Green and Blue Infrastructure – 1A, 1B	Infrastructure	[redacted]
Off-site Linkages and Interventions – 1A, 1B	Infrastructure	[redacted]
S106 Community Built Provision	Construction	[redacted]
S106 Transport Contribution – 1A, 1B	Construction	[redacted]
Neighbourhood on-plot development – 1A, 1B	Construction	[redacted]
Demolition and Remediation Works – 1A, 1B	Construction	[redacted]
Design and Cost Contingency – 1A, 1B	Contingency	[redacted]
Adjacent Sites 2A, 2B, 2C – Total Scheme costs (incl Contingency)	Construction	[redacted]
Residual Land Value – 1A, 1B, 2A, 2B, 2C	Land (exec. Sunk costs)	[redacted]
Master Developer Land Receipt – 1A, 1B	Land (exec. Sunk costs)	[redacted]
SDLT and Fees	Land (exec. Sunk costs)	[redacted]
1A, 1B, 2A, 2B, 2C	Professional fees	[redacted]
1A, 1B, 2A, 2B, 2C	Finance costs	[redacted]
1A, 1B, 2A, 2B, 2C – Funding Type = Letting, Sales and Marketing	Other	[redacted]

Please provide a summary evidencing how you have assumed these costs

The housing costs including the associated infrastructure costs applicable to a residential development (i.e. roads, strategic landscaping, landscape, etc.) referred to under 6.1.5 to 6.1.7 are supported by the [redacted] order of cost estimate which has been provided under 6.1.9.

This estimate is based on the design information currently available and forms a working document that has been reviewed by the design team and will be under constant review going forward. The estimate will be expanded and updated as and when the details and design develops. In turn the developing design will be challenged at ever point, regarding the cost effectiveness and programme efficiency of the proposed solution.

This estimate provides a details assessment of the overall extend of built development and ancillary buildings as well as a detailed estimate of the overall scope of associated infrastructure works under key workstreams.

The measurement of the built development has been based on the indicative Gross Internal floor areas (GIA) as provided by the URBED area schedules. The areas have been imported into the relevant sections of the [redacted] estimate and priced accordingly, in order to provide indicative costs of the housing elements as identified within the precedent Question 6.1.7. The associated infrastructure works (roads, strategic, landscaping, etc.) have been quantified where possible and priced with high level indicative costs.

The building costs and rates applied within the estimate are established from [redacted] extensive database along with their knowledge & experience within the residential market for the various residential unit types and ancillary / section 106 related buildings. The indicative blended rates have been assessed based on other projects / developments, recent tenders, benchmarked information, market tests for similar building types, of comparable quality and specification, assuming an array of contractors (form volume house builders to developer led residential builders).

The measurement of the infrastructure works has been based on the current design concept with the pricing / rates used being informed by the extensive knowledge and experience within [redacted] based on similar comparable schemes, recent tenders, market tests, and where necessary from limited engagement with contractors / specialists to ensure that allowances are reflective of the work envisaged. Certain areas will need extensive design input going forward to establish the final solution and therefore at this stage provisional allowances have been included which will be reviewed and updated in time.

The estimate identifies the residential housing under the density headings identified within the URBED schedules which in turn identifies the building height in ranges. The detail within this high level estimate will be expanded when the detailed design information becomes available. This document will enable costs and design to be monitored and managed within cost constraints for the identified scope.

The detail of the built form at the present time has not been designed, however as a general rule it has been assumed that any building under 4-storeys high will be o loadbearing wall construction build off reinforced concrete strip footings / raft slab. Whereas any building of 5-storeys or more will be built of a simple frame construction off reinforced concrete pads (only being piled if necessary). There are no basements to any of the buildings.

The base build residential construction cost has been enhanced for various client's aspirations for the development, namely a degree of passivhaus low energy / low carbon design construction,

sustainability, SUDs, etc. in order to make this an exemplary development on the outskirts of the of Cambridge.

All other ancillary and associated building (namely commercial, retail, car parking barns and schools, social buildings) have been likewise priced based on current design concepts and experience knowledge on similar schemes.

Once the design code has been established, detailed costs plans for the key building designs will be carried out to inform the rates used. These working documents will be constantly under review as the design progresses, allowing the measures to be expanded in line with the detail provided. Costs can be refined for individual plot specific designs and specifications as they become available, and provide a based for value engineering exercised as and when necessary.

Pricing of the associated infrastructure has been checked and benchmarked against relevant work carried out on other projects within the office where possible. Where such comparisons are not possible, engagement and advice from appropriate contractors has been sort. This process is in the early stages of what will be an ongoing process throughout the design stage and until such time as a contractor has been appointed. This is to ensure that not only costs are appropriate but also that the proposed construction type and methods adopted are relevant to provide the most efficient and economical design solution.

Contractor and specialist sub-contractor engagement regarding methods, programme and cost will become more involved as the design progresses and becomes more detailed, being refined as necessary. Due to time constrains only, limited contact has been made with the key utility provides in the Cambridge area and their feedback is currently awaiting, which will be checked against the current allowances. In the absence of such information allowances are based on experienced assessment of loadings and costs in conjunction with [redacted].

At the present time the following key risk areas have been identified, which will be reviewed and cost checked in the future with the necessary specialists and design input to mitigate risks and unknown cost exposure.

Details design implications on the residential building costs for passivhaus aspirations.

Implications on the design & methods of working for foundations and external elevations adjacent to:

An operating railway; and

the A14 Highway.

Removal of the overhead cables and pylons by burying the cables underground.

Relocation of the mobile phone mast.

Implications on the design & methods of working for bridging over adjacent:

a network rail line; and

the A14 Highway.

Provisional allowances for statutory authority work relating to:

incoming service provision; and

reinforcement to the local off-site infrastructure.

An overall contingency of [redacted] is included in the order of cost estimate and the development appraisal which is considered appropriate based on our understanding of the specific site issues and based on our experience with other development masterplans.

The basis of the scope of the CNFE masterplan scheme is included in the Scheme Key Assumptions Document included in Appendix B.

[redacted]

Please provide a detailed cost plan for the scheme proposed to be fully or part funded by HIF.

[redacted]

Please provide detail on how the land cost included in your scheme costs have been arrived at and the basis of this assumption (if you have included these costs in either your infrastructure or housing costs)

Land costs for the relocation of the CWRC

For the relocation of the CWRC, a Development Consent Order (DCO) (See Q5.4.1.) will be required to provided the necessary land acquisition powers, planning permission and other consents necessary for the construction and operation of the relocation CWRC. For the purposes of the acquisition of land and rights, we have assumed the DCO will allow the use of the compulsory purchase powers which are contained in the Water Industry Act 1991 (as amended) and therefore. This combination of powers are available to Anglian Water for the purpose of its role as a statutory waste water undertaker. If the Planning Application/CPO consenting route is used, the same powers would be available and so the compensation payable would be the same.

The estimates for land compensation have been arrived at by applying the provisions of the various compulsory purchase statutes, relevant regulars and case law. There are two broad elements to the compensation/scheme costs. First, the acquisition of rights for the tunnel from the existing CWRC to the site of the relocated CWRC. These costs are based on a standard rate per meter of tunnel. Secondly, the cost of acquiring land for the relocated CWRC. These costs are based on a rate per acre/hectare for the existing use of the land in the "no scheme world" (ignoring the end user of the land or the reason for its acquisition). In addition, disturbance costs incurred by the claimant would be payable but are unlikely to be material and so have not been included.

Land costs for delivery of the new housing scheme

The land costs for the new housing scheme have been calculated on a residual basis in the appraisal, which is included in Appendix T. The appraisal calculates the gross development value and then subtracts from this the costs of the development (including finance and developers profit), to give the residual land value. Further detail on the individual elements are included below.

Gross Development Value

Detailed commentary on the GDV is included in section 6.3.3. Capital values have been applied to the residential on a per sq ft capital value basis, to give a total value for this element. For the commercial, a rent and yield have been applied to each element and the gross value discounted to allow for purchaser's costs. The sum of all the capital values for the individual elements produces the gross development value.

Development Costs

The development costs are formed of the sum of the following items.

Construction costs - these have been taken from the Faithful+Gould order of cost estimate for the CNFE development that is included in Appendix S. Contingency of [redacted] has been added.

Professional fees - these are the consultants fees incurred during the life of the project. Within the appraisal, these have been calculated in two ways. Professional fees associated with the on-plot development have been calculated at [redacted] of total construction cost (excluding contingency, site wide costs and S106 Transport Contribution), a level that is in line with the market norm for a house builder. Professional fees associated with the infrastructure provision have been calculated at [redacted] of the site wide costs.

Letting and Sales Costs - these have been included in line with the market rate.

Finance Costs - interest has been applied to the development costs at a rate of [redacted] in line with the current market.

Developers Profit

Developer profit of [redacted] of GDV has been allowed. This is at the lower end of the [redacted] profit on GDV for a market normal profit margin on a development of this size and risk.

The residual land value for the total site is then created by subtracting the development costs and development profit from the gross development value.

These land values are forecasted residual land values based on the information inputted into the appraisal. If values were to rise and costs remained the same then the land value would also rise, and vice versa

Please attach any evidence to support how the land cost has been assumed

[redacted]

Funding and Financing Sources

Have you applied for or received, other public funding or financing for the scheme?

No

What are the overall funding sources for the infrastructure scheme?

[redacted]

What is the proposed funding and financing strategy for the infrastructure scheme? If funding sources have not been secured you should also provide commentary of how this is expected to be secured and progress against this - please reference the above table in your answer

The infrastructure scheme (Relocation of the CWRC) would be 100% funded by HIF (as per 6.1.2)

No attachments

What are the overall funding sources for the housing scheme (excluding this bid)?

Description	Source	Total amount	Amount secured	[redacted] secure
Funded by a combination of debt and equity	Private Sector (Developer)	[redacted]	£0	[redacted]

What is the proposed funding and financing strategy for the housing scheme? If funding sources have not been secured you should also provide commentary of how this is expected to be secured and progress against this - please reference the above table in your answer

Planning and Promotion Funding

The initial project set-up, conception, and engagement has been funded using Cambridge Council and Anglian Water equity. As of August 2018, the City Council and Anglian Water Group entered a

Letter of Intent with our chosen Master Developer U+I group. U+I is now funding all the project promotion, planning, design, due diligence and engagement works, anticipated to be in the order of [redacted]

Infrastructure Funding

U+I have committed up [redacted] for some of the seed infrastructure costs.

Early discussions have taken place with Homes England about the potential of accessing central Government funding, such as the Home Building Fund, to deliver some of the costly up-front infrastructure. Again, the extent of this source of funding is not known but we have assumed [redacted] above.

Alternatively, or additionally, funding via the Public Works Loan Board could potentially be utilised to fund some of the infrastructure.

We have assumed [redacted] above. There is also the potential to approach the private infrastructure funding market although the interest/coupons would likely be much higher.

Given the seed infrastructure funding has been guaranteed by U+I there is also the potential to package some of the secondary infrastructure in the disposal parcels -- so it is funded by the plot developers. This could be the optimum solution if some larger parcels are funded by institutions with a relatively low cost of capital.

Direct Housing/Construction Funding

Under the Master Development Agreement, Cambridge City Council has reserved the right to purchase or directly deliver the affordable housing elements of the scheme. There has not been a decision yet regarding the extent to which the Council wished to invest so we have assumed in the above table. This source of funding is not critical to delivery of housing and the market would easily be able to fill any shortfall.

The Council has also reserved the right under the MDA to potentially invest in income producing assets within the scheme. Again, a decision over the type and scale of this investment has not yet been made but we have assumed Public Works Loan Board borrowing of [redacted] could be utilised to deliver a gateway Build to Rent development to be retained by the Council.

