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Cambridge Water

Site Selection Report

For a Reservoir in the Fens

October 2022

Contents

Glossary and Acronyms

AONB	Area of Outstanding Natural Beauty
BMV	Best and Most Versatile land
Cambridgeshire Study Area	The broad study area in Cambridgeshire identified at Stage 1 – initial screening - in which the proposed reservoir could be delivered.
Factor of Safety	The Factor of Safety used in the preliminary reservoir assessments is a comparison of the stabilising actions (weight of clay) against destabilising actions (uplift pressures) and is used to assess stability and risk of hydraulic failure due to uplift.
Fens Water Partnership	Stakeholder engagement group consisting of local stakeholders. This group informed the approach taken of Site Selection and contributed to the findings and outcomes of the earlier Site Selection stages.
ha	Hectare
HRA	Habitats Regulations Assessment. Assessment of European sites protected under the Conservation of Habitats and Species Regulations 2017, as amended.
km	Kilometre
km^2	Square kilometre
$ktCO_2e$	Kilotonnes of carbon dioxide equivalent. A metric measure that is used to compare the total emissions of greenhouse gases, in this case generated during construction.
$ktCO_2e$/year	Kilotonnes of carbon dioxide equivalent. A metric measure that is used to compare the total emissions of greenhouse gases, in this case generated on an annual basis during operation.
kV	Kilovolt
LWS	Local Wildlife Site
mAOD	Metres Above Ordnance Datum
MCDA	Multi-criteria Decision Analysis
NCN	National Cycle Network. A UK network of signed paths and routes to encourage cycling and walking.
Net Present Value	The present-day financial value of costs for construction and operation calculated over a 100-year period.
NPS	National Policy Statement. A document produced by the government, which sets out the objectives for development of nationally significant infrastructure, and what needs to be considered in the planning, designing, consenting and carrying out of such Schemes.

NRN	National Recovery Network. A national network of wildlife-rich places aimed to expand, improve and connect these places across cities, towns, countryside and the coast as committed to in the government's 25 Year Environment Plan.
Polygon	The indicative area or parcel of land on which the reservoir could be developed.
Project Promoters	Anglian Water and Cambridge Water
PRoW	Public Right of Way
RAPID	Regulators' Alliance for Progressing Infrastructure Development. RAPID is made up of three water regulators – Water Services Regulation Authority (Ofwat), the Environment Agency and the Drinking Water Inspectorate.
Regional Plan	A detailed plan developed by regional water resource groups providing a detailed picture of the future water resource needs of each region, setting out the type and scale of the challenge to public water supplies while also considering the needs of the environment.
Regional Search Area	The Regional Search Area used at Stage 1 – initial screening to determine the broad study area for use at Stage 2 – coarse screening. It was located in the east of England, covering an area of approximately 29,000km^2 broadly aligned with the WRE regional planning boundary.
Regulation 19 Derogation	This refers to regulation 19 of The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, and specifically relates to works that result in the deterioration of a WFD waterbody being permitted provided that no suitable alternative is available (having regard to cost and technical feasibility), all practicable steps to mitigate the adverse effects have been taken and the works are being undertaken, for example, for reasons of overriding public interest.
Reservoir	The reservoir including the water footprint and embankment.
Scheme	The reservoir and associated development (water treatment works, transfers and abstraction).
Sequential Test	A sequential, risk-based approach to development and flood risk set out in the National Planning Policy Framework. It is undertaken to ensure that areas at little or no risk of flooding (from all sources) are developed in preference to areas at higher risk of flooding.
Site	The potential location or area where the scheme may be developed.
SSSI	Site of Special Scientific Interest
SSSI IRZ	Site of Special Scientific Interest Impact Risk Zone
WFD	Water Framework Directive. European Directive (2000/60/EC) transposed into English and Welsh law through The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, to protect from deterioration of waterbodies. Requires assessment of effects on WFD waterbodies.

WRE	Water Resources East. One of five regional water resource groups (made up of different interested organisation, including water companies for that region) responsible for development of regional plans aligned with the National Framework for Water Resources.
Water Resource Management Plan	Developed by the respective water company, this sets out what action they will take and the investment that will be needed to meet the requirements set out in the regional plan.

Executive Summary

A new storage reservoir in Cambridgeshire, referred to as the Fens Reservoir, has been identified as one of several nationally strategic resource options required to address future deficits in public water supply. Anglian Water and Cambridge Water have undertaken a comprehensive site selection process to determine the most suitable location for this reservoir.

A four-stage site selection process has identified and assessed potential suitable locations for the new reservoir based upon a broad range of community, environmental, economic, and other technical criteria (constraints and opportunities). The methodology, criteria and findings have been informed by subject matter experts and local stakeholders. These stakeholders were engaged through the Fens Water Partnership which included local planning authorities and statutory stakeholders.

Stage 1 – initial screening - comprised a high-level review within the Regional Search Area of underlying geology, proximity to the abstraction sources, sites designated for the protection of nature conservation, major infrastructure, and large areas of existing developments such as settlements. This was used to define the Cambridgeshire Study Area, providing the boundaries for the site selection process.

Stage 2 – coarse screening - involved the delineation of areas of land (referred to as “polygons”) within the Cambridgeshire study area that could accommodate a strategic reservoir with a minimum footprint of 5km^2, based on preliminary design requirements to accommodate a reservoir of the size determined as being required by regional water resources modelling. 81 polygons were delineated. These polygons were screened against a more detailed review of geological risks, an analysis of major existing utilities and other technical constraints. Polygons were then ranked to identify those containing the most constraints to project delivery. 16 polygons which presented the lowest level of risk to project delivery were taken forward to fine screening.

At Stage 3 – fine screening - these 16 polygons were then subjected to more detailed investigation and evaluated against key differentiators, including community, environmental, economic and planning criteria. In consultation with the Environment Agency, a strategic Sequential Test was carried out to prioritise polygons which were both affordable and carried the lowest level of flood risk. This stage identified a shortlist of four preferred alternatives taken forward to Stage 4 – preferred site selection. These were titled Polygons A, B, C and D.

At Stage 4 – preferred site selection - more detailed desk-based assessments by subject matter experts and further stakeholder engagement informed a comparative review of the four remaining polygons. These polygons were considered against nineteen criteria to identify the best performing polygon having regard to the advantages and disadvantages of each polygon against each criterion.

Polygon C emerged as the best performing area of land for a reservoir and the proposed site is between Chatteris and March, near to Doddington, Wimblington and Manea.

The Scheme will be subject to further assessment and scrutiny as it progresses through more detailed design. This will include an Environmental Impact Assessment and further stakeholder engagement to inform mitigation requirements to minimise adverse effects and maximise potential benefits. The land within Polygon C will host the proposed reservoir, and some associated infrastructure, but additional development located outside the polygon area may also be required. As our proposals for the Scheme develop through consultation with the local community and stakeholders, more detailed design will take place to finalise the location of the reservoir within the polygon and the location of this associated development.

1 Introduction

This report summarises the site selection process used to identify the best performing location for the proposed Fens Reservoir. This chapter outlines the strategic need for a reservoir in Cambridgeshire and introduces the four-staged site selection process undertaken to identify the most suitable location for development of a strategic reservoir.

A new storage reservoir in Cambridgeshire, referred to as the Fens Reservoir, has been identified as one of several nationally strategic resource options required to address increasing deficits in future public water supply. The reservoir, promoted by Anglian Water and Cambridge Water (the "Project Promoters"), is being progressed through the fast-tracked delivery framework overseen by the Regulators' Alliance for Progressing Infrastructure Development (RAPID) and will be a Nationally Significant Infrastructure Project seeking consent through the development consent regime.

A comprehensive site selection process has been undertaken to determine the most suitable location for this reservoir. Further details on this process are set out in this report including the criteria applied, how stakeholders have provided input to the process and the engineering principles used to define the extent of land required for the new reservoir. The process sought to avoid or minimise adverse environmental or social impacts and maximise the wider opportunities that the reservoir may present.

1.1 Strategic need

The Fens Reservoir featured in the Water Resource Management Plan 2019[1] as one of the supply-side options that Anglian Water would investigate further, as part of their adaptive planning activities to ensure that the Scheme would be ready to implement should it emerge as a preferred option in future plans. The option assumed that water would be supplied from a new abstraction point on the River Great Ouse, capturing surplus flow for storage in a new reservoir sited approximately 25km from the intake in Cambridgeshire, subject to further modelling and site investigation.

The East of England is one of the driest and fastest-growing regions in the country and is home to many unique and precious landscapes that rely on water. This creates particular challenges for Anglian Water and Cambridge Water as weather is becoming more extreme, and there is an increasing population which places greater emphasis on the need for water supply resilience during extreme drought. Water abstraction from environmentally sensitive areas also needs to be reduced to meet the stretching environmental ambitions as set out in the National Framework for Water Resources[2].

The draft Water Resource Management Plan 2024 has set out a best value plan for meeting these challenges, but the scale is such that they cannot be met through demand management solutions alone. The Water Resources East (WRE) draft Regional Plan is supported by water resources modelling which has identified the need for two new strategic raw water reservoirs in the region to address part of the supply deficit – the Fens Reservoir and the South Lincolnshire Reservoir.

