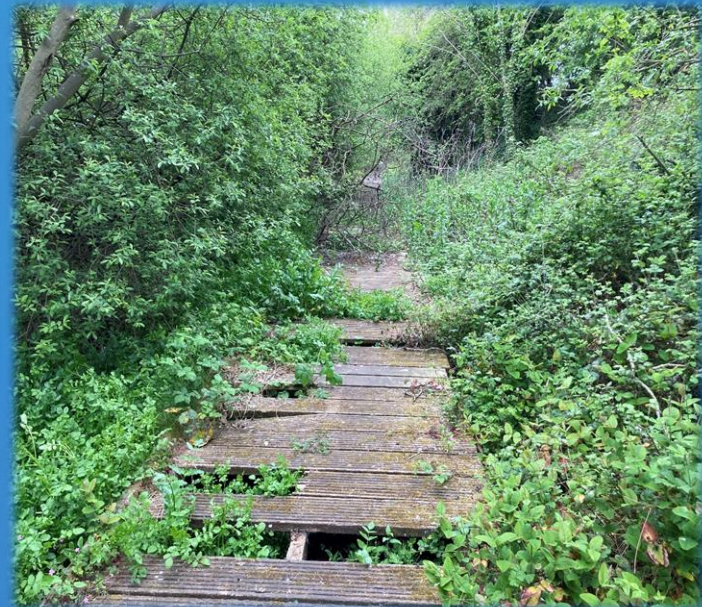


East Suffolk Drainage Board

Report to Lowestoft Town Council

Lowestoft town pond and watercourse appraisal

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Version Control

File Name	Version	Date	Author	Amendments / comments
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P J CAMAMILE
DATA PROTECTION OFFICER

Front Cover: Gainsborough Road Pond, Kensington Gardens Boating Lake, Kirkley Fen Lake and Water Lane from site visits on 11/05/2022.

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1. Introduction and background

Water Management Alliance (WMA) Project Delivery Engineer made contact with members of Lowestoft Town Council (LTC) on 25/03/2022 to arrange a site visit date for various locations throughout the town to view and assess watercourses, ponds, and lakes with an aim to advise on potential maintenance work needs.

A site visit was conducted on Wednesday 11th May 2022 with both WMA Operations Manager (ESIDB, WLY&LIDB) and Project Delivery Engineer present alongside three members of Lowestoft Town Council. Initial meet was held at Hamilton House before car sharing and visit to six sites over an approximate 4–5 hour period.

WMA Engineers agreed to follow up with a report of their findings to Lowestoft Town Council in due course considering all points discussed on the site visits. A request was made by WMA that any relevant information available regarding the assets visited be shared with them as soon as possible.

The WMA provide a wealth of services across several sectors. We are locally based and use local suppliers to maximise efficiencies, quality of work, support to local economy establish reliable performance. Our current charge out rates for our employee services can be found at: [https://www.wlma.org.uk/uploads/WMA \(East Anglia\) Current Charge-Out Rates.pdf](https://www.wlma.org.uk/uploads/WMA%20(East%20Anglia)%20Current%20Charge-Out%20Rates.pdf)

All our work is undertaken within a short simple contract, and associated terms and conditions. The contract can be tailored to suit your needs and can be discussed with our lead organisation contact.

2. Work completed to date

2.1. Initial site visits

On Wednesday 11th May 2022 a joint site visit was made to six locations across Lowestoft with three members of Lowestoft Town Council and two members of Water Management Alliance staff present.

2.2. WMA sites appraisal

This document entitled “Report to Lowestoft Town Council- Lowestoft town pond and watercourse appraisal” is the follow up report that WMA staff agreed to share back to LTC with a view to forming future management recommendations.

It includes an assessment of all sites visited on the 11/05/2022, recommendations for immediate and future management actions and outline costings.

The WMA have made no charge to LTC for the time taken by their engineers to undertake site visits or conduct this documented appraisal.

2.3. LTC data sharing

WMA Project Delivery Engineer received a follow up email from LTC on 13/05/2022 with two documents attached named: 2022 04 26 - SW114 - Pond, Sparrows Nest, Whapload Road, Lowestoft.pdf and AbrehartEcologyLtd_AquaticInvertebrateSurvey_Lowestoft_2021.pdf. This has been used to help inform future management recommendations.

NB: W3W data in the below headings is a reference to the What 3 Words global geolocation system freely available from the internet / App, inserted in this document as a series of hyperlinks.

3. Asset appraisal

Having made a visit to all six sites on the 11/05/2022 a summary of those visits, appraisal of issues and recommendations for future management and cost estimates is now presented for each below.

Seasonality and time of year work to be delivered must be considered due to the aspects of proposed vegetation management and established habitat that is present across all sites. Ad-hoc site specific assessments will be necessary.