The private sector, via developers, is expected to fund the vast majority of the direct housing delivery. The MDA caters for plot/parcel sales on the open market to third parties. Parcel developers will likely be Housing Associations, Regional Housebuilders, National Housebuilders, Regeneration companies, Institutional investors, Build to Rent specialists, REITs, and potentially Cambridge colleges.

Initial market testing has been undertaken and due to the supply constraints, demographics, growth potential , enquiries/demand, and strong fundamentals seen in Cambridge (as discussed in the market commentary) demand is expected to be strong for all tenures. Build to rent, affordable housing and homes for employees of the adjacent science and business parks is anticipated as being very strong.

Early discussions with Addenbrookes Hospital about key-worker housing are also ongoing but we have not factored this into the above table, as it is too early for this to be confirmed.

No attachments

Gross Development Value

How much is the assumed Gross Development Value (GDV) for the scheme?

[redacted]

Please provide a breakdown of the assumed GDV of the scheme in relation to the below:

Private sale	[redacted]
Rent income	[redacted]
Affordable sales Income	[redacted]
Commercial Income	[redacted]
Other	[redacted]

Please provide a summary evidencing how you have assumed the GDV subject to this bid

Our focus is on producing a scheme which successfully delivers a series of new neighbourhoods and houses in northern Cambridge. Our financial assumptions are robust and deliverable and have been coordinated in partnership with a full professional team, both on the commercial and technical/ construction side. We have a full construction cost plan, provided by our cost consultants Faithful+Gould, which is discussed in detail elsewhere with this HIF submission. We also have a full series of scheme drawings, including those depicting density, massing and mix, which are included in Section 1 within the submission.

In assessing the Gross Development Value, we have taken significant and detailed advice from our commercial consultants, Savills, from both their London HQ and regional Cambridge office to ensure the accuracy of inputs. We have also reviewed various market commentary from other commercial consultants in order to ensure the advice provided is in line with market expectations.

The total GDV for the entire housing scheme (sites 1A, 1B, 2A, 2B, 2C) is [redacted] The total GDV for site 1 in isolation (the core site) is [redacted]

Private residential

In terms of value per sq ft, the advice we have received is that Cambridge behaves much more like London than the rest of the East of England and has seen the same levels of rapid growth since the credit crunch. Private residential values are the equivalent of London Zone 2 locations at £600-650 psf. House price averages in Cambridge are about £425,000.

Current sales of new build stock in Cambridge are concentrated at the top end of the market in terms of quality. Given the quality of accommodation that will be provided at CNFE, the appraisal is assuming an initial rate (before growth is applied) of between £570-620 psf for the private residential accommodation, which gives an average blended unit sale price (after growth) for the private residential of £550,000.

Athena, the first phase of open market housing in North West Cambridge, is of the best comparable schemes for CNFE. This scheme is the same distance from Cambridge City Centre (albeit with worse transport links given a lack of railway station). Sold prices here are averaging £703 psf. The CNFE

Market Analysis included in Appendix N contains details of the sold and reserved prices at Athena. Darwin Green is another large development of 1,780 homes located in North West Cambridge. Apartments at Darwin Green are on the market at over £600 psf. Appendix N contains details of the prices.

We estimate that CNFE should achieve values in the region of both Athena and Darwin Green, as CNFE will have much better transport links, attractive local amenity provision, and direct infrastructure investment. As such, initial sales rates of£570-620 psf have been applied to give a total GDV for the private residential of [redacted] on the core sites (1A, 1B) and [redacted] across the entire housing scheme (1A, 1B, 2A, 2B, 2C).

Private rented sector

A significant amount of the housing at CNFE will be in the private rented sector. Savills have advised that the average rental for a two bed is approximately £1,250 per month in the city. Taking a yield of 3.5% and capitalising this gives a gross capital value of £571 psf, assuming a 750 sq ft two bed apartment.

Within the CNFE GDV calculations, we have assumed a prudent initial capital value of £495 psf for the PRS accommodation. This is for accommodation provided on an institutional basis and that is professionally and holistically managed.

Affordable housing

Given the level of affordable housing being provided at CNFE, we have been advised by Savills that a rate for affordable (for sale) housing should be applied at 65% of the open market value of the private accommodation. For the affordable (for rent) housing, advice was given that this rate should be applied at 35% of the open market value of the private residential.

These have been taken as being in line with those values achieved at Great Kneighton, an urban extension to the south of Cambridge which provided 40% affordable housing, in line with what is being proposed at CNFE.

Commercial - offices and retail

Comparable evidence has been taken from recent lettings undertaken on the Maurice Wilkes building (total 67,207 sq ft) on the St John's innovation Park -- north east of Cambridge city centre and within close proximity of CNFE. These comparables are included in Appendix N and show a rent of £33 psf.

CNFE will be a superior product than anything previously provided in the immediate surrounds, and as such we have adopted a rent of £36 psf on the office lettings, which has been capitalised at a yield of 5.75% with an incentive peri od of 9 months, in fine with commercial advice.

Additionally, we understand that Bidwells are marketing Plots 22 -- 25 at the Cambridge Science Park (opposite the St Johns Innovation Park) and are guiding £36.50 psf, which demonstrates the market for quality new build office accommodation.

Savills has advised on the retail front that this should be appraised at an initial rate of £18 psf, capitalising at the same rate of 5.75% and including an incentive period of 9 months.

Commercial -- hotel

The appraisal of the hotel has been based off recent Cambridge assessments of a 130-bedroom budget hotel (a standard similar to that of Premier Inn, Ibis, Travelodge). When assessing these options, an initial market rent of £6,000 per bed (£780,000 per annum) is achievable, which would be capitalised in the current market at 4.75%.

A 167-bed hotel is included in Neighbourhood 4 in line with this rate at £6,000 per bed (assuming a 4* hotel) capitalised at a yield of 4.75%.

Car parking

We have been advised to include car parking at an initial capital value of £20,000 per space. This would be charged on top of the residential prices and the car parking spaces would be provided in one of the various car barns that are being provided on site.

Purchaser's costs

Purchaser's costs have been included on the commercial element of the scheme at 6.8% as is standard within the market.

Growth

Savills undertake assessments of capital value growth within the market and use market knowledge and analysis to forecast growth assumptions within the South East property market. The findings of this work are published in the 'Annual Forecasts Publication' which is published by the London based research team.

This year's publication demonstrates an expected growth rate between 2.0% and 2.5% from 2019 to 2023 in both the East of England and South East. Compound growth over this five-year period is forecast to be 9.3%. Taking this advice, a growth rate at the lower end of this prediction has been adopted, at 2.0%, and applied to all of the initial capital values inputted into the appraisal. This has been applied from day 1 within the cashflow and produces varied sales rates for the various elements depending on when the different elements come to the market.

[redacted] [redacted]

[redacted] [redacted]

Please provide a cashflow for both the infra structure and the overall development or housing scheme (if available). Please provide details on any growth and inflation assumptions made

[redacted] [redacted]

[redacted] [redacted]

Recovery

Do you aim to recover any of the funding (to be retained locally)?

Yes

Please provide assumed profile of recovery

Up to 2020	£0
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

How will the funding be recovered?

We share the aspirations of Homes England to establish a Local Recycling Fund (LRF) to promote and accelerate housing delivery across the CPCA area, leveraging the value created across the CNF AAP area, by the relocation of the CWRC, as a springboard and seed capital.

At this early stage we are exploring two possible models:

To use the normal CIL/Section106 mechanism, that conventionally apportions infrastructure costs between all landowners/developers across an AAP area. Our intention would be to include a proportion of the relocation costs, avoiding any disincentive to bring forward the desired overarching outcomes. We estimate a figure of [redacted] could be raised in this manner to be spread over the life of the CNF AAP area, payable on occupation of future residential and commercial development. This model will need to be developed and tested during the emerging AAP process.

To use a proportion of any real uplift in net proceeds from the ultimate plot sales on the CNFE core site. An increase of 5% in land values, over the current base residual viability appraisal of [redacted] could produce a similar amount.

At this stage it is too early to profile any estimated amounts to any degree of accuracy so identifying possible sites for receipt of the funds is difficult, but following discussion with CPCA colleagues, we would suggest that possible beneficiaries might include new garden communities e.g. Wisbech or the proposed CAMM (Cambridge Metro) project.

How do you intend to use recycling to support future housing delivery in your area?

At this stage it is too early to profile any estimated amounts to any degree of accuracy so identifying possible sites for receipt of the funds is difficult, but following discussion with CPCA colleagues, we would suggest that possible beneficiaries might include new garden communities e.g. Wisbech or the proposed CAMM (Cambridge Metro) project.

Additional information

If you have any further information to support the Financial Case for your project, which has not already been captured in the above, please include this here

The list below clarifies the additional information that is referenced in our responses to Section 6 above:

[redacted]

[redacted]	[redacted]
[redacted]	[redacted]

Management Case

Project Dependencies

Description	Critical	Outside of direct control
Supply chain engagement Outline Plan: To use their framework partner @One Alliance and its supply chain to deliver the project within overarching programme governance	Yes	Yes
Secure HIF grant. Outline Plan: Submit a compelling business case	Yes	Yes
Confirm automatic status of CWRC relocation as an NSIP. Outline Plan: Submit a compelling case to PINS.	Yes	Yes
Secure NSIP status for the project through Section 35 should the need arise. Outline Plan: Submit a credible application to the Secretary of State	Yes	Yes
DCO confirmation. Outline Plan: Submit a high quality DCO application.	Yes	Yes
Planning permission/CPO route (if automatic NSIP status is not confirmed or Section 35 not approved) . Outline Plan: Submit a robust planning application and justification for the CPO.	Yes	Yes
Vacant Possession . Outline Plan: The Council and Anglian Water will provide access to U+I to undertake intrusive site investigations to inform the remediation strategy and the development of the Environmental Impact Assessment. Early access for intrusive investigation s will be agreed in advance of vacant possession. The vacant possession dates are as follows : The core site will be released for re-development in 3 parts: -Phased vacant possession of Cambridge City Council land will commence [redacted] -10% of Anglian water land can be released 18 months ahead of completion of decommissioning period in [redacted] 90% balance of Anglian Water	Yes	No
Environmental Impact Assessment. Outline Plan: The Council will work with U+I to screen the requirements for an EIA with the local planning authority, Cambridge City Council. U+I will make an EIA screening request at an early stage in the project to inform project strategy and programme. It is expected that the local planning authority will confirm a positive screening opinion and that an EIA will be required. The scope of the EIA will be agreed early and all project timeline implications including required geotechnical investigations, ecological surveys, technical studies. Environmental Statement (ES) preparation, and the planning determination period, are currently allowed for in the target programme . The EIA activities across the CNFE core site are currently scheduled to take place between EIA scoping in [redacted] through to planning application with EIA [redacted]	Yes	No
Decommissioning of the Anglian Water's existing water recycling centre .Outline Plan: Major land owner Anglian Water will commence the decommissioning of their existing water recycling centre in following completion of their relocation to a new site. The decommissioning period will take 12 months during which the Master Developer will have access to undertake elements of site preparation. Vacant possession of the remainder of Anglian Waters site will take place in [redacted]	Yes	No