Whilst these reservoirs are a fundamental component to the long-term water resource plans in the region, providing a safe, resilient supply of drinking water is not their sole purpose. The

[1] https://www.anglianwater.co.uk/siteassets/household/about-us/supplyside-option-development.pdf

[2] https://www.gov.uk/government/publications/meeting-our-future-water-needs-a-national-framework-for-water-resources

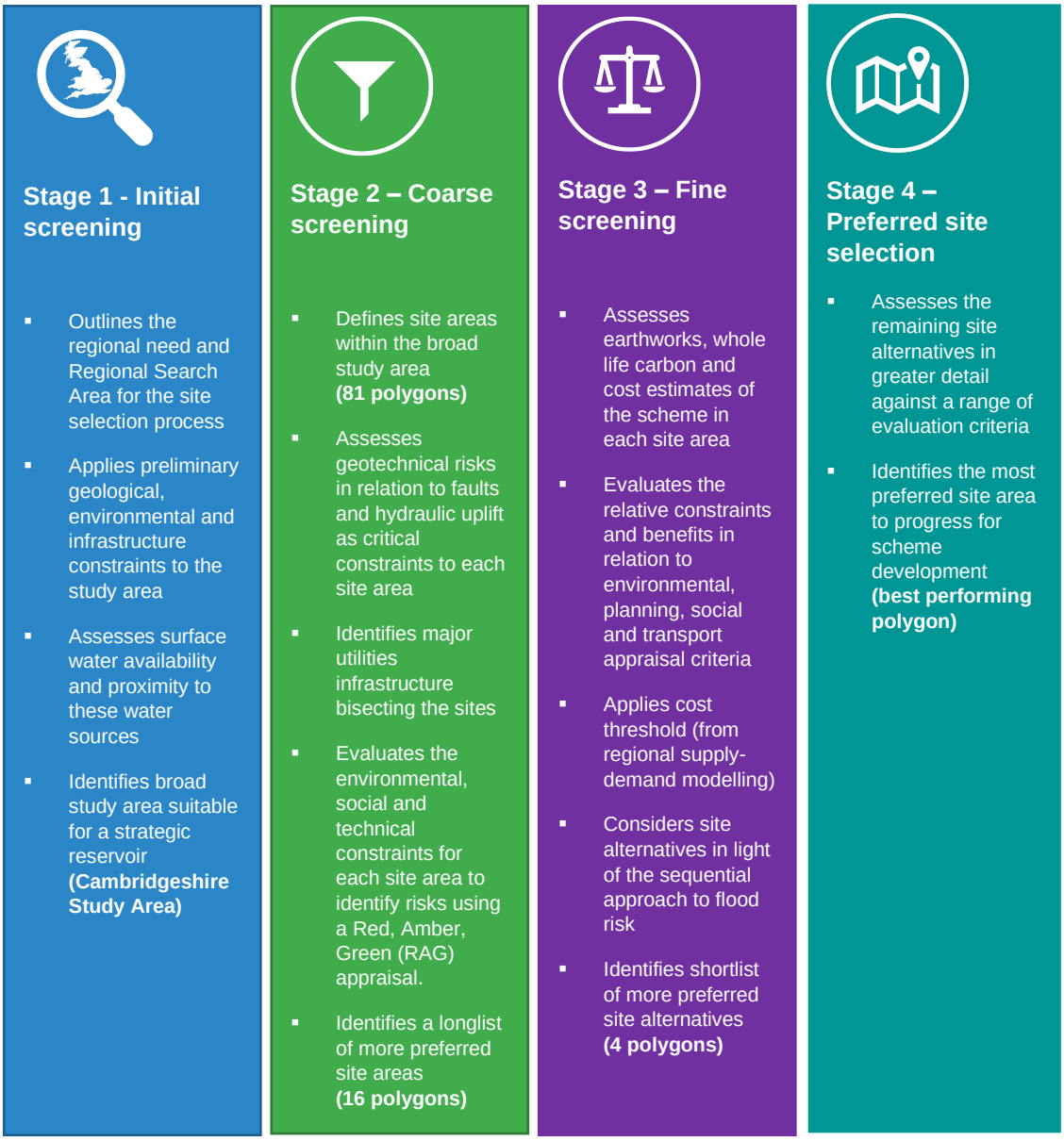
reservoirs will also provide environmental, socio-economic and wellbeing benefits for the communities they serve.

For the Fens Reservoir, regional water resources modelling has confirmed that the required reservoir capacity to meet public water supply requirements should be 50 million cubic metres to provide a supply of up to 87 megalitres per day.

1.2 The site selection process

The Project Promoters have undertaken a four-stage site selection process to identify and assess potential suitable locations for the new reservoir based upon a broad range of community, economic, environmental, and other technical criteria (constraints and opportunities). This comprehensive, staged site selection process is summarised in Figure 1**Error! Reference source not found.**.

Figure 1: Staged site selection process for the Fens Reservoir



A fundamental component of the site selection process has been the consideration of relevant legislation and emerging national policy and in particular, the draft National Policy Statement (NPS) for Water Resources Infrastructure[3]. During the development of the site selection process, stakeholders were invited to comment on the methodology through the Fens Water Partnership; their feedback has influenced the approach and screening process.

Stage 1 – initial screening comprised a high-level review of constraints within a Regional Search Area to identify a broad study area in Cambridgeshire suitable for siting a strategic reservoir.

Stage 2 – coarse screening, involved the delineation of areas of land (referred to as "polygons") within the Cambridgeshire Study Area that could accommodate a strategic reservoir. These polygons were screened against geological risks, the presence of major existing utilities and analysis of environmental, development planning, community and technical constraints. Polygons containing the fewest constraints to project delivery were recommended for the long list of polygons taken forward to the next stage.

At **Stage 3 – fine screening** the longlisted polygons were subject to more detailed investigation and evaluated against key differentiators, including community, cost and technical, environmental and planning criteria. In consultation with the Environment Agency a strategic Sequential Test was carried out to prioritise polygons which were both affordable and carried the lowest level of flood risk. The results of this identified a short-list of the best performing polygons taken forward to Stage 4.

At **Stage 4 – preferred site selection** more detailed desk-based assessments were undertaken by subject matter experts and further stakeholder engagement informed a comparative review of the four remaining polygons. This culminated in the identification of the best performing polygon. Further detail about each stage of site selection is provided in the following chapters.

[3] https://consult.defra.gov.uk/water/draft-national-policy-statement/supporting_documents/draftnpswaterresourcesinfrastructure.pdf

2 Initial, Coarse and Fine Screening (Stages 1 to 3)

This chapter outlines the approach and results of the first three stages of the site selection process: initial screening, coarse screening, and fine screening. This included identifying the study area (Stage 1), delineating areas of land ("polygons") for development of a reservoir (Stage 2) and determining the preferred polygons (Stage 3) for progression to Stage 4 – preferred site selection to identify the best performing polygon.

2.1 Stage 1 - Initial Screening

Initial screening was completed within the Regional Search Area to identify broad study areas which would be technically feasible for siting the strategic reservoirs. The Regional Search Area for both strategic reservoirs broadly aligned with the WRE regional planning boundary, covering an area of approximately 29,000km^2. Key considerations in the initial screening appraisal included the:

- Suitability of the underlying geology for a reservoir.
- Presence of sites designated for nature conservation and/or heritage value.
- Presence of existing strategic transport infrastructure.
- Presence of large areas of existing development, such as settlements.
- Proximity to available abstraction sources and the associated carbon impacts of pumping water long distances.

Suitability of the underlying geology is the key consideration in siting a new strategic reservoir to ensure the integrity of the structure. The geological suitability of the bedrock geology, superficial deposit types and thicknesses were assessed to identify the areas that would be most suited for locating a strategic reservoir.

There are many sites across the East of England which are designated for nature conservation. Highly sensitive and protected areas include Ramsar sites, National Parks, Special Areas of Conservation, Special Protection Areas, Sites of Special Scientific Interest (SSSI), National Nature Reserves and Areas of Outstanding Natural Beauty (AONB). These sites were identified and avoided, in addition to highly sensitive heritage features comprising Scheduled Monuments and World Heritage Sites.

Preliminary hydrological assessments confirmed that the River Great Ouse and the River Witham have water available for licensed abstraction during periods of high and medium flows[4]. A carbon assessment was completed to determine areas that were considered most and least favourable in terms of total annualised operational carbon impact resulting from the transfer of water to fill the reservoir.