It is advisable to have a thorough environmental search undertaken before any works are planned.

Standard utility services searches would also be required, but normally would form part of the pre-works planning for health and safety management.

All costs are presented as a best endeavours estimate, further refinement of costs would be possible upon award and commission of WMA to provide desired services. We hold no responsibility for the accuracy or otherwise of the financial information presented below.

3.1. Water Lane

Location:	TM 54298 94036 W3W: monkey.lungs.inspector Off Water Lane / Church Road
Description:	Approximately 450m linear watercourse. Channel width and depth varies. Majority sandy channel bed. Vast amounts to debris / rubbish within channel. Old timber boardwalk present raised on top of redundant timber railway sleepers over an approximate 100m central section. Culverted section under railway bridge.
Aim:	Improvement of existing watercourse to meet environmental objectives. Opening for public access not required in fact discouraged to minimise health and safety liability risks.

3.1.1. Inspection appraisal

Upstream Section to Church Road Bridge (c115metres)

Upstream start taken as approximately W3W: hangs.lime.copper

Upper reaches have a narrow channel, <600mm wide, shallow and no useful bed. Heavily vegetated and overgrown. Runs parallel to public footpath / trackway. Open access. No clear channel in places. Likely surface water runoff from drainage system, could be confirmed with services search.

Channel goes under road bridge in open section and appears out other side in heavily vegetated area.

Middle Section Church Road Bridge to Rotterdam Road Bridge (c200metres)

Channel is over wide and quite silted up. Heavily vegetated with poor access. Channel is linear in form. Large amounts of debris and detritus exist in the watercourse and surrounding banksides.

Old timber boardwalk boards are dilapidated and generally failed, underlying relict timber railway sleepers are also in poor condition. Channel flow diverts under this structure.

Public access down steep sided vegetated embankment from trackway.

Ends in a rock gabion basket headwall just upstream of the road bridge where it appears to be piped for around 35metres under the bridge. No clear easy access. No grills on upstream pipe intake.

Lower Section Rotterdam Road Bridge to Marham Road (c135m)

Water exits the rock gabion headwall in a pipe and flows back into open channel. No inspection chambers appear present for pipe. Conveyance through a pipe is assumed at this point but logical. No idea of pipe internal condition, age, or percentage of free flow.

Channel is heavily vegetated as are bank sides.

Twin gated access is present in right bank side safety fencing. No obvious trackway on the other side of this although room likely exists to create such.

Debris and detritus present throughout channel length.

Open channel concludes at downstream end as watercourse appears to enter a concrete filled sandbag headwall and pipe for further conveyance out of sight. Worth checking service searches here to assess any likely 3rd party involvement such as an Anglian Water Watercourse.

3.1.2. Recommendations

Plant, equipment, and vehicular access to this area is suitable and wouldn't not impact massively upon proposed operations or constrain work too much.

Seasonality and time of year work to be delivered must be considered due to the aspects of proposed vegetation management and established habitat that is present.

It is advisable to have a thorough environmental search undertaken before any works are planned. Standard utility services searches would also be required, but normally would form part of the pre-works planning for health and safety management.

Upstream Section to Church Road Bridge (c115metres)

- i. Channel and bank sides debris and detritus removal and disposal.
- ii. Channel and bank side vegetation maintenance, shrub, and tree maintenance.
- iii. Reinstatement of a proper cut channel to allow conveyance of water. Channel to be narrow in this section to maintain relatively good velocity and an element of self-cleansing.
- iv. De-silted material to be placed to left bank before edge of public footpath / trackway to maximise use of natural safety barrier.

Middle Section Church Road Bridge to Rotterdam Road Bridge (c200metres)

- v. Channel and bank sides debris and detritus removal and disposal.
- vi. Channel and bank side vegetation maintenance, shrub, and tree maintenance.
- vii. Removal of old failed and redundant timber boardwalk and relict railway sleeper structure.
- viii. Reinstatement of a proper cut channel to allow conveyance of water. Channel to be narrow in this section to maintain relatively good velocity and an element of self-cleansing.
- ix. De-silted material to be held locally and placed to create a series of meanders with raised islands encouraging flow and deposition as necessary.
- x. Consideration to installation of metal bar debris screen on upstream end of pipe intake.
- xi. Assessment of piped section in terms of conveyance capacity due to any debris or silt build up is advisable. Potential CCTV camera inspection would aid this.

- xii. Determine overall pipe condition to ensure no further remedial work to this section is needed.
- xiii. Establish any information on as constructed records for the piped section, this may lay with local highways teams or district council officers.