Delivery of strategic infrastructure. Outline Plan: All strategic infrastructure outside of the development plots (site preparation and remediation, primary roads, utility distribution, highway junction improvements, green infrastructure and public realm) will be delivered in phases reflecting the site vacant possession dates. The completion of this strategic infrastructure will be aligned with the subsequent development of the housing plots.	Yes	No
Procurement of neighbourhood plot dev elopers. Outline Plan: A delivery and marketing strategy will be agreed so that each land parcel is brought to market at the optimum time with an emphasis on place making and speed of delivery . This will be aligned with planning obligations, infrastructure delivery, and market conditions at the time.	Yes	No
Alignment with the evolving Area Action Plan (AAP) for the wider CNFE area Outline Plan: The Greater Cambridge Planning Services team are working closely with U+I and keeping them informed of AAP development. The hybrid planning application will (within reason) reflect the evolving AAP but the direction of the AAP is outside the control of the Council (and JV) as landowners.	Yes	Yes
Hybrid planning consent. Outline Plan: U+I are appointed to prepare a hybrid planning application for the CNFE core site (sites 1A and 1B). The hybrid application will seek consent for outline planning on the housing and mixed-use development plots while seeking detailed planning consent for all strategic infrastructure to enable the development plots. The hybrid application is planned for submission in [redacted] with determination including allowance for the risk of a judicial review in [redacted]. This period and decision is subject to Greater Cambridge Planning Services and other planning stakeholder and outs ide the control of the land owners.	Yes	Yes
Diversion of the overhead HV power cables. Outline Plan: We will aim to procure UK Power Networks to divert the existing overhead 132KV power cables as soon as possible in the site preparation stage. The earliest this work can commence will be during the decommission period of the existing CWRC by Anglian Water which is planned [redacted]. This is subject to negotiations with UKPN and Anglian Water and is outside the control of the land owners.	Yes	Yes

Project governance, organisation structure and roles

Please outline the authority' s approach to governance and oversight of the delivery of the proposal. This should include how you will work with any other key delivery partners (such as other landowners)

Programme Governance and Management for such a complex programme needs to be robust but agile, and is being developed in line with good practice models such as Managing Successful Programmes (MSP)

Managing a programme successfully is based on three core concepts:

- Principles. They are the common factors that underpin the success of any transformational change.
- Governance Themes. These define an organisation's approach to programme management. They allow an organisation to put in place the night leadership, delivery team, organisation structures and controls, giving the best chance for success.
- Trans formational Flow. This provides a route through the lifecycle of a programme from its conception through to the delivery of the new capability, outcomes and benefits.

An example model is provided below . An example model is provided in Appendix W1.

The overarching programme governance and management for this programme is set with in a good practice framework related to the programme. The governance structure can be found below. The governance structure can be found in Appendix W2

Programme Management

A programme management office will act as the vehicle for overarching management of the programme in line with the diagram above.

The programme will be overseen by a Programme Board, comprising representatives from Anglian Water and Cambridge City Council (the core site landowners) and U+I (the master developer). The board will lead delivery of the two core projects relating i) to the relocation of the CWRC and ii) the master development of the core site.

The programme has an appointed Senior Owner (SRO) Fiona Bryant, Cambridge City Council Strategic Director. John Corrie, Group Director at Anglian Water is the Anglian Water lead for the programme.

It will have advisory membership from Stephen Kelly, Director of Planning and Economic Development for the Greater Cambridge Planning Service, who is the Senior Owner (SRO) for the independent Area Action plan process and through this will help inform the timescales for the delivery of the AAP by the Local Planning Authority and ensure that these are coordinated with the timescale of the programme .

The Programme Board will report as required to the Anglian Water Board and to Cambridge City Council's constitutional decision-making processes for corporate strategy, major decisions and internal reporting relating to the land ownership of the core site.

A Special Purpose Joint Venture Vehicle (SPV) will form the contractual body for both projects (the CWRC relocation project and the core site development project). The SPV will be established as an LLP, in line with legal guidance on best models. It is proposed that Cambridge City Council will act as the Accountable Body for the receipt of HIF and other eternal funding for the programme.

The appointed programme manager is Rachel Underwood of Optimum Consulting and will be dedicated to the operational and strategic running of the programme, reporting to the Programme Board.

The programme will establish two key stakeholder review groups comprising Members and Senior officers from the key partner local authorities , including the CPCA, GCP and County Council, for example, to keep them closely informed and engaged on the programme and to obtain relevant input from an early stage and throughout the project. Other relevant stakeholder forums will also be

formed where it is not possible or appropriate to share forum meetings with the LPA, as well as wider stakeholder and comm unity engagement at the appropriate time.

Project Management

As set out above, the programme will deliver two key projects . It will also feed into the Area Action plan to be independently developed by the Local Planning Authority.

The two key projects are:

1. The Relocation Project -- relocation of the CWRC

Anglian Water will lead the project. Project management and delivery will be provided through Anglian Water's framework agreement.

2.The Development Project -- master development of the core site post relocation of the CWRC

The landowners have appointed U+I as the master developer for the core site through an OJEU tender process . The appointed project managers are [redacted]. The project team will be working with Anglian Water, City Council teams, the Local Planning Authority and key stakeholders and partners to develop the project.

The appointed project team is as follows:

- U+I with TOWN development management and overall delivery responsibility under the MDA;
- [redacted] - masterplan designer responsible for ensuring the overall masterplan design reflects the objectives and aligns with the evolving AAP;
- [redacted] - town planning advisor responsible for ensuring the planning strategy is delivered in accordance with nation al and local planning;
- [redacted] - project manager and cost manager responsible for administering the project, programme and costs in line with the project execution plan;
- responsible for the transport planning, civil engineering and utilities strategy, design and masterplan;

Max Fordham -- responsible for the energy and sustainability strategy, design and masterplan.

The workstreams will cover a comprehensive set of themes required to bring forward a project of this scale, including planning, delivery, design, transport, community development, etc. It will link in with the relevant service teams in the City Council, partner authorities and other partners and stakeholders to ensure that the project is embedded in and informed by relevant plans.

Planning Frameworks

The Local Planning Authority and joint Cambridge City and South Cambridgeshire shared planning service (Greater Cambridge Planning Service) will lead the development of the Area Action Plan spanning the whole CNF area. The LPA's statutory role requires it to maintain an independent role in preparing the AAP , working with all landowners, businesses and community stakeholders across the AAP area. The programme teams will feed into this process.

Monitoring and Reporting and Assurance

The programme (and within it both of the projects) will be monitored by the Programme Board, with respective project teams reporting to the Programme Board via the Programme Manager using the

City Council's Enterprise System tool and templates. Highlight/exception reporting will also be circulated to the City Council's Corporate Programme Office to ensure wider dependencies and quality assurance requirements remain aligned.

The authority will utilise the City Council's Corporate Programme Office to provide an overarching stewardship of the scheme to ensure the successful delivery of the project strategy and core objectives.

The authority's approach to governance and oversight is illustrated through the following organogram structures:

HIF Delivery Governance and Oversight Structure

The organogram below shows the governance for the HF funding. The organogram can be found in Appendix W3.

Governance and oversight of the HF funding for the relocation project

A Funding Agreement will be entered into, between Homes England and Cambridge City Council (as applicant).

Head s of Terms for a Joint Venture have been agreed between Cambridge City Council and Anglian Water (as joint venture landowners). This will be established as an LLP as described above.

A tripartite agreement with associated contract will be entered into between Cambridge City Council, Anglian Water and their framework contractor to deliver the new water recycling plant. This will be on the basis of an agreed programme and fixed price to ensure the plant is delivered on time and on budget and with appropriate risk transfer to the end contractor.

The SPV will have oversight of the relocation project and will monitor the delivery of the project by the contractor. As defined milestones are met and signed off by the SPV in its oversight role, with appropriate assurance , funding will be drawn down by Cambridge City Council from Homes England and paid to the contractor in accordance with a pre-agreed schedule. Contractual framework for the development project

A Master Development Agreement has been agreed and will be entered into between the SPV and the Master Developer (U+I).

The Master Developer will appoint the professional and consultant team responsible for bringing forward the development project on the basis of deed s of appointment.

The Master Development will enter into construction contracts with contractors for the infrastructure packages to enable servicing of the site.

The SPV will enter into Build Licences and Sales Agreements between the landowning JV and the individual plot developers.

Planning obligation Agreements will be entered into between the Master Developer and Cambridge City Council planning / other government bodies for the delivery of Section 106 social or Section 278 transport infrastructure.

Agreements will be entered into between the Master Developer and Statutory Undertakers for the diversion and delivery of utility supplies.

Agreements will be entered into between the Master Dev eloper and government bodies (Highways England and Network Rail) for the delivery of improved connectivity inks across the A14 trunk road and railway respectively.

Please provide details of the authority's resourcing for the proposal

Resourcing will be structured based on the overarching programme, CWRC relocation and the masterplan development scheme.

The programme will be overseen by a Programme Board, comprising representatives from Anglian Water and Cambridge City Council (the core site landowners) and U+I (the master developer). The board will lead delivery of the two core projects relating i) to the relocation of the CWRC and ii) the CNFE development of the core site.

Overarching Programme

- Cambridge City Council -- HF grant applicant and Joint Venture Partner
- Anglian Water -- HF grant applicant and Joint Venture Partner
- Optimum Consulting -- Project Manager
- Eversheds Suthlands & Freeths - Legal Advisor

CWRC Relocation

- Anglian Water -- DCO applicant, Joint Venture Partner
- Savills -- Advisor to Anglian Water on strategy. planning and DCO
- @One Alliance -- design and construction delivery partner
- @One Alliance delivery supply chain -- designers and contractors
- Other advisers will be appointed on the confirmation of the HF grant
- Eversheds Suthlands & Freeths - Legal Advisor

CNFE core site development

- Cambridge City Council -- HIF grant applicant, JV Partner and landowner
- -Anglian Water -- Joint Venture Partner and landowner
- -U+1-- the JV partnership's Master Developer

[redacted]

Please note that the team will be expanded with the appointment of further design consultants, specialist contractors and plot developers to reflect the developing CNFE masterplan.

Appendix X demonstrates the current extent of resourcing that Cambridge City Council and Anglian Water has already engaged to support the relocation of Anglian Water's CWRC and the new housing masterplan.

Please attach an organogram depicting the governance structure and/or roles and responsibilities within the authority

File name	Description
W4-Cambridge Council City governance structure.pdf	Cambridge City Council Governance Structure

Project management arrangements and project plan

Please provide details of the overall project management delivery arrangements for the project, including any challenges or constraints to delivery of the project

Project management delivery arrangements will flow from the governance and oversight arrangements described in section 7.2.

- The Corporate Programme Management Office (CPMO) will be responsible to the Programme Board for both the core projects:

relocation of the CWRC relocation and the master development of the core site. The CPMO is described in section 7.2.1.

- There will be an overarching Project Execution Plan (PEP) covering both project s, acting as the principal framework through which the PMO establishes, monitors and manages delivery arrangements for projects.
- There will be bespoke project management delivery arrangements through a Project Office (PO) for each of the relocation and development projects.

Project Execution Plan (PEP)

A PEP will be prepared by the CPMO to define and document how the projects will be set up, managed and successfully delivered. It will govern the strategy, organisational structure, roles and responsibilities, control procedures, communication protocols for the projects. It will serve as a primary reference document and roadmap for all parties involved in the projects, with the information provided in a concise and, where appropriate, diagrammatic way. It will define the key interfaces and critical dependencies between the relocation and development projects and how they are managed.

The PEP will be approved by the Programme Board taking on board the requirements of Homes England, Anglian Water and other key partners, will be maintained as a 'live' document to reflect evolving requirements, and will be subject to change management (changes to the controlled document will only be undertaken once approved by the Programme Board). Distribution of the PEP will be tightly controlled.