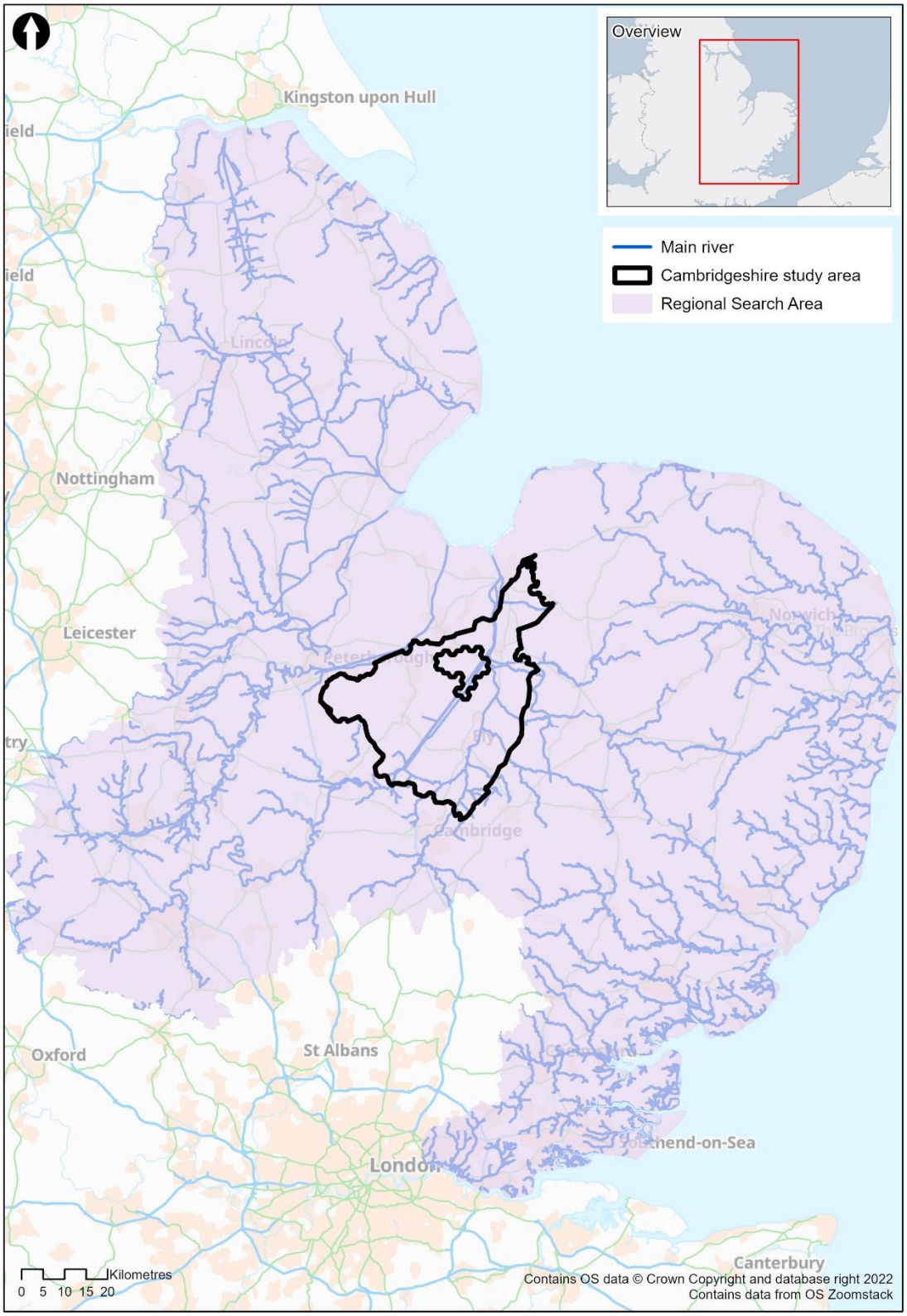
The constraints investigated through initial screening were combined and two broad study areas were delineated – one in Cambridgeshire and one in Lincolnshire. This stage identified a study area, of approximately 1,000km^2, within Cambridgeshire that avoids geologically unfavourable areas, and highly sensitive environmental and heritage designations. The presence of developed land use was minimised where possible and areas considered unfavourable in terms

[4] Abstraction will be reliant on securing permission from the Environment Agency and will be subject to ongoing studies and successful application. For the purpose of this stage of assessment, it has been assumed that an abstraction licence will be granted based on published information in relation to water availability and preliminary discussions with the Environment Agency.

of carbon were excluded, where the distance from water sources could give rise to the highest levels of carbon emissions from both construction and operation.

The Cambridgeshire Study Area is presented in Figure 2.

Figure 2: Cambridgeshire study area



2.2 Stage 2 - Coarse Screening

Within the Cambridgeshire Study Area, polygons of land were identified that could accommodate the embankments and stored water forming a strategic reservoir. These polygons were required to have a minimum land area of 5km^2 based on preliminary design requirements related to the need to accommodate a reservoir that could store 50 million cubic metres of water. The polygons were delineated, using geospatial data and mapping software, to avoid the most sensitive environmental, heritage, developed land use and infrastructure constraints. Where possible, boundaries were drawn along existing features in the landscape including roads, railway lines and statutory main rivers. This process identified 81 polygons as shown in Figure 3Figure 3.

These polygons were then screened using a three-step evaluation process involving:

1. A more **detailed review of geological constraints** was undertaken to determine a preliminary geological risk. This critical step considered suitability of bedrock for the proposed reservoir construction. It also considered the risk of failure from hydraulic or groundwater uplift, where water pressure in any permeable stratum lying beneath the base of the proposed reservoir could potentially exceed the vertical stress of the overlying material which could cause a failure of the reservoir foundation. This assessment was informed by published geological information from the British Geological Survey and regional groundwater levels from the Environment Agency. An initial Factor of Safety against the risk of hydraulic uplift failure was determined and only polygons with a Factor of Safety above 1 were progressed, following industry best practice. This step screened out one polygon, and 80 polygons progressed to step 2.
2. **Analysis of major existing utilities**, which assessed the presence of high-pressure gas mains, overhead and buried transmission lines operated by National Grid, and electrical transmission cables with a voltage greater than 400kV. This strategic gas and electricity infrastructure is prominent across the Cambridgeshire Study Area and would represent a substantial risk to project delivery. This was found to be present in the centre of the study area in a mainly north to south direction. This step screened out seven polygons, and 73 polygons without any major utilities present within their boundary progressed to the third step of coarse screening.
3. **Strategic analysis of performance against environmental, development planning[5], community and technical constraints**, was completed by subject matter experts using available data. Professional judgement was used to determine whether any constraints affected the feasibility of project delivery at the remaining polygons. Consultation with stakeholders through the Fens Water Partnership was undertaken during coarse screening to capture any important local features and sensitive receptors. Considerations included the proximity to transport infrastructure, community and property features, local plan designations, nature conservation and designated sites, potential for archaeological finds and the presence of assets designated for their historical importance, agricultural soils and the presence of peat. Polygons were assessed and the 16 polygons which presented the lowest level of risk to project delivery were taken forward for Stage 3 – fine screening.

[5] This category included Local Plan land use allocations, Neighbourhood Plans, presence of Nationally Significant Infrastructure Projects, Major development proposals and land use constraints (e.g. green belt, safeguarded land and designated common land).

2.3 Stage 3 - Fine Screening

Fine screening incorporated two processes to support and inform decision-making on the remaining 16 polygons for progression to preferred site selection. These were:

- Technical appraisals and stakeholder engagement, including Participatory System Mapping and Multi-criteria Decision Analysis (MCDA).
- Sequential, risk-based assessment of flood risk.

Desk-based technical appraisals were undertaken by subject matter experts using available information to characterise the attributes and performance of each polygon in relation to:

- Community constraints (flood risk; land grade and soils; property and business; traffic and transport).
- Environmental constraints (historic environment; carbon; landscape character and visual amenity; water quality; biodiversity and nature conservation).
- Planning constraints (relationship with land designated for planning purposes).
- Potential benefits (habitat creation, reducing flood risk, socio-economic and community).

Further detail regarding the attributes considered against each criterion is provided in Appendix A.

In the case of constraints and opportunities, Participatory Systems Mapping was used to identify priorities and objectives of local importance to the polygons. This was a stakeholder-informed process that identified priorities both within the polygons and the regional landscape.

For each of the criteria, polygons were scored allowing them to be ranked from best performing to poorest performing for each criterion. The MCDA was completed with stakeholders (through the Fens Water Partnership) to enable a transparent comparison of each of the technical attributes associated with each polygon. This process ensured that stakeholder inputs were considered alongside those of the Project Promoters. The MCDA helped to determine the preferred polygons.

The MCDA process incorporated cost-benefit analysis with preliminary estimated costs derived from outline design assumptions. Development at many of the polygons would be likely to represent excessive cost to customers. The project team concluded that any polygon with a preliminary cost estimate of greater than £2bn (circa £3bn including risk and early development phase contingency) would not be economically viable or that alternative sources of water (for example from desalination) might offer better value for money at this higher cost level. Five of the 16 polygons assessed at Stage 3 met, or were within 5% of, this cost threshold.

Subsequently, a sequential, risk-based approach to development and flood risk (as set out in the National Planning Policy Framework) was applied in consultation with the Environment Agency. The approach is designed to ensure that areas at little or no risk of flooding are developed in preference to areas at higher risk of flooding. Application of the sequential approach in the plan-making process, in particular application of the Sequential Test, steers new developments to be built within Flood Zone 1 (areas with a low probability of river or sea flooding) ahead of Flood Zone 2 (areas of medium probability of river or sea flooding) or as a last option Flood Zone 3 (areas of high probability of river or sea flooding).