Lower Section Rotterdam Road Bridge to Marham Road (c135m)

- xiv. Channel and bank sides debris and detritus removal and disposal.
- xv. Channel and bank side vegetation maintenance, shrub, and tree maintenance.
- xvi. Reinstatement of a proper cut channel to allow conveyance of water. Channel to be narrow in this section to maintain relatively good velocity and an element of self-cleansing.
- xvii. De-silted material to be held locally and placed to create a series of meanders with raised islands encouraging flow and deposition as necessary.
- xviii. Existing access gates to be reinstated and new access path for future maintenance created.
- xix. Consideration to installation of metal bar debris screen on upstream end of pipe intake / concrete sandbag headwall.

3.1.3. Cost estimate

Upstream Section to Church Road Bridge (c115metres)

£ 3,839.00

Middle Section Church Road Bridge to Rotterdam Road Bridge (c200metres)

£ 14,110.00

Indicative costs for CCTV survey and report £2,000 Net.

Lower Section Rotterdam Road Bridge to Marham Road (c135m)

£ 4,327.00 Net

3.2. Gainsborough Drive Pond

Location:	TM 53978 95744 W3W: siblings.momentous.opens Off Gainsborough Drive / Raphael Walk
Description:	Approximately 45m long by 15m wide oval shaped pond. Depth varies and subject to survey confirmation. No edge protection. Some surrounding vegetation growth to channel / bank sides, small shrubs, and established trees. Pond itself has some reeded margins and has a fair degree of oxygenating weeds present throughout. Northern end appears lower and prone to overtopping onto adjacent grassland and pathways.
Aim:	De-silting of existing pond to meet environmental objectives and retain pond functionality.

3.2.1. Inspection appraisal

No visible input or output pipes to the pond itself, so it fills according to rainfall events and evaporates during periods of drier, hot, windy conditions.

Access to the site is reasonable with larger machine access possible from most of the north, through east to southern perimeter. Excavator and dumpers therefore have enough access to perform a de-silt.

In advance of any work it would be prudent to establish the material composition of the pond base and sides, i.e. if it is clay lined then extra precaution would have to be taken with any machinery so as not to break the impermeable seal of the clay lining.

3.2.2. Recommendations

Obtain information from LTC around existing survey / silt information (i.e. testing for contaminants).

De-silt operation to remove accumulated sediment from pond base.

Install a slightly raised bund to the northern perimeter of the pond, to alleviate overspill during heavy rainfall events, this assumed to be possible from the material excavated from pond, otherwise an additional cost to import clay material will be realised.

De-silt operation with 14tn conventional excavator and a 16tn long reach excavator. Sediment to be moved away by 9tn forward tipping dumper and spread in grassed area to the immediate south, left to drain then tidied and re-seeded.

Ecologist support needed to ensure compliance with environmental standards.

Devise an aspirational management plan for the site, e.g. ecological improvements, leisure, etc.

3.2.3. Cost estimate

£ 19,760.00 Net

3.3. Sparrows Nest Pond

Location:	TM 55138 94445 W3W: puzzle.gazed.cling Off Whapload Road / The Ravine
Description:	Approximately 12m long by 6m wide by 6-700mm deep rough kidney shaped ornamental pond. 4-500mm raised brick edge protection. Cracking across various areas on the base has led to water leaking. Pond is currently drained dry and awaiting repair. Used as ornamental pond and normally filled with fish. Adds value to local amenity area of Sparrows Nest Park locality and associated businesses, believed to have been present for over 100 years.
Aim:	Repair existing cracking and or reform base / sides to extend functional life of pond.

3.3.1. Inspection appraisal

Pond has been present for a number of years and is showing visible signs of recent and historic movement and some patch repairs. The pond needs to remain in-situ in current form and size. It could be possible to use simple crack fillers / patching but this will not give a long term fix to sustain the duration of the pond for many future years.

The two main repair options that will give a longer sustained life are either further concrete reforming / repairing or fibreglass. For longevity we feel that fibreglass would be more suited.

3.3.2. Recommendations

Line the existing pond with fibreglass, work undertaken with specialist guidance and input from sub-contractor. Subject to further advice this would be enough to alleviate future movement and cracking of the lining.

Devise an aspirational management plan for the site, e.g. ecological improvements, leisure, etc.

3.3.3. Cost estimate

£ 12,200.00 Net

3.4. Kensington Gardens Boating Lake

Location:	TM 54214 91316 W3W: mess.stroke.desks Off Kirkley Cliff Road
Description:	Approximately 40m diameter by 6-700mm deep circular lake / boating lake. No edge protection. Used as an ornamental / boating lake as part of the local coastal gardens area. Access for plant is limited and not easy.
Aim:	Maintenance of boating lake to include dewatering and cleaning of debris / sludges and occasional steam / pressure cleaning. Management of algae / weed growth.