Subject to agreement by the Programme Board, the PEP will cover:

- Project vision, mission statement, objectives, critical success factors and project history)
- Team (team structure and organogram, directory and contact details, roles and responsibilities, RACI, project stakeholders)

- Controls and governance (project gateways, submissions procedures, approvals process, change control process)
- Communications plan (Management information reporting requirements and timings, meeting schedules, information sharing)
- Programme management (key milestones, strategic programme, detailed workstream programmes)
- Quality management (Project Quality Plan, benchmarks, inspections, audits)
- Design management (Design benchmarks, design responsibilities matrix submissions procedures, approvals process, gateway approvals, inspections)
- Procurement management (procurement strategy, best value, key performance indicators, local employment opportunities, workstreams, contract work packages, contract administration)
- Financial management (budget approvals, cost reporting requirements)
- Risk management (identification, assessment, mitigation and reporting of risk)
- Sustainability management (standards, certification, inspections, approvals)
- Health, safety and environment (health and safety plan, environmental protection measures, eco logical and biodiversity enhancement)

Project management delivery arrangements

The relocation and development projects will each have a Project Office (PO). The PO' s role is to act as stewards ensuring that the project is carried out in accordance with PEP.

The PO has four key outputs:

- PEP - The PO will develop with the CPMO and operate the Project Execution Plan (PEP)
- -Controls and governance -- The PO will detail the process to be followed through the delivery of the scheme -- team role and responsibilities, quality management, strategic schedule, communications plan -- to execute the PEP.
- Project reporting - the PO provides performance reporting to the CPMO to reflect progress to date and performance look- ahead against the critical success factors and the set project requirements (quality, schedule, financial, sustainability, health and safety, environmental).
- Contract management - the PO administers procurement, contract administration and performance management of all supply chain contracts for all workstreams and works packages (consultants, contractors, suppliers, plot developers).

Relocation project

For the relocation project, the PO will be established by Anglian Water and its retained team in the @One Alliance. They will select a dedicated project team on the basis of past experience, proven track record and the skill sets needed to deliver a project of this type and scale. The project team will be underpinned by a supply chain who have specialist skills to deliver the relocation of CWRC

The project team will deliver the project in accordance with the capital delivery process and internal @One Alliance processes and procedures.

Core site development project

Cambridge City Council and Anglian Water have established a partnership and selected their developer partner, U+I, to progress delivery under a Master Development Agreement (MDA), details of which are set out in sections 5.3.2 and 5.5.2. The MDA provides for the Master Developer to establish an expert team to provide the Project Office for the core site redevelopment project.

The following organisations will form the Project Office (PO)y whose function will be to provide the process and governance for scheme delivery:

- U+I's in-house development management and project delivery team
- TOWN (U+I's delivery partner)
- Core design group (the appointed masterplan design custodians [redacted]); and
- [redacted] (U+I's appointed team of project managers, cost managers, risk managers and health and safety advisors).

Challenges and constraints

For a more detailed list of the key project dependencies, please see the response to question 7.1.1 and for a more detailed list of the current risks, question 7.7.1.

The key challenges and constraints to the project management delivery arrangements are as follows:

- Integration of the relocation and development projects at PEP level. The CPMO will play an important early role in bringing together the two POs and identifying synergies and efficiencies in the programme and project management of the two projects.
- Technical interface between relocation and development projects -- for example to obtain a full understanding of all existing ground conditions for the development site. The CPMO will need to establish a strategy for early access onto the site in order to undertake intrusive site investigations and progress the Environmental impact Assessment for the development project.
- Sequencing the redevelopment project with the key milestones in (i) the relocation project and (ii) the AAP. The CPMO will need to maintain a dynamic programme and critical path analysis across both projects and the plan-making process to optimise the sequencing of milestones in each project.
- Supply chain capacity and capability -- ensuring supply chain partners (consultants, contractors, suppliers and plot developers) have the expertise and capacity to deliver the standards and objective s set by the Programme Board. A key aspect of the POs' role will be to optimise the procurement strategy to deliver performance, including by the prequalification and close management of supply chain partners throughout the delivery process.

Please summarise your project delivery plan to deliver the infrastructure, this should include your anticipated land ownership / control strategy

The two projects - relocation of the CWRC and development of the core site -- will have separate but aligned project delivery plans as follows.

Project delivery plan for relocation of the CWRC

Once HIF funding has been confirmed , Cambridge City Council will enter into a tripartite contract with Anglian Water and its delivery contractor which will require the delivery contractor to build the relocated CW RC on land acquired through the DCO or CPO processes (see section 5.4.1 for further detail on the strategy to acquire land for the new CWRC).

Anglian Water will specify the requirements for the new CW RC, for approval through the Programme Board, and will oversee the delivery of it on behalf of Cambridge City Council. The tripartite contract will procure design and delivery of the relocated CWRC in accordance with the PEP. The design of the relocated CWRC will follow Anglian Water's design process described in section 5.5.1. The delivery team will be led by Cambridge City Council and Anglian Water. @One Alliance will be appointed to manage delivery of the relocated CWRC, supported by a team of professional advisers including lawyers, surveyors and other property advisers, town and country planners, consulting engineers and stakeholder engagement specialists.

The main areas of work for the relocation of the CWRC are

- the tunnels acting as conduits for waste water to the relocated CWRC and effluent from it to the receiving water course;
- the water recycling centre; and
- the sludge treatment centre

The construction of the relocated CWRC will be phased for the most efficient delivery of the project, taking into account matters such as logistics, ecological constraints and operational requirements. The management of the construction phase will be undertaken by the @One Alliance to ensure health and safety compliance and the most efficient delivery of the project

The land ownership/control strategy will depend on whether a DCO or a planning permission/ CPO approach is used to obtain the required land and rights in land for the relocated CWR C and its connecting media (see section 7.4.5).

- If the DCO route is used, the land and rights in land will be acquired by using the compulsory purchase powers contained within the DCO. This will provide Anglian Water with the necessary interests in land to enter onto/into land to construct and operate the relocated CWRC.
- If the planning permission/CPO approach is used, the land and rights in land will be acquired by using the compulsory purchase powers contained within the compulsory purchase order which will be applied for once the planning permission has been received. Conformation of that CPO will then provide Anglian Water with the powers necessary to acquire the land and nights in land to construct and operate the relocated CWRC.

Project delivery plan for development of the core site

The new infrastructure for the housing masterplan on the CNFE core site will be delivered under the stewardship of the CPMO, in accordance with the PEP.

Delivery will be led by the Master Developer and its professional team through the Project Office as described in section 7.3.1, in accordance with the Master Developer Agreement and approved Business Plan. This will involve obtaining planning permission and implementing infrastructure. The planning strategy is to develop and submit a hybrid planning application. This will be detailed in respect of the strategic infrastructure works to activate the development plots but will be outlined in respect of the new building development including housing.

The planned infrastructure works can be summarised under 5 broad headings:

- Site Preparation (Infrastructure Packages 1 and 2) - these are the works needed from the exit of Anglian Water and Cambridge City Council's tenants to create the formation levels of the development plots. The works in this category include any decommission and demolition of existing structures, removal of redundant services, diversion of overhead electricity cables, remediation of the site, site re-profiling and creation of an acoustic berm to the boundary with the A14 trunk road.
- Highways and Utilities (Infrastructure Packages 3 and 4) - these are the works needed to form the primary roads, improvements to existing junctions, off-site utility reinforcements, underground multi-service utilities and attenuated drainage. These will be taken up to the edge of new development plots ready for connection by future plot developers
- Green infrastructure (Infrastructure Package 5) - these are the hard and soft landscaping and public realm works outside of the development plots to promote well-being, sustainability and biodiversity.
- Linkages and interventions (Infrastructure Package 6) - this is the formation of improved connections with adjacent sites including link bridges over the railway, over the A14 trunk road and an underpass to Cowley Road. These works will likely be delivered through the relevant Statutory Authority (Highways England, Network Rail and Cambridge City Council respectively).
- Social infrastructure (Infrastructure Package 7) - this is the delivery of 2 new primary schools and a secondary school through planning contribution and Section 106 agreement as part of the planning approvals process. These works will likely be delivered directly by Cambridge City Council.

The design of infrastructure will follow a robust design stage gateway process to provide the design assurance, capture the standards and requirements of all relevant stakeholders, prepare the design information in a timely manner and seek all approvals necessary to achieve best value through the procurement process. The majority of the infrastructure will be design-led by the client's engineering design team with the opportunity for alternative contractor-led solutions being encouraged via the procurement process. Alternative design solutions will be subject to change control and approvals by Programme Board. All technical submissions and detailed design production information from the delivery supply chain will be reviewed for approval prior to proceeding with the works.

The PO will procure and deliver the infrastructure works through the seven infrastructure work packages summarised above. Some may be further split into sub-packages to separate work types . The supply chain will be selected through early prequalification to establish expectations around quality standards, capacity and deliverability. Packages will either be awarded to a single contractor or framework s will be set up with more than one contractor for packages which will be phased to avoid single source supply chain and ensure capacity and commercial risks are mitigated. A framework strategy will apply to roads, utility distribution and green infrastructure packages.

The New Engineering Contract (NEC) contract suite will form the basis of contractor engagement with lump sum pricing being the preferred approach. Designs will be completed and fully coordinated prior to commencement of works to mitigate the risk of cost and schedule overruns. A summary of the infrastructure packages is in the table below. A summary of the infrastructure packages is in Appendix O1.

Infrastructure work packages will need to be phased to reflect the vacant possession allowed by the land owners and earliest access onto the land. While the whole of the CNFE core site is fully within

the ownership and control of Cambridge City Council and Anglian Water, the land is proposed to be released to the Master Developer in two parts, as below, and included in Appendix O3.

Construction management will operate from combined office and welfare facilities under the management of the site-based Project Office. The PO will have representatives based on site to act as guardians of the masterplan and oversee the performance of the infrastructure contractors. This site based PO team will include representatives of the engineering design team and the contracts management team. The PO's contracts management team will make off-site inspections to validate progress during manufacture and off-site assembly in relevant packages.

Please provide details of your project delivery plan to deliver the homes unlocked by the infrastructure. Please detail any expected controls or levers you will put in place to ensure the delivery of housing comes forward on the sites

Project delivery plan to deliver the homes unlocked by the infrastructure

The new housing masterplan on the CNFE core site will be delivered under the stewards hip of the PMO to ensure compliance and delivery in accordance with the requirements and critical success factors set by the Programme Board.

Overarching delivery plan

The overall plan is defined in the PEP which sets the vision, objectives, critical success factors, standards and governance within which the infrastructure is delivered. The PEP is being developed as part of the Business Plan by U+I, and their masterplan delivery team for approval by Cambridge City Council and Anglian Water.

Housing delivery team

The Delivery Partner (U+I) appointed by the JV Partners has appointed a team to act as masterplan guardians who will develop the masterplan for approval and oversee the delivery of the new housing:

- U+I with TOWN - development management and overall delivery responsibility under the MDA masterplan designer responsible for ensuring the overall masterplan design reflects the objectives and aligns with the evolving Area Action Plan (AAP).
- [redacted] - town planning advisor responsible for ensuring the planning strategy is delivered in accordance with national and local planning.
- [redacted] - project manager and cost manager responsible for administering the project, programme and costs in line with the project execution plan.
- [redacted] - responsible for the transport planning, civil engineering, structural engineering and utilities strategy, design and masterplan.
- [redacted] - responsible for the energy and sustainability strategy, MEP design and masterplan.

Further specialists will be appointed by the Programme Management Office as required to progress the masterplan.

Plot development

The masterplan team will enable the development housing plots by delivering the strategic infrastructure and will procure and dispose of the development plots to the plot developers, who will deliver the housing under the stewardship of U+I and the PMO.

Housing neighbourhoods

On the core site, the planned housing will be delivered through 6 neighbourhoods as attached in Appendix Y.

Housing design process

The master developer, U+I, together with their appointed design team will develop the Design Code to be adopted by the plot developers and will develop the masterplan sufficient for securing outline planning permission. The housing masterplan design and management team will follow a robust design stage gateway process to provide the design assurance, capture the standards and requirements of all relevant stakeholders, prepare the design information in a timely manner and seek all approvals necessary to achieve best value through the procurement process.