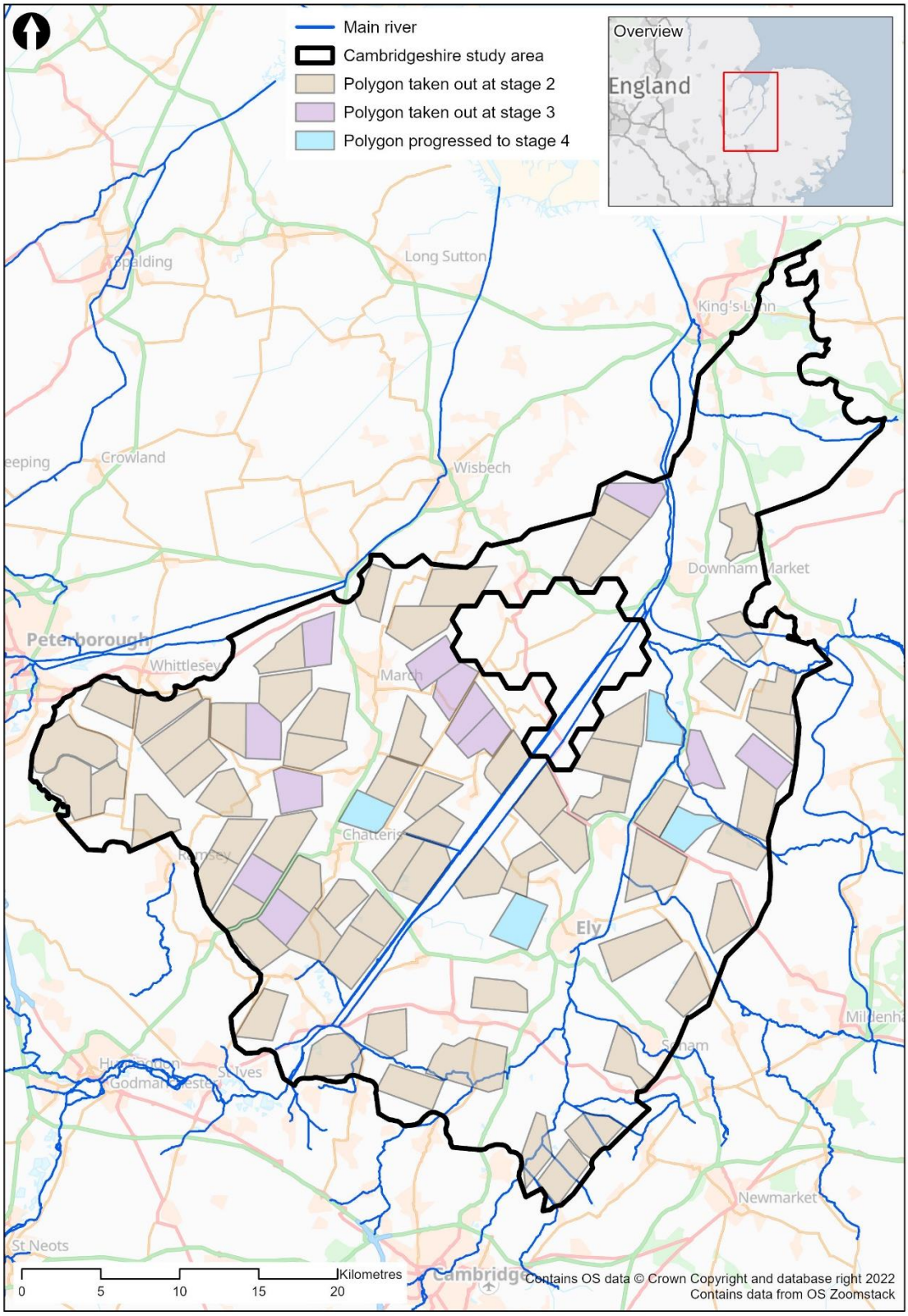
All of the five polygons that met (or were within 5% of) the cost threshold, were predominantly in Flood Zone 3 which is a common classification across the Fens, and therefore none were preferred under the Sequential Test. Flood risk from all sources was taken into account to assess the absolute flood risk from all sources and differentiate between the five polygons. This did not assume that the polygon with the lowest flood risk should be definitively preferred above all other criteria; rather that the relative residual flood risk associated with these polygons within

Flood Zone 3, would be considered alongside other criteria, in the selection of the best performing polygon.

One of the polygons appraised was found to be significantly impacted by flood defences overtopping when climate change was taken into consideration. This polygon also performed poorer against many of the technical criteria applied to the MCDA, and as these were shown to be clear differentiators between the polygons, this polygon did not progress to the next stage of site selection. The remaining four polygons (A, B, C and D) were considered to have a manageable level of residual flood risk making them reasonable viable alternatives for progression to the short-list. Residual flood risk would then be considered alongside other impacts and benefits at Stage 4 - preferred site selection.

Figure 3 depicts the results of Stages 1 to 3 of the site selection process.

Figure 3: Map depicting the location of the polygons screened in the site selection process



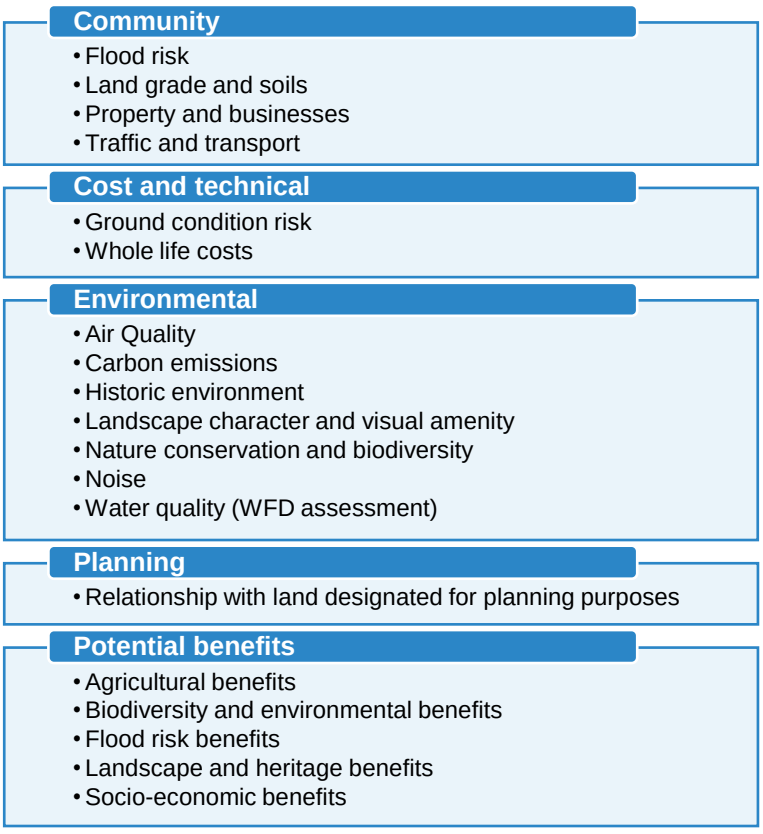
3 Stage 4 – Preferred Site Selection

The final stage of the site selection process involved a comparative review of the four short-listed polygons based on desk-based technical appraisals and stakeholder workshops to establish the most suitable area of land for development of a reservoir. This chapter summarises the approach and outcome of Stage 4 – preferred site selection.

3.1 Approach

The four polygons were appraised against the site selection criteria, as listed in **Error! Reference source not found.**,**Error! Reference source not found.** using desk-based quantitative and qualitative analysis, carried out by subject matter experts using professional judgement. In addition, stakeholders were engaged through the Fens Water Partnership to appraise potential benefits at topic-specific stakeholder workshops. This comparative review allowed for the multiple strengths and weaknesses of each polygon to be weighed up against one another in an expert led holistic approach aimed at identifying the best performing polygon for development of a strategic reservoir. A full list of features considered under each of these criteria groups is provided in Appendix A.

Figure 4: Preferred site selection criteria



Location maps of the four polygons appraised at Stage 4 are provided in Appendix B. A summary of distinguishing features, based on the collective professional judgement of the project team and technical experts, for each of the selection criteria categories, is provided in Appendix CAppendix C – Stage 4 Appraisal Summary. Features for each of the selection criteria that did not materially differ between the four polygons have not been detailed in Appendix C on the basis they were not distinguishing factors in the site selection process.

3.2 Polygon A

Polygon A is located approximately 2.2km directly west of the city of Ely in the East Cambridgeshire District Council area. The village of Coveney is approximately 1km from the western edge of the polygon, while the village of Little Downham is 1km to the north along the B1411. The A142 road runs between the south of the polygon and Witchford.

It is situated within an area that comprises open farmland with many arable fields of varying size, defined by ditches and hedges with occasional trees. Land use includes a mix of residential properties, businesses and agricultural holdings.

3.3 Polygon B

Polygon B is located approximately 2km east of the village of Littleport in the East Cambridgeshire District Council area, and approximately 9.6km northeast of Ely. It lies north of the A1101. The hamlet of Little Ouse is approximately 1km north from the polygon boundary. The Borough Council of King's Lynn and West Norfolk is located north of the polygon, beyond the River Little Ouse.

It is situated within an area of flat open countryside, comprised of open farmland with mainly arable fields of varying size, defined by ditches with occasional trees and linear woodland. Land use includes a mix of residential properties, businesses and agricultural holdings.

3.4 Polygon C

Polygon C is located approximately 2.2km north of the town of Chatteris and south of March in the Fenland District Council area. The polygon lies between the A141 Isle of Ely Way and the B1098 Sixteen Foot Bank with the Forty Foot Bank to the south. Doddington is located immediately northeast of the polygon on the other side of the A141.

It is situated within an area comprised of arable fields of varying sizes, interspersed with drainage ditches. Except for occasional shelterbelts, there is minimal tree cover within the polygon. Land use includes a mix of residential properties, businesses and agricultural holdings.

