

## Needham & Laddus I.D.B.

### Consulting Engineers Report – April 2022

#### Weed Control and Drain Maintenance

The weed control and drain maintenance strategy generally accorded with the programme approved by the Board at its last annual meeting.

A joint inspection of the District was undertaken pre-harvest last year to ascertain the Board's requirements for herbicide application and machine cleansing works. The inspection revealed that although some drains contained growths of filamentous algae (Cott) and sporadic stands of emergent and submerged aquatic vegetation, the majority were found to be in a satisfactory condition. As with previous years drains to the west of the system, in the Laddus Drove area, were included in the weed basket cleansing works to ensure any accumulations of Cott were removed before the winter season. Works programmes were also discussed and it was agreed for an herbicide application and additional contracted weed raking, utilising a tractor mounted flail arm fitted with a weed basket, be undertaken where it is deemed necessary.

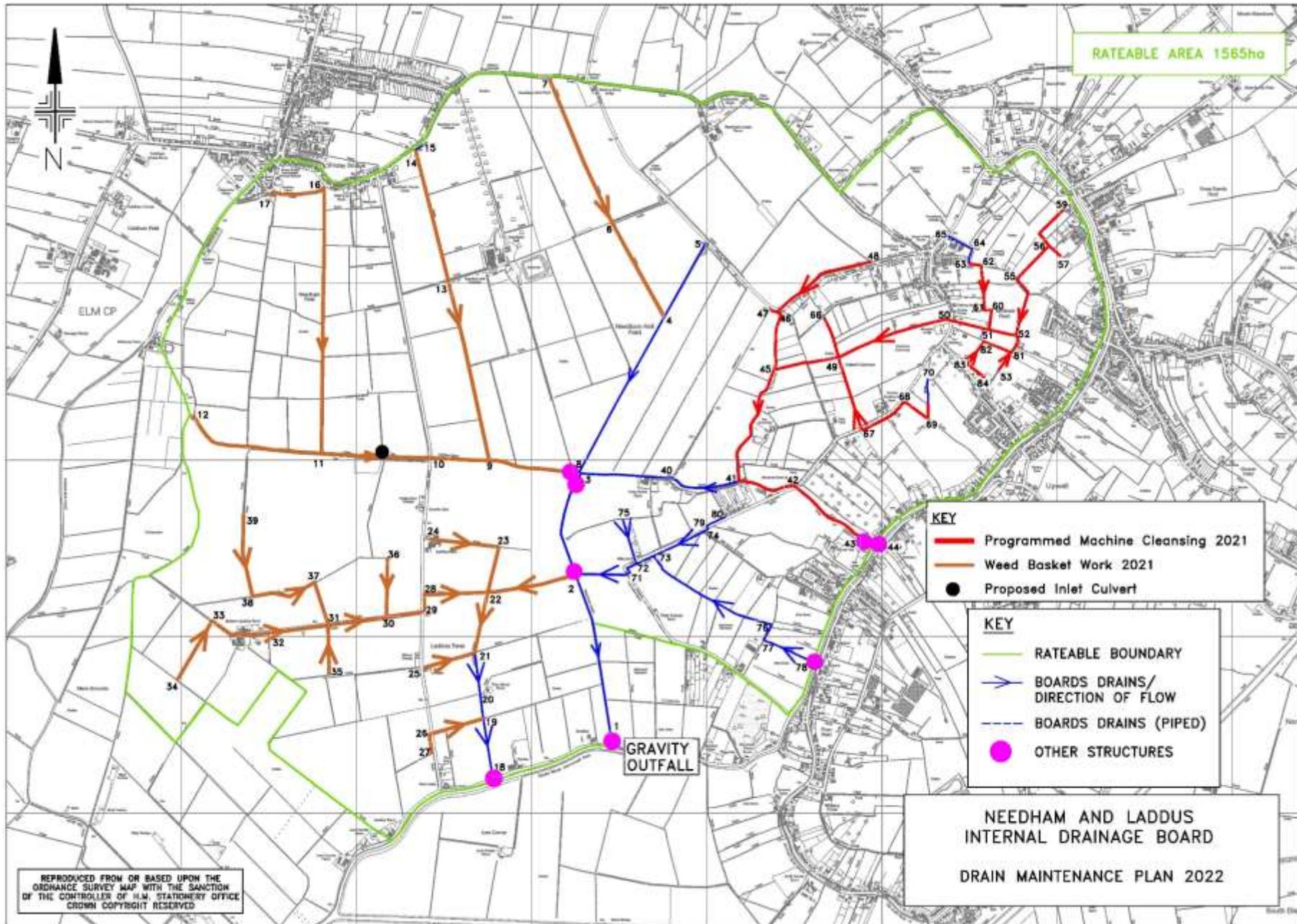
The weed basket works in the west of the system highlighted an issue with access at reach 10-11, where overhead cables and an unlevel grass verge only permit the works to be carried out from the northern arable field side. A side inlet watercourse on this side prevents the tractor/mower combination or excavator from cleaning a small stretch of drain in a vitally important reach, holding back water in drains that directly drain parts of the nearby village of Fridaybridge. To alleviate this issue it is proposed to install a 600mm access



Inlet culvert, reach 10-11

culvert in the side drain, to allow access and the continual cleansing of the adjacent Board's drain. In anticipation that the Board will be in agreement and wish to proceed with the works, a provisional sum has been included within the estimated costs.