All necessary standards to comply with the Design Code, with planning requirements and with the Master Development Agreement will be captured in the Plot Disposal Procurement Documents..

Development plot procurement strategy

The PMO propose to procure plot developers for each of the development plots under the 6 main neighbourhoods to reflect the phased vacant possession of the site. Each of the 6 main neighbourhoods will be split into a number of optimised development plots. Input into the final plot disposal strategy and the associated tender and contract documents will be provided by the PMO 's Development Management and Contracts Management team

Plot developers will be selected through early prequalification to ensure alignment with the agreed objectives around quality standards, capacity and deliver ability. Plots will be awarded to the developer providing the most commercially advantageous proposal while ensuring that the quality requirements of the masterplan are maintained intact. Please refer to Appendix Y.

Phased access and sequence of infrastructure works

A further consideration is how the housing development will need to be phased to reflect the vacant possession allowed by the landowners and earliest access onto the land. While the whole of the CNFE core site is fully within the ownership and control of Cambridge City Council and Anglian Water, the land is proposed to be released to the Developer Partner in 2 parts as follows. Please refer to Appendix Y.

Following the phased release and possession of the site areas from the landowners, the site preparation will be undertaken in two phases, the subsequent strategic infrastructure will be delivered in 6 phases to activate the neighbourhood plots. The housing will also be undertaken in 6 phases split into development plots.

Construction phase management

All site activities will operate from combined office and welfare facilities under the management of the site based Programme Management Office. The PMO will have representatives based on site to act as guardians of the masterplan and oversee the performance of the plot developers. This site based PMO team will include representatives of the masterplanning team.

The PMO's masterplanning team will make off-site inspections to validate progress during plot development.

Following the procurement process and during works on site, the PMO contracts management team will undertake the following as part of their administration of the housing plot development:

• oversee the mobilisation of contractors including final security, logistic and methodology checks

- administer design information approvals
- administer change control
- provide the necessary quality inspections and approvals
- undertake health, safety and environmental inspection audits
- oversee all required testing, commissioning of systems (eg drainage attenuation systems, underground community domestic waste storage)
- check all completion documentation is in place
- validate the ownership of all development

Please summarise your maintenance strategy for ongoing costs for the scheme

The infrastructure for CNFE is split into two key elements:

- The relocation of the CWRC.
- Delivery of the new infrastructure for the core site masterplan.

Maintenance strategy for the relocated CWRC

- The maintenance of the relocated CWRC will be in accordance with the asset maintenance regime used by Anglian Water across all its operational sites but tailored to the specific requirements of the operational assets. This places obligations on Anglian Water as part of the regulated funding model overseen by the Office of the Water Regulator (Ofwat). These same obligations would apply to the existing CWRC.

Maintenance strategy for the core site masterplan

The maintenance and management regime for the new estate will be attuned to the developing strategy for infrastructure delivery, plot development and long-term ownership, to deliver resident and visitor enjoyment of the new urban neighbourhood.

The strategy is to ensure all infrastructure and buildings are delivered to the required standards to allow them to be adopted by statutory authorities, managed by appointed management bodies or, in the case of freehold buildings, maintained by their owners. The new scheme assets and their associated maintenance fall into four categories:

Adoptable public infrastructure

This is the infrastructure which will be constructed to adoptable standards and maintained by the statutory authorities. This includes highways, drainage and non-contestable utilities infrastructure and may include major green infrastructure and other public realm.

All highways including primary and secondary roads will adopted and maintained by Cambridge City Council highways. All surface water and foul sewers will be adopted by Anglian Water. Non-contestable utilities infrastructure will be maintained by the relevant network statutory undertakers including UKPN (power supply), Cambridge Water (water supply), Anglian Water (sewers), and BT Openreach (telecoms).

Other public infrastructure

This will include any infrastructure assets which are to be managed by bodies such as 'inset' utilities providers (IDNOs), specialist management entities (e.g. trusts) or a site-wide management company. These assets may include contestable utilities networks, green infrastructure such as trees, neighbourhood parks and habitat areas, and facilities such as car barns and cycle stores and any other non-adoptable assets not specifically demised to individual freehold or leasehold properties. Management activities will be coordinated through an estate management office, operated either by Cambridge City Council or by a private management company. This office will assume responsibility for the long-term maintenance of the public realm and those communal amenities.

Administration of the maintenance delivery will follow good estate management practice and RICS/ ARMA-Q Codes of Practice and Accounting Regulations.

Schools and other community infrastructure

The two primary schools and one secondary school will be delivered through Section 106 Agreements between the JV owners and Cambridge City Council. Schools will be delivered by Cambridgeshire County Council or an academy. Thereafter Cambridge City Council will arrange the maintenance of the schools either directly or through a management company.

Private built assets

These are the buildings and spaces delivered and/or held by developers/investors who will have set up management companies to maintain their freehold assets.

All assets and public realm within the development plots will be subject to maintenance by the landlord developers or the estate management company appointed by the individual plot landlord developers. The development companies retaining the freehold will be obligated to maintain the freehold assets within their plots. Alternatively U+I as master developer will set up the estate management company and obligate the plot developments to be maintained through the central estate management company

Project milestones

Please provide actual or estimated dates for the following infrastructure delivery milestones:

First infrastructure planning permission granted	[redacted]
Last infrastructure planning permission granted	[redacted]
All land assembly completed (if required)	[redacted]

Project infrastructure works started	[redacted]
Project infrastructure works completed	[redacted]

Please provide actual or estimated dates for the following housing delivery milestones:

First residential units commenced	[redacted]
Last residential units commenced	[redacted]
First residential completion	[redacted]
First residential completion	[redacted]

Please attach an outline delivery programme for your proposal and the key milestones required to achieve it

[redacted] [redacted]

[redacted] [redacted]

Please list planning references for the infrastructure works

Anglian Water has received a response to a Pre-Application request to Cambridgeshire County Council, as waste planning authority, in relation to the methodology for the selection of a site for the relocation of CWRC. This is part of the key stakeholder engagement process described in 7.5.1. The County Council would be one of the stakeholders in the Development Consent Order (DCO) or planning application/Compulsory Purchase Order delivery route, and so receiving its comments on the site selection methodology is an important part of the engagement process at this early stage.

The response to the Pre-Application request has been received by Anglian Water, confirming its application of a site area for the relocation site is correct. In addition, a number of comments and suggestions were part of the response. These will be incorporated, where possible and needed, in the final version of the site selection methodology.

The response has been shared with Members of both Cambridge City Council and South Cambridgeshire District Council. In addition, the response has also been shared with Officers of the Joint Planning Service of the two local planning authorities.

Please list all statutory powers or consents required and already obtained to deliver the HIF works

The statutory powers or consents required to deliver the relocation of the Cambridge WRC will include planning permission, compulsory purchase, environmental permits and other consents. The following sets out all of the statutory powers or consents required in relation to the use of the Development Consent Order (DCO) process (automatic and discretionary), and then the use of the Planning Application/Compulsory Purchase Order (PA/CPO) route.

As at the date of submission of this Business Case, Cambridge City Council and Anglian Water believe the relocation if CWRC is automatically a Nationally Significant Infrastructure Project (NSIP), as

defined by the Planning Act 2008. This has been communicated to the Planning Inspectorate and we are awaiting a response.

DCO process (automatic qualification)

If the relocation of the CWRC is deemed to automatically qualify as an NSIP, and so a DCO can be used , the process to apply for, and receive an order will be followed . This is a statutory process and is out in the Planning Act 2008 and administered by the Planning Inspectorate. Once granted, the order will contain all the powers and consents necessary to facilitate the relocation of the CWRC, as listed see below .

DCO process (discretionary qualification)

If the relocation of CWRC is not an automatic NSIP, then Cambridge City Council and South Cambridgeshire District Council, with the support of Anglian Water, will apply to the Secretary of State for Environment, Food and Rural Affairs to ask for the use of the discretion contained in Section 35 of the Planning Act 200 8 to be used . This would deem the project to be an NSIP for the purposes of the DCO process, as described above.

Powers and consents conveyed by a DCO

-Compulsory purchase powers for the acquisition of land and nights in land needed for the relocation of CWRC.

-A deemed planning permission for the structures required for the new CWR C, including any works to highways.

-A consent to discharge effluent into the receiving watercourse . Permits under the Environ mental Protection Regulations.

-Any other consents that might become necessary as the design process progresses prior to the submission of the application for a DCO.

Planning permission/ CPO process

This process beg ins with Cambridge City Council and South Cambridgeshire District Council, as the local authorities, applying for, and receiving. a compulsory purchase order to acquire the land currently being use d for the CWRC. The two councils could also, as the local planning authorities. subject to the statutory requirements, include other land in the Are a Action Plan (AAP) area This CPO would be granted under the Town and Country Planning Act 1990 (as amended) to facilitate the delivery of the CNF AAP

The confirmation of this CPO would require Anglian Water to seek its own compulsory purchase order to acquire land for the relocation of the CWRC itself, and nights to build the connecting tunnels from the interception of the sewerage currently serving CWRC and the conduit(s) to allow effluent to be discharged into the receiving wate r course. This would be done using the powers contained within the Water industry Act 1991 (as amended) , as there would be an operational need to relocate the CWR C as a result of the local planning authority's ability to acquire the current site compulsorily.

Before Anglian Water could apply for a CPO as described in the paragraph above, it would be required to apply for, and receive, a planning permission for the relocation of the CWRC. The

planning application would be to Cambridgeshire County Council in its capacity as Waste Planning Authority, and would be determined under the Town and Country Planning Act 1990 (as amended).

The planning application, and resultant planning permission , would include any works required to highways, and an agreement under Section 278 and/or Section 38 of the Highways Act would be entered into with Cambridges hire County Council in its capacity as the Highway s Authority. Any third party land required for any highway works would be included in the CPO granted to Anglian Water (see above).

Consents for other utilities connections would be provided by the respective services providers using their powers as statutory undertakers.

A consent to discharge effluent from the relocated CWRC into the receiving watercourse would be required from the Environment

Agency. Preliminary discussions with the Environment Agency have begun about this requirement, and these can be progressed once fundi ng has been secured .

Permits under the Environmental Protection Regulations would also be required from the Environment Agency for the relocated

CWRC, including its sludge treatment centre.

Stakeholder management

Please summarise how the key delivery partners will work together effectively

Workstreams for the relocation of the CW RC The key project delivery partners are as follows.

Cambridge City Council as joint applicant (with South Cambridgeshire District Council) of the Section 35 submission to the Secretary of State (if required (see Q7.4.5)).

Anglian Water as the applicant for the DCO (see Q7.4.5), having responsibility to deliver the relocation of the CWRC. Anglian Water's supply chain to deliver the relocation of the CWRC PINS in its role of overseeing the DCO process Cambridges hire County Council and South Cambridgeshire District Council in their role to submit Adequacy of Consultation Statements to the Planning inspect orate as part of the DCO process or Waste Planning Authority for the planning application/ CPO process (see Q7.4.5)

These key delivery partners will work together by ensuring their objectives are aligned and that alignment is review ed on a regular basis to ensure it continues. Each partner will have its own advisers, who will be tasked with working together closely with the advisers to the other delivery partners.

Please refer to the organogram information provided in Appendix W3 which shows how the authority and the partnership will operate.

Pleas e also refer to Appendix AB which shows stakeholder mapping.

Workstreams for the delivery of the new infrastructure for the core site masterplan

- Cambridge City Council (as landowner).

- Cambridge City Council (as planning authority).

- Anglian Water (as landowner).

- U+I (with TOWN) as master developer.