3.5 Polygon D

Polygon D is located approximately 6.5km north of the town of Littleport and approximately 7.3km south of Downham Market within the Borough Council of King's Lynn and West Norfolk area. The Ten Mile Bank and the River Great Ouse run immediately to the east of the polygon, with the village of Southery approximately 1.5km to the east of the polygon on the other side of the River Great Ouse and A10 Ferry Bank.

It is situated within an area comprised of open farmland with mainly arable fields of varying size defined by ditches. There is negligible tree cover or hedgerows within the polygon. Land use includes a mix of residential properties, businesses and agricultural holdings.

3.6 Comparison of polygons

Analysis against the selection criteria demonstrated that Polygon C performed well for most of the criteria. This is particularly the case for the environmental criteria and potential benefits criteria.

Both Polygons A and C performed well in respect of ground condition risk and whole life costs, which are particularly important for deliverability and value for customers' money. Polygon D performed poorest for these two criteria with the highest average thickness of poor quality superficial material layers, making this the most difficult polygon to achieve a cut-fill balance. This resulted in a whole life cost of between 14% and 27% more for Polygon D than the other

three polygons. Polygon C was considered to provide the best opportunity for reuse of superficial material although had a marginally (2%) higher whole life cost than Polygon A.

None of the polygons were materially different from one another in respect of whole-life carbon emissions. Polygons A, B and C were anticipated to have similar levels of operational carbon, approximately 3% more per annum than Polygon D. Polygon A was found to have the lowest construction carbon, albeit less than 5% lower than Polygons B and C. These slight differences meant that carbon emissions did not play a major differentiating role in determining the best performing polygon.

Polygon C is the only polygon that is not within the Ouse Washes Goose and Swan Functional Land SSSI impact risk zone (SSSI IRZ). This functional land is used by qualifying species for foraging and roosting. Polygons B and D are wholly within this SSSI IRZ and Polygon A is partially within it. There is, therefore, potential for direct impact within these three polygons upon functional habitat used by birds that are qualifying features of designated sites. Whilst Polygon C is not within this SSSI IRZ it does support habitats consistent with those within the IRZ.

Polygon C also performed best in respect of water quality particularly considering the provisions of the Water Framework Directive (WFD). It was not considered likely that the development of any of the four proposed polygons would require use of the WFD derogation process. However, Polygons A, B and D would present more significant challenges than Polygon C.

All polygons comprise Grade 1 (excellent) and Grade 2 (very good) Best and Most Versatile (BMV) agricultural land. Of the four polygons, Polygon C would result in the lowest loss of Grade 1 BMV land.

None of the identified reservoir polygons would be able to be delivered without having to acquire agricultural property, homes or businesses. Polygon A would require land take from almost twice as many agricultural holdings as the other polygons. Polygons B, C and D would require broadly the same number of agricultural holdings; however, it was recognised that Polygon C would likely require the acquisition of the most residential properties. Additionally, the development of Polygon C would necessitate the closure of several local businesses or potential recreational facilities associated with the Chatteris Airfield, and the airfield itself.

Although Polygon B hosts the fewest residential properties of the four polygons, it includes a large scale, intensive mushroom farm and an associated anaerobic digestion facility. Given the poor performance of Polygon B across other criteria, including cost, it was considered that the case for compulsorily acquiring the facility, which employs a significant number of staff, would be difficult to maintain. Polygons A and D, while containing fewer residential and commercial properties than Polygon C, were deemed to deliver fewer socio-economic and ecological benefits (referred to below) and would give rise to higher levels of adverse environmental impact.

In terms of the impacts on historic environment, Polygons B and D performed best for heritage, with the risk of potential adverse effects on designated assets and archaeology considered to be low. Polygon A was considered to give rise to impacts on the setting of Ely Cathedral which would amount to the higher end of “less than substantial harm” to that asset - which would not be outweighed by the polygon's benefits, which included the lowest capital cost of the four polygons. Polygon C was assessed as likely to result in potential impacts on the setting of four scheduled monuments, which would amount to the middle lower end of “less than substantial harm” to those assets. This was considered to be outweighed by the polygon’s benefits, including lower levels of adverse environmental impact and its potential to deliver a range of benefits (see below).

Polygon C was found to provide the greatest opportunity for potential benefits. This included benefits related to enhancing biodiversity, reducing flood risk and local socio-economic opportunities. The presence of the Forty Foot Drain and extensive areas of Nature Recovery

Network (NRN) compared to the other polygons, would provide opportunities to increase ecological connectivity of varied habitat types at a landscape level not possible at the other polygons, particularly Polygon B and D. Much of this would provide opportunity to reduce flood risk, including expansion of the Cranbook and Counter Drain and reinstating the Forty Foot Drain. It was accepted that Polygon A also provides good opportunities for reducing flood risk, including expansion of the Coveney Nature Reserve providing the co-benefit of enhancing biodiversity. These benefits were, however, considered more limited to those offered by Polygon C.

All polygons were found to provide some opportunities for local socio-economic benefits. Namely, promoting connectivity to nature, enhancing local sustainable transport, promoting active travel and lifestyles, encouraging environmental education and providing areas for recreation and tourism. Polygons A and C were considered to provide the best opportunity to benefit a higher number of people owing to the limited number of residential areas in proximity to Polygons B and D.

The local authority area that Polygon C is located within has one of the highest levels of deprivation in Cambridgeshire and there is potential for this Scheme to help unlock local socio-economic benefits. The Project Team considered this to be of greater benefit than any that could be realised by Polygon A.

Polygon C also received the most support from stakeholders in the Fens Water Partnership in respect of the potential for wider opportunities across most of the benefits criteria considered.

Overall, Polygon C was considered to perform better than Polygons A, B and D when considered against a broad range of selection criteria. In particular, Polygon C offers the following advantages:

- It offered the lowest ground condition risk and best opportunity for the reuse of superficial material.
- It would result in the loss of the least area of high quality (excellent) agricultural land.
- It could affect the viability of the fewest number of agricultural holdings.
- It would not require the loss of parts of the Ouse Washes Goose and Swan Functional Land SSSI IRZ.
- It would not result in the loss of sites designated for nature conservation.
- It would not impact on designated landscapes or protected views.
- It has the potential to provide significant socio-economic benefits particularly at the local level.

There are also many opportunities that the selection of Polygon C could unlock, such as:

- The greatest potential for wider benefits identified by stakeholders, beyond those provided by a public water supply reservoir, including biodiversity and flood risk benefits, and significant socio-economic benefits particularly at the local level.
- Increased ecological connectivity of varied habitat types at a landscape level by providing opportunity to enhance ecological corridors through linking with the NRN and adjacent Local Wildlife Site (LWS).
- Promoting sustainable travel; active travel/lifestyles; recreation and tourism; and green infrastructure.
- Potential river transport of materials during construction which could enhance navigation opportunities along the Sixteen Foot and Forty Foot Drains.

4 Preliminary Site Boundary

The four-staged site selection process has considered the economic and technical feasibility of delivering the Scheme within the Cambridgeshire Study Area. Through the consideration of the site selection criteria across the four stages, the Project Promoters identified a best performing site within which the reservoir, together with its embankments, could be located.

In addition, it is recognised that supporting development in relation to the operation of the reservoir will be required. The potential need for at least some of that development to be located outside of the boundary of Polygon C has been identified and is described below.

The second and third stages of site selection focussed on the suitability of identified polygons to host the reservoir and its embankments, which would be constructed within the boundaries of those polygons. It is further recognised that additional development, possibly located outside of the polygon areas, would also be required to operate the reservoir, including water treatment works, emergency draw-down facilities, access roads, renewable energy generation and car parking. The environmental and social benefits of the project will also be dependent upon the delivery of other features that could include additional planting, visitor and educational centres, habitat creation and restoration and leisure facilities, many of which would also be situated outside of the selection polygons.