3.4.1. Inspection appraisal

This large pond currently acts as an ornamental / boating lake. It is limited at a relatively shallow depth. It was full at the time of visit, with some signs of weed / algal growth. De-silt operation to be undertaken annually or alternate years.

Any further works concerning water quality to be referred to a specialist sub-contractor to ensure sensitivity to species present and or dosage rates, etc.

3.4.2. Recommendations

De-water pond with a 3inch pump, assume water to be safe quality for disposal into local surface water drainage system. Pressure washer to be used clean down.

Allow for one lorry with vacuum hose to dispose of final sediment arisings (this at approx.. £1,700). Assume a free water supply to refill.

Inspect pond lining and identify any areas for remedial repairs, this cost extra and over based on what is found.

Devise an aspirational management plan for the site, e.g. ecological improvements, leisure, etc.

3.4.3. Cost estimate

£ 7,779.00 Net

3.5. Kirkley Fen Lake

Location:	TM 53799 92057 W3W: tried.issued.hurt Off Southwell Road / Tom Crisp Way
Description:	Approximately 145m long by 50m wide rough rectangular lake with central island feature. Subject to survey, approximately 700mm uniform depth but some likely deeper areas perhaps up to 1.5 – 2.0m. No edge protection. Bank sides are plastic pile / driven timber stakes. Outfall at approximately TM 53687 92048 (W3W: seats.match.lush) into Main River Kirkley Stream. Inspection chamber with suspected penstock (not lifted for confirmation) discharging into approximate 300mm diameter HDPE pipe. Nearby AWS Pumping Station appears to have some piped discharge system into adjacent wet woodland area and small channel linking back into Main River Kirkley Stream, likely to be a high flows / storm water overflow discharge. Established vegetation present around bank edges and island and adjacent areas.
Aim:	Maintenance of lake to include dewatering and desilting / cleaning of debris / sludges. Vegetation maintenance. Improve flow regime to minimise seasonal algae / weed growth.

3.5.1. Inspection appraisal

Surrounding bankside vegetation is much in need of targeted and regular maintenance. Some larger shrub / tree growth would ideally be totally removed. Vegetation showing signs of damaging bank side plastic piling with mass encroachment.

Waterbody was suffering from signs of stagnated flow with weed growth clogging the surface in places and likely to only get worse during forthcoming hot, dry weeks of summer.

From visual inspection there appeared to be a good accumulation of sediment and decaying vegetative matter on the lake bed alongside other debris and detritus. It would appear unlikely to support a large or varied freshwater species population due most likely to water quality limitations.

3.5.2. Recommendations

De-silt of the lake bed, assuming no removal of material from local site (e.g. disposal cost).

Vegetation management to reduce future leaf and debris fall into the lake.

Establish a regular vegetation management programme.

Consider a means to agitate the water to improve circulation and oxygenation levels.

Undertake further water quality analysis to determine limiting chemical factors.

Possible installation of solar powered floating pumps to provide the water agitation and circulation aspiration.

Devise an aspirational management plan for the site, e.g. ecological improvements, leisure, etc.

3.5.3. Cost estimate

£ 26,543.00 Net

Pump installation over and above this, cost depending upon pump size, number and flow rates, etc. Also additional cost may be needed to cover supply of electricity if solar unviable.

DRAFT

3.6. Uplands Road North Pond

Location:	TM 51843 91189 W3W: comically.worksheet.blogging Uplands Road North / Cotmer Road junction
Description:	Approximately 20m long by 10m wide pond. Subject to survey, approximately 600mm depth, likely deeper centre. No edge protection. Vegetation present around edges.
Aim:	Maintenance of pond to include dewatering and desilting as necessary. Vegetation maintenance.

3.6.1. Inspection appraisal

Pond is fairly non-descript located in a small corner of a residential estate. The pond fringes are quite overgrown with a limited number of species type. A number of common carp were present in the pond on day of inspection. Sediment and detritus build up is evident but pond does appear to still be supporting likely average water quality due to the presence of the fish and other limited aquatic vegetation. Email from L Elliott on 22/06/2022 confirmed presence of more fish in the pond, Rudd and up to a couple of hundred likely.

3.6.2. Recommendations

- i. Undertake minor bi-annual vegetation management around pond edges.
- ii. Undertake regular debris and detritus removal to sustain amenity appeal and reduce pollution to the local environment.
- iii. Survey pond to establish depth.
- iv. Monitor pond for weed growth.
- v. Devise an aspirational management plan for the site, e.g. ecological improvements, leisure, etc.

3.6.3. Cost estimate

- i. 2No. operatives per day at £522 Net.
- ii. 1 visit included as part of above, after that 2No. operatives per day at £522 Net.
- iii. 2No. operatives including chest waders at £562 Net.
Any technical support from engineers at £75/hour Net.