- U+I (as infrastructure delivery partner).

-Third party developers (as neighbourhood plot developers).

There is a complicated web of relationships between the above key delivery partners, and the key to effective relationships is a well thought through and robust governance and oversight structure (detailed in the governance section).

Formal legal agreements between each of the parties including JVs, MDAs. Licences , MOA, cooperation agreements, etc will set out the parameters and expectations for the parties working together and ensure objectives are aligned.

A rigorous sign-off, reporting, and monitoring structure will be included in these documents and policed by the project board.

A Programme Management Office will be set up to assist with the day-to-day issues.

The business plan adopted by the landowners and the master developer under the MDA will set out the requirements for regular board, design, progress, and monitoring meetings. There will also be specific gateway presentations and sign- offs built in through-out the programme.

Wherever possible, the partners will look to deal openly and cooperatively with other partners - and the selection of third-party developers will be decided with this in mind.

As an example of how some of the above have already been put into practice:

-A site study tour has been undertaken by the landowners already to help with vision setting

-A meanwhile-use project is being planned for 2019 where Anglian Water, Cambridge City Council, U+I, the planning authority neighbouring owners and the community will work together and strengthen working relationships prior to the delivery of the long-term project.

-A local landowners forum and political stakeholder's forum has already been established to identify issues and ensure cooperation and coordination.

-In progressing the Area Action Plan, U+I and the wider design team will be available to assist with technical work to ensure quick progress that keeps to programme .

-Disposal structures, design guides, and selection processes to introduce third party parcel developers will be structured to ensure all parties are aligned with the long-term goal is and vision of the project.

Please summarise how you will work with the other key stakeholders to ensure project success (i.e. local residents businesses)

The relocation of the CWRC

Anglian Water recognises that effective and meaningful stakeholder engagement is an integral part of successful project delivery and we are com mitt ed to ensuring that we maintain a transparent approach to engagement.

Stakeholders will be identified , analysed and engaged with effectively whether in relation to the delivery of the core site masterplan, or

the relocation of the CW RC. The delivery of the relocation of the CWC will be centred on the Development Consent Orde r (DCO) or planning application/Compulsory Purchase Order (CPO) route.

Whichever process is used for the delivery of the relocation, Anglian Water will work with stakeholders to ensure the success of the project and to ensure compliance with all the necessary environmental, statutory and non-statutory consultation processes . Steps will be taken to work collaboratively with other parties involved in the delivery of the project to identify those most affected and engage with them over their concerns and possible mitigations through a variety of channels.

Anglian Water will design a program of consultation and engagement with local community stakeholders (residents, businesses and landowners) providing opportunities for them to comment on the proposals and identify any specific issues that need to be addressed by the project.

If the DCO process is utilised, Anglian Water will embrace the clear and concise obligation to consult the local authorities and local community on the consultation process that will be adopted, the pre-application consultation stage". This may include information leaflets, dedicated web pages, social media, group meetings with community bodies, and face-to-face meetings.

If the consultation process is approved, the statutory, (section 42 Planning Act 2008) consultation stages will encourage the dialogue between all local authorities affected by the project, along with representations from all interested parties within the local community.

Within the Environmental Impact Assessment process, stakeholders will have the opportunity to comment on the Preliminary Environmental Information (PEI) report at the pre-application consultation stage and Anglian Water will seek to obtain comments and address any issues prior to the submission of the actual DCO application

If the Planning Application/CPO process is used then a similar consultation process will be used, but tailored to its, slightly different, requirements compared with the DCO process.

As winner of the Responsible Business of the Year 2017, Anglian Water , although a closely regulated business, looks beyond current regulation, going further than what is expected through innovation and collaboration to deliver transformational projects. Wherever appropriate Anglian Water utilises engagement opportunities as a way in to talk to communities and businesses more broadly about the role of water in society, for business and for the environment, so they can better contextualise the work we are proposing.

Anglian Water recognises that stakeholder engagement is an ongoing process that will be conducted, evaluated and adapted, as desirable. throughout the life of the project.

Delivery of the core site masterplan

Within the Project Execution Plan, U+I will include a specific section on stakeholder management. This section will map out all the key stakeholders, rank their influence and importance, and set a holistic process for engagement with each.

Key stakeholders in respect of the CNFE project will be varied and extensive and our engagement process will be based on a number of stages:

-Stakeholder mapping -- CNFE will matter to everyone in and around Cambridge. Some will live, work and play at CNFE. others already live nearby, and all will know the site. Engaging effectively with such a wide stakeholder group requires a detailed knowledge of who we are to engage . We have already started a comprehensive mapping exercise to identify the stakeholders and have included this within the Appendix AB.

-Developing and delivering effective engagement methods -- different stakeholders have varying needs and appetites for consultation and we will ensure we engage with people through approaches and at levels that reflect these.

-Capturing what we leam -- well capture engagement findings accurately and in a format that can be taken on board by the project team and also fed back to the stakeholder group to share what has been said, both at key stages of the project and then in a Statement of Community involvement

-Ensuring that proposals respond -- engagement without the intention to adapt plans and proposals in response to what is heard is worse than no engagement at all. We will make clear the possibilities and the fixes when engaging, ensuring that there aren't unrealistic expectations, and will establish a culture and set of procedures within the professional team that ensure that proposals take findings into account and respond accordingly

Stakeholder and community engagement

Cambridge City Council selected U+I as master developer partly because they are the mark et leader in engagement and consultation. U+T's approach at CNFE will be underpinned by commitment to early, open and honest engagement with all stakeholders. We want to be 'good neighbours' from the very outset of the scheme to its final delivery and throughout the estate management.

As a team, we will engage extensively with stakeholders and members of the public from the outset, throughout the planning process and the entire life of the project with the aim of:

-building an understanding of the project and support for the vision

-embedding CNFE in policy and in local thinking

-listening and responding to local residents, businesses, landowners and the public's concerns and aspirations

-ensuring that the plans mee t the needs of people and businesses who will work, live and play here

-establishing advocates for the project at all levels.

To ensure project success, the CNFE project team will request each stakeholder identify representatives to meet face to face with the development team on a regular basis. The project team will also prepare a regular news letter that will be distributed to the stakeholders, with key statistics and commentary on progress This will help ensure everyone stays up to date with the progress made at CN.F E.

Soft market testing with a select group or housing associations, institutional investors, local tenants/residents, contractors, neighbouring landowners, and others is planned for 2019.

Connecting with the community is key

U+I will put a significant amount of effort into connecting with local communities -- from residents and residents' associations to local businesses and aspiring entrepreneurs. This will form part of our work on both local stakeholder management and worthwhile (meanwhile) use.

As master developer, they will take the CNFE story -- from the approach to development, to the details of planning applications. to their passionate desire to involve people -- out to the community. Cambridge City Council will encourage U+I to engage with communities and get people to say exactly what they think

Examples of U+Ts approach to date

U+I have met with the owners of Cambridge Business Park to discuss visions and ways to provide better connections and permeability public realm upgrades

U+I have already been approached by potential tenants for the office accommodation and buyers for the Build to Rent elements of the scheme and have agreed to keep in regular contact as the project progresses.

U+I have started discussions with the combined authority, Cambridge City Council and an operator about a Sci-Tech Container Village - as a meanwhile project prior to the delivery of the long term scheme. As master developer, U+I will use this project to start conversations with business tenants and customers, and test out concepts and ideas for the long term scheme.

Project assurance

What are your project assurance processes, such as gateways reviews, to ensure project delivery against the business case? The relocation of the CWRC

Anglian Water's delivery partner, the @One Alliance, is a proven and effective delivery entity. This method of delivery will ensure continuity between on-going pre-planning activities and the detailed design and construction that will follow.

Delivery of the relocation project will be managed through governance and assurance processes defined by Anglian Water's established capital delivery process . These processes apply to total capital investment [redacted] important assurance measures put in place through this process are as follows

The @One Alliance will formally receive the project from Anglian Water and Cambridge City Council and form the next stage of an integrated Project Team, with the emphasis switching from pre-planning and outline designed activities to detailed design and construction. The project will be delivered in accordance with the Anglian Water's established and effective capital delivery process, which involves passing through a number of governance delivery milestones. Throughout the life cycle of the project, the project team will apply planning, monitoring and control procedures on a monthly basis to ensure the project is being delivered in accordance with the project plan and in line with the project's objectives. Key steps in the assurance process are as follows.

1.

Technical Assurance: the @One Alliance will apply Anglian Water's Risk and Value process to ensure that the optimum technical solution progresses from concept through to detail design. In addition to this, the @One Alliance will review design , technical assurance , constructability and operability.

2.

Operational Assurance: Anglian Water Operations will support the delivery of the project from concept through to operational handover. Operations will crucially support the transition of flows , commissioning of the new works and ensure the Environment Agency consents are adhered to.

3.

Delivery Assurance: A Principal Contractor will be appointed on to the project. The Principal Contractor will adhere to their own Safety, Health, Environmental and Quality procedures. in addition to this, the @One Alliance will also supplement this with delivery assurance procedures.

The Anglian Water capital delivery process comprises six stages. A stage is followed by a Decision Milestone (DMO & DM1) or Delivery Milestone (DM2 -- DM6) which is a stop / go point in the process where certain criteria need to be met in order to pass that milestone. Without DM approval, the project can't enter the next stage of delivery.

Anglian Water's Risk Opportunity and Value specialists provide the tools and process to help make best value asset investment decisions on a collaborative basis. The process consists of eight facilitated Challenge stages that involve key stakeholders at strategic points, and is fully integrated with the Totex Delivery and Governance processes.

Standalone solutions, such as the relocation of the Cambridge Water Recycling Hant, are projects where the governance operates on a single project basis. There are six stages which are detailed below. ease refer to Appendix Q for further detail.

• Stage 0 - Identifying the Risk - This stage comprises risk identification, validation and prioritisation and is client-led.

• Stage 1 -- Identifying the Totex Strategy - For standalone projects, the Anglian Water Totex Solution Development Team lead a process to determine the root cause(s), identify the delivery vehicle and strategy (Capital/ Operational/ Blended), and determine efficiency opportunities. A single preferred strategy is presented at Decision Milestone 1 (DM1) for the next stage of evaluating solution options.

• Stage 2-- Evaluating Options - Stage 2 is all about the receipt of the need and exploring possible ways of resolve the need. The Risk, Opportunity and Value (RO\V) process provides the decision-making framework but it is the responsibility of the integrated project delivery team to explore alternatives and present a single option at Delivery Milestone 2 (DM2) for detailed integration/designing Stage 3 and subsequent assembly in Stage 4.

• Stage 3 -- Developing the Solution - Stage 3 is about progressing the single option solution developed in Stage 2 through the design phase, taking opportunities to incorp orate Standard Products into the designed solution. It is intended that by DM3, the design of the solution is largely complete and the supply chain fully integrated into the design of the proposed solution. The Asset Operator is also fully immersed in the solution during this stage and a Delivery Execution Plan (DEP) collaboratively produced and agreed.

• Stage 4 - Delivering the Solution - During stage 4, the Construction and Commissioning of the new or refurbished assets is carried out, including assembly of standard products. The stage also includes all required performance tests and handover of the complete asset(s) to the asset operator. The establishment of SAP asset information and maintenance schedules for the new assets is also a fundamental component in this stage so that the business is set up to commence all required maintenance upon take-over of the new asset(s)

• Stage 5 -- Admin Close Out - Stage 5 comprises the financial and administrative closure of the project, settling financial accounts, confirming commercial position and submitting relevant project data such as cost capture, efficiencies and output confirmations.

• Stage 6 -Warranty Period - Stage 6 start s at the same time as stage 5 (on completion of DM4) and comprises a 52-week warranty period where delivery will respond to any warranty issues that occur after DM4 Handover.