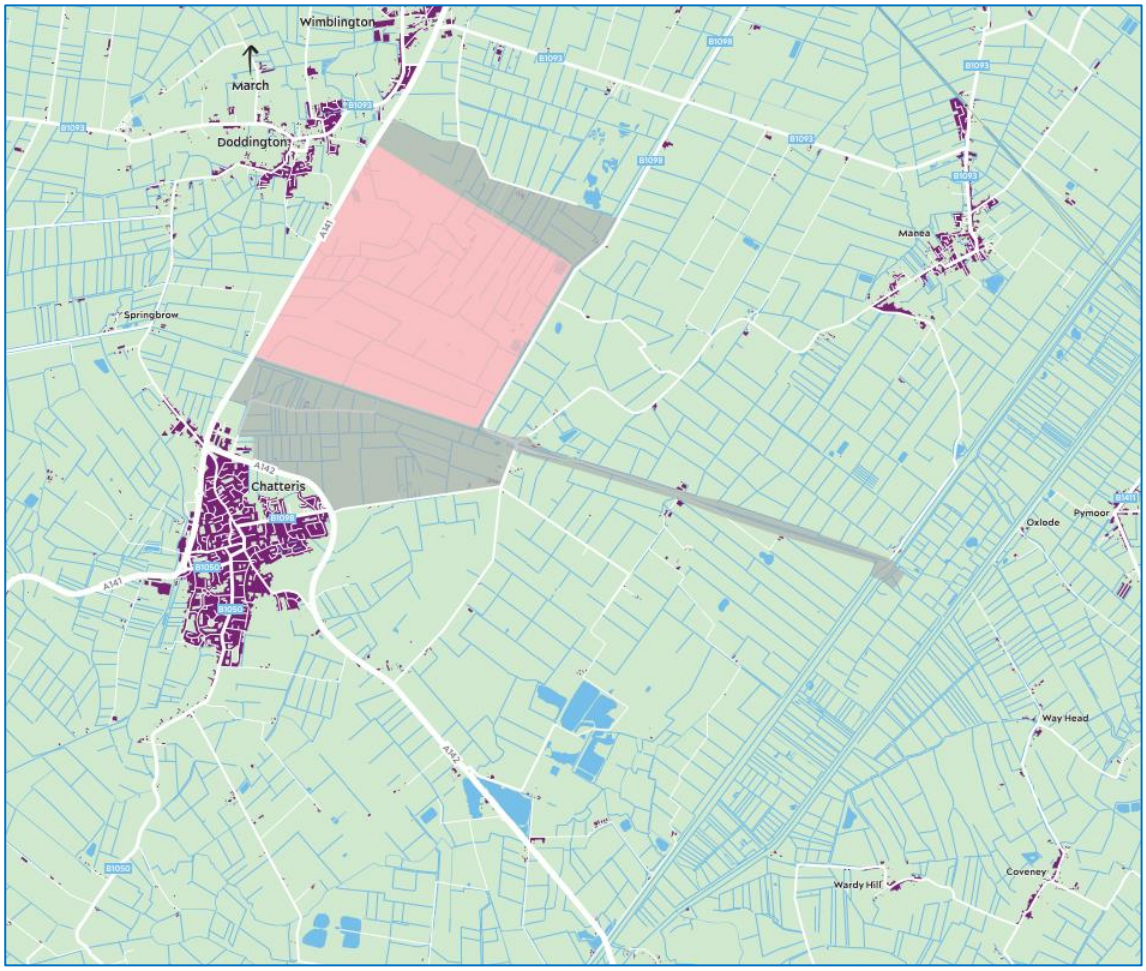
During the Stage 4 site selection process, having selected the most suitable sites for the location of a reservoir and its embankments in the previous stages, preliminary consideration of the land requirements for this additional development took place. The project team concluded that, when compared to the size, complexity and geological sensitivity of the reservoir and its embankments, locating this supporting development in proximity to the polygons shortlisted at Stage 4 would not impact on the site selection conclusions.

It was nonetheless recognised that the minimisation of the potential impacts of the supporting features could be achieved through further engagement with local communities, homeowners, landowners and other local stakeholders. It was recognised that flexibility in the layout of the reservoir design and the associated development would be required to do this. Rather than present local communities and other stakeholders with a fixed design and land take, with minimal scope for variation, it was decided by the project team that public consultation and flexibility would be best delivered by presenting a preliminary indication of the area around the reservoir Polygon where associated development had the potential to be located.Figure 5

It should also be noted that this wider area doesn’t incorporate infrastructure associated with the transfer of raw water to the reservoir, or the transfer of water from the reservoir to public water supply network. Again, the details of these transfers will be subject to further work, the outcomes of which will be subject to consultation and engagement.

The central pink area in Figure 5 depicts Polygon C, as described in Stage 4. The surrounding grey area depicts the area proposed for associated development, discussed above.

Figure 5: Preliminary site boundary for Fens Reservoir and associated development



Appendix A – Site Selection Criteria

The criteria applied during the site selection process have been grouped into five categories. Table 1 lists the aspects that were considered during the different stages of the site selection process explained in chapters 2 and 3 to inform the best performing polygon.

Table 1: Aspects considered against the respective criteria during site selection

Category	Criterion	Aspects considered
Community	Flood risk	• Flood zones • Tidal flood risk • Fluvial and surface water flood risk • Residual risk from flood defence breach or overtopping • Risk from other reservoirs • Breach of the reservoir embankment • Emergency drawdown.
	Land grade and soils	• Agricultural land classification • Soil types, including peat • Historic and authorised landfills • Active and closed mining sites • Unexploded ordinances.
	Property and businesses	• Existing land use (residential, agricultural or non-agricultural businesses) • Land and property requirements of both construction and operation in terms of land take (temporary and permanent) • Access to community receptors (private property, business, community facilities and areas of open space or recreation) • Compulsory acquisition impacts from land referencing.
	Traffic and transport	• Road network, including Strategic Road Network • Public transport • Construction HGV traffic • Public Rights of Way • Rail and River Transport • Access and transport routes (potential impact on villages) • Major utilities infrastructure.
Cost and Technical	Ground condition risk	• Bedrock geology and faulting • Superficial geology (type and thickness) • Hydraulic failure due to uplift.
	Whole life costs	• Capital (current methods of construction) • Operational (dominated by water pumping) • Whole life costs.
Environmental	Air quality	• Air Quality Management Areas • Receptors likely to be impacted during construction.
	Carbon emissions	• Capital carbon (earth works and haulage) • Operation carbon (water pumping) • Whole life carbon • Carbon sequestration – peat soils.

Category	Criterion	Aspects considered
	Historic environment	• Conservation Areas • Registered Parks and Gardens • Registered Battlefields • World Heritage Sites • Scheduled Monuments • Listed Buildings • Non-designated heritage assets • Archaeology and geoarchaeology.

	Landscape character and visual amenity	• Designated landscapes, including
		  ○ Areas of Outstanding Natural Beauty
		  ○ National Parks
		• Valued landscape features and elements
		• Designated views
		• Visual receptors.

	Nature conservation and biodiversity	• Designated sites, including,
		  ○ Special Areas of Conservation and Possible Special Areas of Conservation.
		  ○ Special Protection Areas and Potential Special Protection Areas
		  ○ Ramsar
		  ○ Sites of Special Scientific Interest and their impact risk zones
		  ○ Important Bird Areas
		  ○ Local Wildlife Sites
		  ○ County Wildlife Sites
		  ○ Local Geological Sites
		  ○ Local Nature Reserves
		  ○ National Nature Reserves.
		• Priority habitats
		• Ancient Woodland
		• Other habitats
		• Protected species
		• Natural capital and ecosystem services
		• Conservation targets (conserve, restore and establish).

	Noise	• Receptors likely to be impacted during construction.
	Water quality (WFD assessment)	• WFD Level 2 assessment • Groundwater and surface water quality • Groundwater Source Protection Zones • Statutory main rivers.
Planning	Relationship with land designated for planning purposes	• Local plan land use allocation • Neighbourhood Plans • Nationally significant infrastructure projects • Major development proposals • Green Belt • Safeguarded land (minerals, airfields) • Town and village greens • Designated common land.
Potential benefits	Agricultural benefits	• Soil resources and Agricultural Land Classification • Farming (organic, regenerative) • Horticulture • Water abstraction.

Category	Criterion	Aspects considered
	Biodiversity and environmental benefits	• Biodiversity net gain • Nature Recovery Network • Habitat connectivity and corridors • Country/environmental stewardship schemes • Conservation targets (conserve, restore and establish) • Existing schemes and local landowner involvement • Royal Society for the Protection of Birds reserves.
	Flood risk benefits	• Surface water storage • Wetland restoration/creation • Local landowner involvement • Enhancement of existing schemes • Watercourse restoration • Floodplain reconnection and storage by embankment removal.
	Landscape and heritage benefits	• Enhancing landscape • Enhancing access and interpretation of landscapes and heritage • Preserving historic environment information • Connecting local communities with their heritage.
	Socio-economic benefits	• Sustainable transport • Active travel • Recreation/tourism • Connecting people with nature • Local employment • Local green space • Environmental education.

Appendix B - Stage 4 Location Plans

Figure B1: Polygon A Location Plan

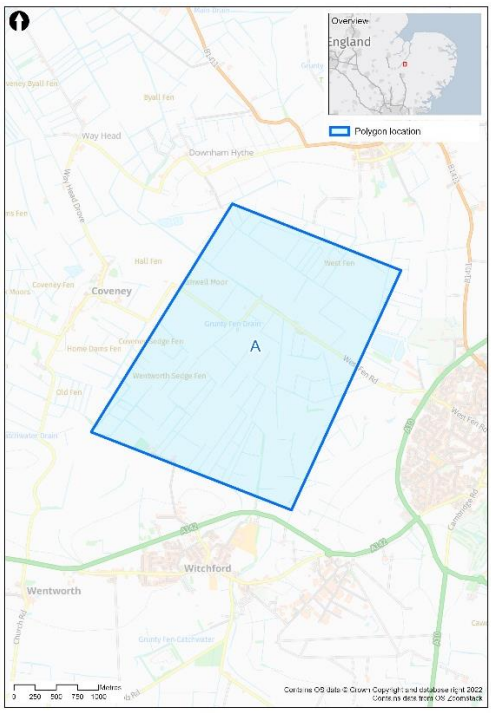


Figure B2: Polygon B Location Plan

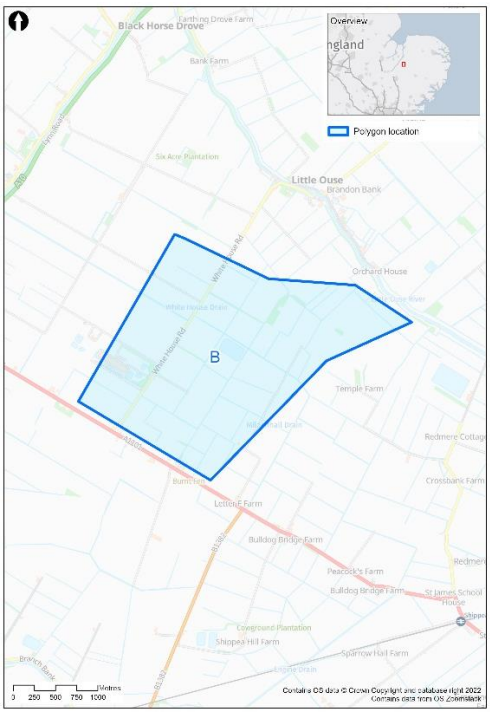


Figure B36: Polygon C Location Plan

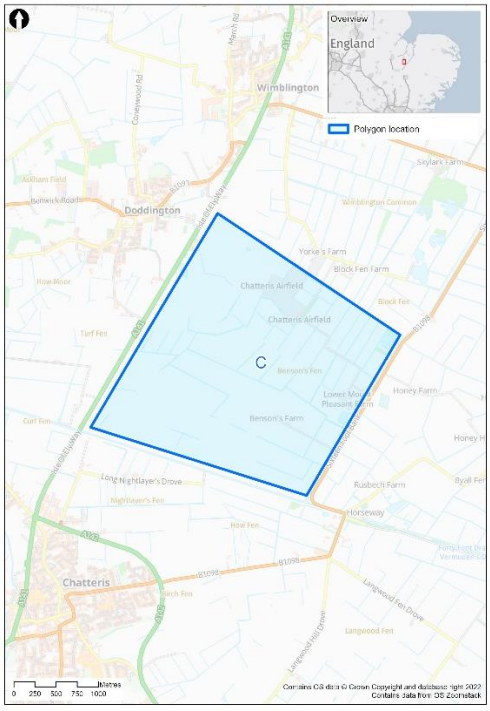
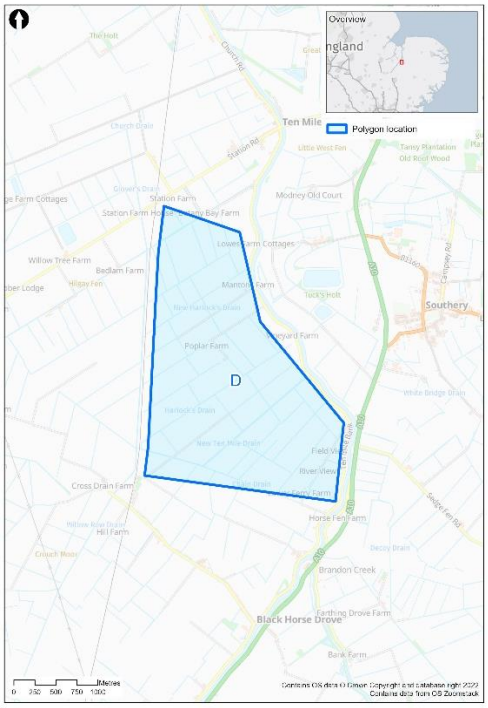


Figure B47: Polygon D Location Plan



Appendix C – Stage 4 Appraisal Summary

Table 2 - Stage 4 appraisal summary of distinguishing polygon features

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
Community	Flood risk	No risk from overtopping of existing flood defences.	Potential risk from overtopping of existing flood defences on the Little Ouse River.	No risk from overtopping of existing flood defences.	No risk from overtopping of existing flood defences.
		Requires diversion of approximately 7.5km internal drainage board (IDB) drains and approximately 1.8km of channel widening.	Requires diversion of approximately 1.5km IDB drains.	Does not require diversion of IDB drains.	Requires diversion of approximately 4.8km IDB drains.
		Very low risk from breach of the existing Hurst Drove reservoir.	No risk of flooding from existing reservoirs.	Very low risk from breach of the existing Ouse Washes Flood Storage Area (FSA).	No risk of flooding from existing reservoirs.
	Land grade and soils	Loss of predominantly Grade 2 (very good) Best and Most Versatile (BMV) agricultural land. Large areas of Grade 1 (excellent) land present across the polygon and Grade 3a (good) areas to the south/ southeast.	Loss of predominantly Grade 1 (excellent) BMV agricultural land and small areas of Grade 2 (very good) land.	Loss of predominantly Grade 2 (very good) BMV agricultural land, with the smallest loss of Grade 1 (excellent) land of all polygons.	Largest loss of Grade 1 (excellent) BMV agricultural land, with some Grade 2 (very good) agricultural land lost.
	Property and businesses	Loss of five residential properties, and likely to impact the viability or result in the loss of one non-agricultural business.	Loss of two residential properties, and likely to impact the viability or result in the loss of one non-agricultural business.	Loss of ten residential properties, and likely to impact the viability or result in the loss of five non-agricultural businesses, including potential recreational facilities.	Loss of five residential properties, with no impact upon non-agricultural businesses anticipated.
		Total land take of around 26 agricultural holdings.	Total land take of around 15 agricultural holdings. Loss of mushroom farm which was	Total land take of around 13 agricultural holdings.	Total land take of around 14 agricultural holdings.

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
			considered to be a significant commercial undertaking.		
	Traffic and transport	Requires West Fen Road and Common Road to be rerouted. Requires realignment of three Public Right of Way (PRoW).	Loss of White House Road which connects the Little Ouse village to the A1101. Polygon does not encroach upon any PRoW.	Loss of Block Fen Drove, which appears to only serve the airfield, so no diversion route required as the airfield would no longer exist. Requires realignment of four PRoW.	The polygon partly overlays the Ten Mile Bank. Polygon does not encroach upon any PRoW.
Cost and technical	Ground condition risk	Underlain by Kimmeridge Clay and Ampthill Clay, suitable for founding embankment and sourcing embankment construction material. Likely to achieve a cut-fill balance with the lowest average thickness of the superficial layer, at approximately 1m. Poor quality superficial material with less than 50% considered reusable for construction and landscaping. Negligible risk of hydraulic uplift.	Underlain by Kimmeridge Clay, suitable for founding embankment and sourcing embankment construction material. Likely to achieve a cut-fill balance with a low average thickness of the superficial layer, at approximatley1.6m Poor quality superficial material with less than 50% considered reusable for construction and landscaping. Negligible risk of hydraulic uplift.	Underlain by Ampthill Clay, suitable for founding embankment and sourcing embankment construction material. Likely to achieve a cut-fill balance with a low average thickness of the superficial layer, at approximately 1.4m. High quality superficial material with approximately 75% considered reusable for construction and landscaping. Negligible risk of hydraulic uplift.	Underlain by Kimmeridge Clay, suitable for founding embankment and sourcing embankment construction material. Difficult to achieve a cut-fill balance with the highest average thickness of the superficial layer, at approximately 3.8m. Poor quality superficial material with less than 50% considered reusable for construction and landscaping. Negligible risk of hydraulic uplift.
	Whole life cost	Lowest whole life cost at an estimated £1,230 million Net Present Value (NPV) (based on core scope before risk and early development phase contingency are applied). Estimate reflects the ease of achieving a cut-fill balance and costs associated with water pumping requirements during operation.	Second highest whole life cost at an estimated £1,360 million NPV (based on core scope before risk and early development phase contingency are applied). Estimate reflects the ease of achieving a cut-fill balance and costs associated with water pumping requirements during operation.	Second lowest whole life cost at an estimated £1,250 million NPV (based on core scope risk and early development phase contingency are applied). Estimate reflects the ease of achieving a cut-fill balance and costs associated with water pumping requirements during operation.	Highest whole life cost at an estimated £1,559 million NPV (based on core scope before risk and early development phase contingency are applied). Estimate reflects the difficulty in achieving a cut-fill balance and costs associated with water pumping requirements during operation.
Environmental	Air quality	Not a distinguishing factor.			

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
	Carbon emissions	Emissions estimated at 410 $ktCO_2e$ during construction and circa. 30 ktCO2e/year during operation, with a whole life carbon NPV cost estimated at £158 million.	Emissions estimated at 450 $ktCO_2e$ during construction and circa. 30 ktCO2e/year during operation, with a whole life carbon NPV cost estimated at £167 million.	Emissions estimated at 430 $ktCO_2e$ during construction and circa. 30 ktCO2e/year during operation, with a whole life carbon NPV cost estimated at £163 million.	Emissions estimated at 430 $ktCO_2e$ during construction and circa. 27 ktCO2e/year during operation, with a whole life carbon NPV cost estimated at £159 million
	Historic environment	11 designated assets identified within 1km of the polygon. Located upon the Lancaster crash site near Witchford, which crashed during World War II. Designated as a protected place under Protection of Military Remains Act 1986. Potential to result in the high end of 'less than substantial harm' by impacting on the intervisibility of the Grade I Ely Cathedral and Coveney Conservation Area, including the removal of key views of the cathedral.	No designated assets identified within 1km of the polygon. No potential for harm or impact on designated heritage assets identified.	23 designated assets identified within 1km of the polygon. Potential to result in middle to lower end of 'less than substantial harm' based on the proximity to the scheduled remains of a Roman settlement and Bronze Age barrows on Honey Hill. There may also be potential impact on the setting of conservation areas.	No designated assets identified within 1km of the polygon. No potential for harm or impact on designated heritage assets identified.
	Landscape character and visual amenity	Average embankment height estimated at 11.5m, relative to the mean site elevation at 0.7 metres above Ordnance Datum (mAOD) with a crest elevation of 12.2mAOD. Maximum embankment height relative to ground level estimated at 12.7m. Potential impact on protected views of the Grade I listed Ely Cathedral from West Fen Road, Witchford and the A142.	Average embankment height estimated at 17.1m relative to the mean site elevation at -1.5mAOD with a crest elevation of 15.6mAOD. Maximum embankment height relative to ground level estimated at 17.5m. Potential impact on local landscape character and views.	Average embankment height estimated at 12.3m relative to the mean site elevation at 0.2mAOD with a crest elevation of 12.5mAOD. Maximum embankment height relative to ground level estimated at 16.1m. Potential impact on local landscape character and views.	Average embankment height estimated at 16.6m relative to the mean site elevation at -0.6mAOD with a crest elevation of 16mAOD. Maximum embankment height relative to ground level estimated at 14.1m. Potential impact on local landscape character and views.
	Nature conservation and biodiversity	Partially situated within the Ouse Washes Goose and Swan Functional Land site of special	Wholly situated within the Ouse Washes Goose and Swan Functional Land SSSI IRZ.	Situated outside of the Ouse Washes Goose and Swan Functional Land SSSI IRZ,	Wholly situated within the Ouse Washes Goose and Swan Functional Land SSSI IRZ.