The delivery process described above is expanded in the schematic below to indicate furth er detail on deliverables and outputs at each stage . This outline governance framework will be retained for the project to relocate Cambridge Water Recycling Plant but modifications for the early part of the process are planned to reflect the fact that need analyse s, risk analyses and root cause analyses as applied to conventional asset maintenance and replacement projects will not be required for the project under consideration.

New housing masterplan

The team will use three strategies to ensure project assurance:

Definition -- The Business Plan, the Project Execution Plan and associated management documents with define assurance.

Structure -- The team will be structured to review , implement and report assurance.

Gateways -- The agreed specific gateway control points relevant to either the strategic infrastructure and the plot development.

Concurrent with the development and agreement of the CNFE Business Plan, the project team will establish the Project Execution Plan (PEP). The PEP will be a core document for the management of the project , capturing key elements of the business plan, the plan for all communications and stakeholder engagement, together with all policies, control procedures and gateways.

The PEP will detail the project assurance process:

Project Governance -- detail lines of decision making.

Critical Success Factors -- established from the project's objectives , continual review and management of the CSF's will be essential when keeping the project delivery on track .

Key Performance indicators -- established against key elements of the project, provide a tool for managing and monitoring performance as the project progresses.

Design Quality Indicators -- for strategic infrastructure and on-plot development.

Gateway Review Strategy -- established to provide points in the project, where a holistic review of the project at that point in time can take place.

Further the project team will be structured to establish and empower management groups to ensure project assurance and review is being met against the business plan:

Senior Responsible Officer - Cambridge City Council have appointed a Senior Responsible Officer (SRO) for the project. The SRO will provide an objective oversight of the overall project and its execution reviewing technical and strategic decision making. independent assurance reviews will be

a valuable tool for ensuring successful project and programme delivery. They provide an independent perspective on issues , external challenge to plans and support the project's success.

Programme Board -- The JV landowners will establish a Programme Board that will be established by several key stakeholders in the overall project. The purpose of the Project Board is to provide key decision making for the project

Programme Management Office -- The Master Developer , U+I, will implement a PMO to report to the Programme Board and act as guardians of the masterplan business plan. The PMO will use appropriate project controls and process to undertake design, procurement and delivery in compliance with the business plan. The PMO will provide day to day guidance for the scheme.

Steering Groups -- establishing various steering groups for aspects of the project. The purpose of the steering groups is to provide informed guidance prior to presentation to the programme board.

The specific project gateways will be finally agreed by the Programme Board as part of the Business Plan Management of the project against these gateways, progress reporting and production of gateway report s will be delivered by the Programme Management Office. The proposed gateways are set out below.

Proposed Gateways for delivery of the Strategic infrastructure:

Gateway 0 - Strategic Assessment

•

Gateway 1 -- Business Case Justification

Gateway 2 -- Delivery Strategy

•

Gateway 3 -- Design Assessment

Gateway 4 -- Investment Decision

- Gateway 5 - Estate Management/ Adoption

- Gateway 6 -- Benefits Realisation and Operational Review

Proposed Gateways for disposal of the Development Plots:

Gateway 0 - Strategic Disposal Assessment

Gateway 1 -- Business Case Justification

- Gateway 2 -- Proposal Assessment [Sales Pack]

Gateway 3 -- Dynamic Procurement (Commercial and Design dialogue)

Gateway 4 -- Investment Decision

Gateway 5 -- Estate Management

Gateway 6 -- Benefits Realisation and Operational Review

We propose to adopt the above gateways to provide detailed assurance around each of the following:

- project objectives -- ensure these are being met financial -- actual and projected cost updates align with target returns programme -- actual progress aligns with planned activities

qualitative -- design and delivery quality aligns with quality standards and disposal structures/methods

risk - focus on reducing risk and driving up certainty of outcome and value health, safety and environment

SRO engagement -- ensure the SRO and Programme Board are fully engaged to pro vide guidance and provide, planned interventions,

stakeholder engagement - ensure wider stakeholders are brought together through open lines of communications.

Please provide details of your proposed internal monitoring approach for the scheme

Programme and project management arrangements are detailed in the sections above.

Effective monitoring a programme/project is critical for a number of reasons in providing assurance to both the programme and project management teams , and to the clients, that the pro gramme/project is meeting the following objectives:

Business -- the project/pro gramme continues to perform in line with corporate strategic objectives, is viable in cost, scope, time scales and benefits

Users -- to ensure that the client and customer requirements are met

Quality -- ensuring standards and procedures are adhered to

Technical - that the solution is fit for purpose

Appropriate evaluation will gauge the efficiency, effectiveness, and appropriateness in relation to the programme processes, outputs and outcomes , impact and reach

The monitoring and evaluation framework will be formally drawn up, inline with national programme and project management models once the outcome of the HF bid is announced and the programme formally launched.

Risk Management

Please outline key risks to delivery and mitigations including known delivery constraints and blockages

Number	1	**Likelihood**	Medium Low	**Impact**	Low
Description	Complexity associated with maintaining performance at Cambridge WRC and the new WRC/STC				
Mitigation	Detailed commissioning plan to be determined during optioneering and detail design				

Number	2	**Likelihood**	Medium Low	**Impact**	Low
Description	Unknown ground conditions established prior to commencing work on the new Shaft				
Mitigation	Ground investigation to take place local to Sewer intercept				

Number	3	**Likelihood**	Medium Low	**Impact**	Low
Description	Road layout to the new works prevents tankers from accessing the site from the A10 sufficiently				
Mitigation	Work with Road Environment Services (Tanker Services) to anticipate problems during optioneering. Route modifications may be required.				

Number	4	**Likelihood**	Medium Low	**Impact**	Low
Description	Design-related issues that arise from the Enabling Risk Assessment				
Mitigation	Complete GEOPLM and desktop Enabling Assessment				

Number	5	**Likelihood**	Medium Low	**Impact**	Low
Description	Uncertainty over route and obstructions with construction of new shaft and tunnel route				
Mitigation	Undertake ground investigations at the earliest opportunity				

Number	6	**Likelihood**	Medium Low	**Impact**	Low
Description	Wider Power Network Upgrade Required				
Mitigation	Establish Power requirement and liaise with ONO				

Number	7	**Likelihood**	Medium Low	**Impact**	Low
Description	HIF Outcome - HF application is unsuccessful				

Mitigation	Applicant is preparing a considered and thorough HIF application

Number	8	**Likelihood**	Medium Low	**Impact**	Low
Description	DCO Outcome - Development Consent Order application for the relocation of the CWRRC is unsuccessful				
Mitigation	The Anglian Water relocation team are taking legal advice and engaging with all necessary stakeholders				

Number	9	**Likelihood**	Medium Low	**Impact**	Low
Description	Area Action Plan Progress - The Cambridge Northern Fringe East Area Action Plan is not sufficiently advanced at the time of the submission of the DCO application				
Mitigation	The Applicant is liaising with Cambridge City Council planning to help ensure the Area Action Plan (AAP) programme is maintained and aligned with the DC O submission				

Number	10	**Likelihood**	Medium Low	**Impact**	Low
Description	Concurrent Development - Conflict with other major development in and around Cambridge which puts pressure or conflicting demands on local resources eg, competition for off-site power reinforcement				
Mitigation	Engagement with local critical utilities has commenced to understand pipeline demand and supply issues . Continue to develop dose engagement with local resource providers eg, UKPN				

Number	11	**Likelihood**	Medium Low	**Impact**	Low
Description	Ground conditions -- The extent of the ground conditions associated with the current land owned by Anglian Water and Cambridge City Council is unknown. Of particular interest is the extent of contamination levels to inform the most appropriate remediation strategy				
Mitigation	The Applicant will be undertaking detailed and intrusive surveys and investigations to fully understand all site conditions in support of the Environmental impact Assessment including archaeology, ordnance, eco logy and particularly ground conditions . Early access to be agreed to set up soil hospital to remediate as soon as possible.				

Number	12	**Likelihood**	Medium Low	**Impact**	Low
Description	Alignment with the AAP . The Area Act ion Plan for the wider Cambridge Northern Fringe East is under development The risk is that it does not develop to reflect the specific need s of the new core site masterplan eg, capacity land use				
Mitigation	The Applicant and Master Developer team will maintain engagement with Greater Cambridge Planning Service to help influence and align the requirements of the core site into the wider MP				

Number	13	**Likelihood**	Medium Low	**Impact**	Low
Description	Adjacent conflicting uses -- There are potentially some adjacent uses which may take land from the core site masterplan. For example the rail head in the Chesterton Sidings				
Mitigation	The Applicant's development team are liaising with Cambridge City Council planning and with the other adjacent land owners and stakeholders to ensure the evolving masterplan reflects adjacent uses				

Number	14	**Likelihood**	Medium Low	**Impact**	Low
Description	Transport strategy – A lack of coordination between the evolving transport strategy for the core site and the wider Area Action Plan transport strategy and capacity				
Mitigation	The Applicant has already engaged with the Cambridgeshire County Council Highways Team The Applicant is also developing the site transport strategy to align with the nee d to mitigate any further impact on traffic onto the A14 trunk road from the south				

Number	15	**Likelihood**	Medium Low	**Impact**	Low
Description	Viability and deliverability - Stakeholder aspirations are not aligned with the commercial viability of the masterplan eg, sustainability				
Mitigation	The governance established for the project will ensure early reviews and approvals with all stakeholders. The detailed strategies for the business case eg, sustainability strategy , will be further developed in line with commercial viability while protecting quality				

Number	16	**Likelihood**	Medium Low	**Impact**	Low
Description	Supply chain capacity and expertise – Challenges around the capacity and expertise availability in the regional and local supply chain to deliver the masterplan to the achieve the objectives and critical success factors				
Mitigation	The Applicant is developing a detailed procurement strategy for each element of the scheme and all works packages. There will be an early market engagement process in place for all workstreams and contracts together with the use of proven technologies. Suppliers and contractors will need to demonstrate and evidence available capacity, track record and work load, experience, insurances, qualifications, compliance with contract conditions, etc. Emphasis will be given to local employment opportunities wherever possible. Flexibility to reflect the phased nature of the development of the core site.				

Number	17	**Likelihood**	Medium Low	**Impact**	Low
Description	CWRC relocation delayed -- Any delays in the relocation and decommissioning of the existing CWRC will impact the subsequent delivery of the core site				

	masterplan
Mitigation	Anglian Water is using the experience of its framework engineers and contractors to deliver the relocation and decommissioning. Anglian Water is taking all appropriate legal advice. A programme will be developed to mitigate the impact of delay on the core site through phased handover of the Anglian Water site.

Number	18	**Likelihood**	Medium Low	**Impact**	Low
Description	Changing market demands -- Given the overall scale and timeline for the new development there is risk associated with market changes and the impact to the viability of the masterplan				
Mitigation	The masterplan will be developed in phases and development plots to allow flexibility to align with changing demands. The Applicant team is proposing to future-proof elements of the infrastructure and homes to reflect changing demands and conditions. The team will engage with all stakeholders to ensure the masterplan evolves to reflect market demands				

Please outline your approach to managing risk

Risk strategy

Cambridge City Council is using their strong risk management culture to identify, control and minimise the risks associated with the redevelopment of the site. As part of this approach and to reflect the importance of ongoing risk management, we have engaged, in U+I, a Master Development Partner who shares their vision and knows how to work with public-sector partners. The Master Development Agreement (MDA) and comprehensive business plan for the redevelopment aligns the goals of the principal partners -the applicant (Cambridge City Council), the major landowner (Anglian Water) and the Master Developer (U+I).

The MDA and the comprehensive business plan will enable a clear framework within which the partners can take their respective roles forward leaving the project board to manage the project at the strategic level.

Combining the development experience of U+I's team with the strategi c perspective, land ownership, statutory enabling powers and experience of Cambridge City Council and Anglian Water has created a powerful body equipped to delve r an exemplar regeneration of the site and create a significant number of new homes and communities.

Risk specialists

U+I is an expert at working in partnership with the public sector in delivering high quality, sustainable, creative and innovative development and the management of risk is one of the key skills being used to ensure success. As an expert in managing the successful delivery of masterplans such as Cambridge Northern Fringe East, U+Is has engaged a masterplan team of specialists who are collaborating to identify, control and minimise risk throughout the life cycle of the masterplan. They also have their own risk committee that monitors all projects and reports directly to the Pic main board.

U+I has appointed Faithful+Gould to provide the necessary focus and resource to champion and drive the risk management culture with in the masterplan team. The risk man ager is an essential part of the Programme Manage men t Office (PMO) providing the controls, governance and reporting around the delivery of the masterplan. As Risk Manager [redacted] has set up the risk management tools and is promoting a culture where risks and challenges are being raised together with appropriate mitigation plans to ensure parties are informed , risks are measured and controlled and to help protect and drive improved value into the project.

The masterplan PMO will work closely with the Anglian Water @One Alliance to manage risks across the CW RC relocation and the CNFE core site masterplan in a seamless manner.

The overarching objective is for the masterplan team to work collaboratively within a supportive environment and culture where risks are identified, implications assessed and a dear plan with an owner is put in place to control the risks to minimise their impact.

Risk management

As the Cambridge Northern Fringe East masterplan is at an early stage, the team has the opportunity to influence the majority of decisions which will have a major impact on the project's success and deal effectively with risks from the outset to deliver optimum results.

As risk manager, [redacted] is coordinating the risk management approach. Risk management is an effective tool that encourages all parties to consider the full range of possibilities that may occur and to seek ways of managing and minimising them The CNFE team is encourage d to collaborate to identify project risks, allocate risk ownership, identify a mitigation plan for each risk and allocate the most appropriate owner for the risk mitigation action plan.

Throughout the lifetime of the scheme, the masterplan team under the stewardship of the Corporate Programme Management Office (CPMO) will regularly review risks

Fortnightly progress meetings -- risk is an agenda heading at every team progress meeting and facilitates the opportunity for team members to raise and discuss risks.

Each project stage - Formal risk workshops at all key project governance stages.

Quarterly Report - The Programme Management Office (PMO) issues their Risk Management Report to the CNFE Programme Board on a quarterly basis as part of the CPMO reporting cycle. This updates the project board on the risks and the mitigation actions being taken.

Monthly Report --The CPMO issues a summary of the key risks, challenges and opportunities to the CNFE Programme Board monthly.

Please refer to Appendix W6.

There are very dearly defined channels for communicating risks through to the PMO Risk Manager and also an escalation process for the reporting of risks to the Programme Board.

Risk register

[redacted] working with Anglian Water's @One Alliance has established the Programme Risk Register for both the CWRC relocation and the CNFE Core Site masterplan which is used to provide a regular update on project risks, in accordance with our established and proven risk management

processes. The Risk Register has been adopted as a key risk management tool involving the Master Developer U+I, working with Anglian Water @One Alliance to manage risks through the relocation of CWRC through to the delivery of the masterplan and beyond to estate management.

The risk register captures the details of each risk:

Identification of the risk (a brief description together with the unique reference nr and date raised).

Classification of the risk (risks are sub-divided into pre-planning/planning/pre-construction/construction/post-construction). Assessment of the risk (all risks are assessed by considering their likelihood of occurrence, their impact should they occur and the time proximity until the risk impact).

Response to the risk (a dear action plan to eliminate risk, mitigate risk or manage any residual risk).

Owner for the risk (a clear allocation of who is best placed and qualified to manage the risk).

Risk classification

All risks are organised and classified into broadly chronological stages:

Pre-planning -- the period from appointment of U+I as Master Developer up to preparation of the outline planning application. Planning - specifically related to the preparation and determination of the masterplan outline planning application.

Pre-Construction -- the period from planning consent to start of construction work This will cover the period to close out detailed

design, the procurement of infrastructure and plot developers.

Construction -- the period from commencement to completion of site works for all infrastructure and building assets

Post-Construction -- the period of estate management following completion of the masterplan development.

Risk assessment criteria and RAG status

As demonstrated in the following table, risks will be assessed and captured in the risk register according to:

their probability of their occurring

their impact across 7 aspects including programme , financial, reputational and safety their proximity (time before risk event occurs).

Pre-active and Pre-emptive Planning

The objective is to anticipate potential problems in order to mitigate risks before they occur in the first instance. Throughout the project, risks are continually identified, managed and tracked to their dose out. Regular risk reviews are undertaken within the project team led by the Programme Management Office and delivery supply chain partners will be challenged to ensure risks are identified, assessed, managed, and where appropriate, escalated.

Please attach a copy of your current risk register for the scheme

[redacted]

[redacted]

Additional Information

If you have any furth er information to support the Management Case for your project, which has not already been captured in the above, please include this here

The list below clarifies the additional information that is referenced in our responses to Section 7 above:

[redacted]

[redacted]

Project Sign Off

Please set out how you have considered your duties under the Equalities Act 2010 (Public Sector Equality Duty) and State Aid risks

Equalities Act

An Equality Impact Assessment (EqIA) tool, which Cambridge City Council uses to ensure it fulfils its legal obligations of the Public Sector Equality Duty , has been completed. The tool considers equality impacts related to the nine protected characteristics and concerning impacts on residents and visitors to Cambridge. It also considers impacts related to "other factors that may lead to inequality' . especially changes on low income groups. There have been no adverse impacts identified at this stage of planning for the CNFE project

Slate Aid Risks

For State aid to arise , State resources must be applied in a manner providing selective benefit" to an undertaking (here the water treatment facility owner, Anglian Water) We have considered this in two discrete parts.

Relocation of CWRC

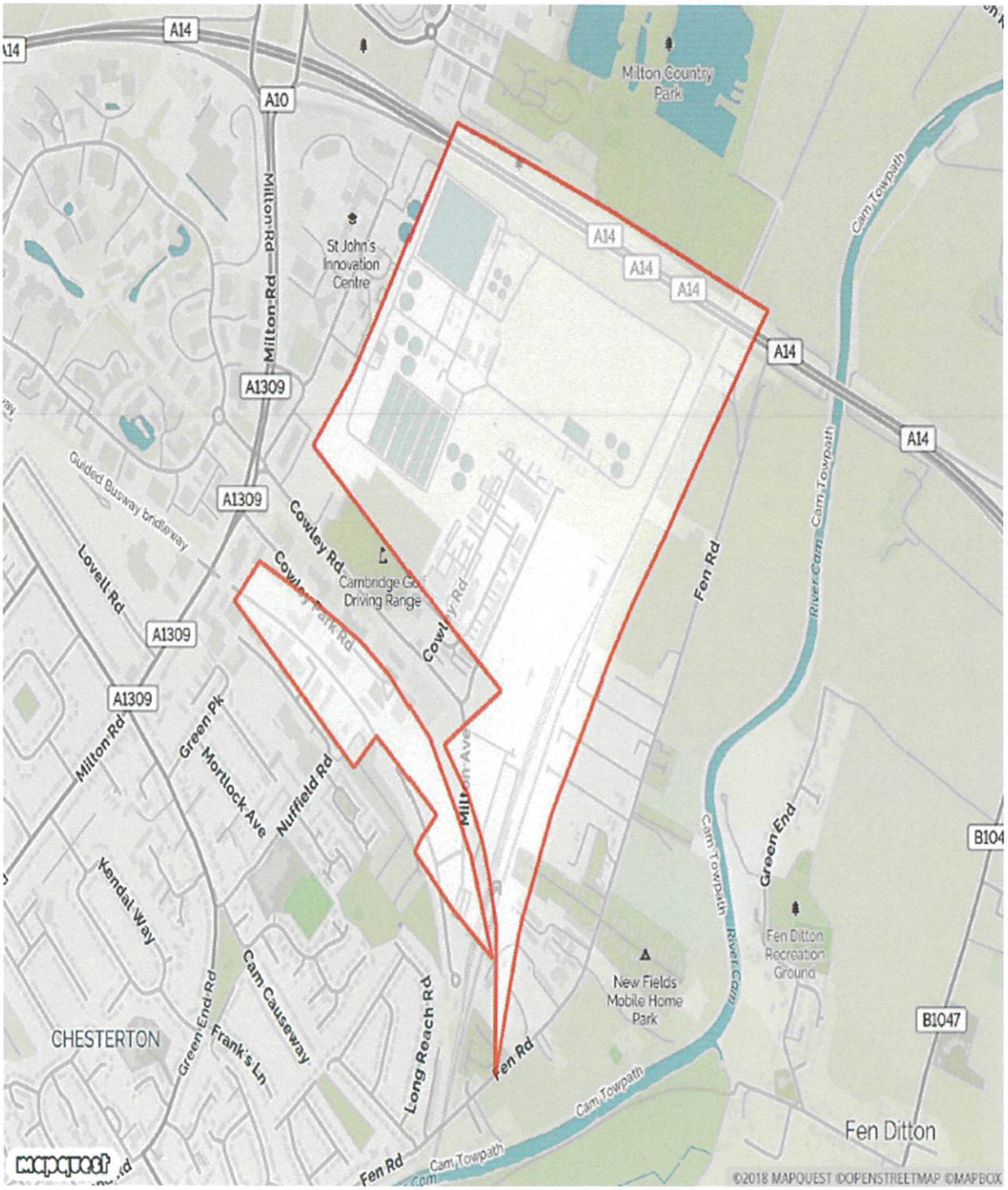
State aid will not occur if, through a transparent process, Anglian Water is merely compensated through the HIF Funding for loss of its water treatment work s and operational land by payment of its reasonable equivalent reinstatement costs of the plant at an alternative location (in accordance with the principles of Section 5 of the Land Compensation Act 1961). This is considered to be consistent with the European Commission's State aid approval (as no aid) in the Netherlands in respect of SA 32225 Expropriation compensation of Nedalco in Bergen op Zoom NL'.

Development of the combined property

To achieve "best value for both parties, Cambridge City Council and Anglian Water will enter into a joint venture to develop the resulting combined development site (Anglian Water operational land, Anglian Water non-operational land, and Cambridge City Council land), their respective returns determined by an arm's length market negotiation (the values of their respective ownerships supported by valuation advice) and in a manner that will demonstrate that the Council's investment is fully compliant with the requirements of the Market Econ om y Operator Test.

Please attach your Section 151 officer sign off for your proposal

Filename	**Description**
S151 Officer Sign Off.pdf	Section 151 Officer Sign Off


A14
A10
Milton Country Park
St John's Innovation Centre
Milton Rd
A1309
Guided Busway bridleway
Lovell Rd
Cowley Rd
Cambridge Golf Driving Range
Cowley Park Rd
Fen Rd
River Cam
Cam Towpath
Green End
B104
B1047
Fen Ditton Recreation Ground
New Fields Mobile Home Park
Fen Ditton
Milton Rd
Green Pk
Mortlock Ave
Nuffield Rd
Kendal Way
Green End Rd
Frank's Ln
Cam Causeway
Long Reach Rd
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Get in touch

You can contact us by:

Emailing at **info@cwwtpr.com**

Calling our Freephone information line on **0808 196 1661**

Writing to us at **Freepost: CWWTPR**

You can view all our DCO application documents and updates on the application on The Planning Inspectorate website:

https://infrastructure.planninginspectorate.gov.uk/projects/eastern/cambridge-waste-water-treatment-plant-relocation/