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
		scientific interest impact risk zone (SSSI IRZ).		although supports habitats consistent with those in the IRZ.	
		Potential indirect impacts on four Local Wildlife Sites (LWS) within 2km of the boundary.	Potential indirect impact on one LWS within 2km of the boundary.	Potential indirect impacts on two LWS within 2km of the boundary, including the Forty Foot Drain County Wildlife Site, immediately southeast of the boundary.	Potential indirect impact on one LWS within 2km of the polygon.
		Likely loss of a 0.3ha of traditional orchard (Priority Habitat) with potential to indirectly affect 5ha of Priority Habitat within 1km of the boundary.	Likely loss of 4ha lowland mixed deciduous woodland (Priority Habitat) with potential to indirectly affect 1ha of Priority Habitat within 1km of the boundary.	Likely loss of 4ha coastal and floodplain grazing marsh (Priority Habitat), with potential to indirectly affect 39ha of Priority Habitat within 1km of the boundary, including 5ha of coastal and floodplain grazing marsh directly adjacent.	Potential to indirectly affect 1ha of Priority Habitat within 1km of the boundary.
	Noise	Not a distinguishing factor.			
	Water quality (WFD assessment)	Potential loss of approximately 51km of open watercourses, including potentially impacting the Ely Ouse (South Level) and Great Ouse.	Potential loss of approximately 46km of open watercourses, including impacting the Ely Ouse (South Level) and the Cam and Ely Ouse Woburn Sands groundwater body.	Potential loss of approximately 59km of open watercourses, including potentially impacts on the Middle Level waterbody.	Potential loss of approximately 55km of open watercourses, including potentially impacting the Ely Ouse (South Level).
Planning	Relationship with land designated for planning purposes	No loss of common land, open or green spaces.	No loss of common land, open or green spaces.	No loss of common land, open or green spaces.	No loss of common land, open or green spaces.
		Half of the polygon is situated within a Mineral Safeguarding Area (MSA) (Sand and Gravel).	Part of the polygon intersects with a MSA (Sand and Gravel).	Polygon intersects with a MSA (Sand and Gravel).	Does not intersect an MSA.
		Witchford Wastewater Treatment Works and its safeguarding zone designation is located within the southeast boundary of the polygon, requiring relocation.	Within the bird strike hazard zone for Royal Air Force (RAF) Lakenheath and Mildenhall airfields (latter planned for closure in 2024).	Loss of unlicensed Chatteris Airfield, given its location within the polygon boundary.	Southery airfield is located approximately 1.5km from the polygon.
		No committed development identified.	Committed development areas identified within the polygon; one for an existing horticultural business, and another 'live'	No committed development identified.	No committed development identified.

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
		Within a Neighbourhood Planning Area, namely the Witchford Neighbourhood Development Plan, affecting policies in the adopted plan.	planning application for a 70km long pipeline, as part of an Anglian Water project which crosses the north-eastern corner.		
Potential benefits	Agricultural benefits	Not a distinguishing factor.			
	Biodiversity and environmental benefits	Potential to connect to adjacent Nature Recovery Network (NRN).	Limited opportunity to create habitat corridors, with no NRN located within 500m of the polygon.	Best opportunity for enhancing habitat connectivity through linking with extensive areas of NRN adjacent to the polygon and owing to the proximity of the Forty Foot Drain. Opportunity to increase ecological connectivity owing to the adjacent complex of wetland, grassland and woodland habitats at Wimblington Common.	Limited opportunity to create habitat corridors, with no NRN located within 500m of the polygon.
	Flood risk benefits	Good opportunity for benefits, including an increase in local catchment flood storage through storage of water in reservoir/ channel diversions, a new IDB FSA, use of Grunty Fen Natural Flood Management, and expansion of Coveney Nature Reserve.	Limited opportunity for benefits, including using the existing drainage network and establishment of a new IDB FSA that could be utilised for storage.	Greatest opportunity to reduce flood risk including expansion of the Cranbrook and Counter Drain to increase catchment flood storage, irrigation, and water supply; reinstating Forty Foot Drain could provide opportunities for storage; reducing pressure on the IDB system and removal of the pumping station could benefit receptors downstream; and the removal of Welches Dam could provide reservoir water supply.	Limited opportunity for benefits, including the establishment of a new IDB FSA that could be utilised for storage.
	Landscape and heritage benefits	Not a distinguishing factor.			
	Socio-economic benefits	Close proximity to train stations (less than 3km) and bus routes would provide good opportunity for the reservoir to become a regional attraction, with opportunities to	Close proximity to train stations (less than 3km) and bus routes would provide good opportunity for the reservoir to become a regional attraction, with opportunities to	Close proximity to train stations (5km) and bus routes would provide good opportunity for the reservoir to become a regional attraction, with opportunities to	Limited opportunity to promote sustainable travel to and from the reservoir owing to the distance from the nearest train station.

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
		encourage sustainable travel to and from the reservoir.	encourage sustainable travel to and from the reservoir.	encourage sustainable travel to and from the reservoir.	
		Good opportunity for river transport within 5km of the boundary.	Good opportunity for river transport within 5km of the boundary (River Little Ouse adjacent to polygon).	Good opportunity for river transport within 5km of the boundary (Forty Foot and Sixteen Foot Drains adjacent to polygon).	Good opportunity for river transport within 5km of the boundary (River Great Ouse adjacent to polygon).
		Highest number of people living within 5km of the boundary, thereby presenting the best opportunity for the reservoir to benefit local communities in social, economic and other terms.	Low number of people living within 5km of the boundary, thereby presenting some opportunity for the reservoir to benefit local communities in social, economic and other terms.	High number of people living within 5km of the boundary, thereby presenting a good opportunity for the reservoir to benefit local communities in social, economic and other terms.	Lowest number of people living within 5km of the boundary, thereby presenting the least opportunity for the reservoir to benefit local communities in social, economic and other terms.
		Good opportunity to create a recreational destination, including the potential to create wider links to heritage assets through enhancing links to the city of Ely and the heritage interpretation of the Fens landscape.	There are no public green spaces within 1km of the Polygon. Stakeholders identified that in the area, people tend to travel to Ely to access outdoor space. This presents an opportunity to increase local green space provision.	Good opportunity to create a recreational destination, benefitting communities in an area of lower economic activity and potentially provide wider links to heritage assets.	There are no public green spaces within 1km of the Polygon. This represents an opportunity, however since the Polygon is relatively isolated, very few people would be able to enjoy new local green space.
		Opportunity to promote active travel and lifestyles through connecting with the NCN 1km from the boundary.	Opportunity to promote active travel and lifestyles through connecting with the NCN 7km from the boundary.	Opportunity to promote active travel and lifestyles through connecting with the NCN 4km from the boundary.	Opportunity to promote active travel and lifestyles through connecting with the NCN 1km from the boundary.
		Highest number of educational facilities (57) within 5km of the polygon, providing opportunity for environmental education and field trips.	High number of educational facilities (10) within 5km of the polygon, providing opportunity for environmental education and field trips.	High number of educational facilities (15) within 5km of the polygon, providing opportunity for environmental education and field trips.	Lowest number (3) of educational facilities within 5km of the polygon, limiting the opportunity for environmental education and field trips.
		Good opportunities for local socio-economic benefits owing to proximity to Ely. However, the number of existing recreational sites, access to existing facilities and green space is highest for Polygon A compared to the other Polygons.	Limited opportunities for local socio-economic benefits owing to its relatively isolated location compared to the other polygons.	Good opportunities for local socio-economic benefits. The local authority has the highest percentage of benefit claimants and the highest proportion of population living in areas of deprivation (i.e. income, employment, education, health and disability) of the four polygons.	Limited opportunities for local socio-economic benefits owing to its relatively isolated location compared to the other polygons.

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
		East Cambridgeshire District Council has the lowest level of deprivation of the four polygons.	East Cambridgeshire District Council has the lowest level of deprivation of the four polygons.	Stakeholders identified that Fenland District Council has a longstanding ambition for a country park near Chatteris and a reservoir could help realise that ambition. They also noted that there is very little green space in the area and that people have to travel a long way to access green space.	The Borough Council of King's Lynn and West Norfolk has a low level of deprivation.