Please refer to the plan on the following page indicating the reaches where machine cleansing was deemed necessary to retain the Board's drains in a satisfactory condition.



As the Board's annual meeting falls during the early part of the growing season, a District inspection will be required during the summer months to accurately identify additional maintenance requirements and the weed basket works within the Laddus Drove area. A provisional sum, based on previous years' expenditure, has been allocated within the Board's estimated costs, for works that are likely to be required.

Harrison Agricultural Contractors have indicated that they are available to undertake the Board's flail mowing and tractor mounted bucket requirements for the ensuing year. A sum for the completion of flail mowing District drains has been included within the estimate.

The previously mentioned weedscreen, immediately upstream of the syphon structure at Point 2 has been identified as an outstanding issue in the Board's Health & Safety audit, undertaken by Cope Ltd. With the potential risk of blockage from weed or fly tipped material within the syphon, it would not be possible to remove the screen, leaving the inlet unprotected. The most viable option would be to replace the structure with a more suitable overspill and screen, that are both easier to clean and safer for the user. A contractor has provided an indicative estimate for



**Weedscreen & Overspill, upstream of the Syphon at Point 2**

replacing the old structure with a new overspill, weedscreen and associated access walkway. In anticipation of the Board being in agreement with the proposed works, a provisional sum has been included within the estimated costs.

The estimated costs of this year's recommended Weed Control and Drain Maintenance works follows. A provisional sum has also been included within the Board's budget to allow for any emergency machine cleansing, bank slip repair or culvert clearance works required later in the season.

An additional allowance has also been included in the estimates, in anticipation of an increase in contractors' rates this season, due to the current escalating cost of fuel, labour and machinery.

£

**Provisional Sum**

Allow for the installation of a new culvert in reach 10-11	Item	Sum	2500.00
Allow sum for Roundup application to Board's drains where it is required	Item	Sum	800.00
Allow sum for Machine Cleansing and Weed /Cott removal from Board's Drains	Item	Sum	8625.00

**Estimated Sum**

Flail mowing Board's Drains	Item	Sum	6900.00
Replacement structure upstream of the syphon at Point 2	Item	Sum	10000.00

**Provisional Item**

Allow for emergency machine cleansing, culvert clearance or bank slip repair works. Removal of fly tipped materials.	Item	Sum	2000.00
Fees for inspection, preparation and submission of report to the Board, arrangement and supervision of herbicide applications and maintenance works	Item	Sum	1300.00

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**TOTAL £ 32,125.00**

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**Culvert Replacements at Points 1 & 2**

Following the previous meeting, the grant in aid application was completed and eventually approved by the Environment Agency (EA). The project was awarded grant covering 92% of the costs, leaving only the remaining 8% to be funded by the Board.

Unfortunately, as the approval letter was not gained until September 2021, it was decided that it would be unwise to start the works at the Point 1 main outfall culvert under the road in the late autumn/winter months. However, as the Point 2 works were a bit more straight forward, having a farm track over it and the weather was largely dry at that time, they progressed with those in November 2021 and completed them in December 2021. The replacement culverts were installed to a good standard, within the original budget, and the finished job was tidy with only minimal snagging items needing to be addressed.

A grant claim was put into the EA in February for the expenditure to date. This covers the pipe costs for both sites, preparation costs for Point 1 (such as road closure and services applications), the complete works at Point 2 and the associated engineering and site supervision fees. Another final claim is expected to be submitted in the summer following the completion of the project.



Culvert replacement works at Point 2



The works at Point 1 are programmed to start in May 2022, when the weather should be more suitable for replacing this culvert which has a road over it, with Anglian Water and BT services present and with more involved damming off works in the Old River Nene needed. As previously, regular environmental bank cutting works adjacent to the site have been taking place since early March to discourage nesting birds and water voles from setting up home and preventing the works being undertaken as planned.

### **Planning Applications**

In addition to matters concerning previous applications, the following 12 new applications and associated matters have been received and dealt with since the last meeting:

<i>MLC Ref</i>	<i>Council Ref</i>	<i>Applicant</i>	<i>Type of Development</i>	<i>Location</i>
385	Enquiry	Anglian Water	Grantham to Bexwell pipeline	Bramble Lane, Elm
386	21/00574/F	Robinsons Farms	Commercial (Weighbridge, laboratory and office)	Pius Drove, Upwell
387	21/00928/F	Mr Beaney	Travellers Site (3 static caravans)	Pius Drove, Upwell
388	21/01506/F	Outwell Timber & Building Supplies Ltd	Retail (Builders' merchant)	Isle Road, Outwell
389	21/02134/F	Mr & Mrs T Howarth	Residence (Extension)	Cottons Head, Outwell
390	21/02129/F	Mr Gittins & Agger	Residence (Extension)	Basin Road, Outwell
391	F/YR21/1405/F	Mr & Mrs S Britton	Residence (Extension)	Molls Drove, Friday Bridge
392	21/02308/RMM	Freebridge Community Housing	Residential (50 plots)	Isle Road, Outwell *
393	21/01880/F	Mr D Cuckow	Residence (Extension)	Robbs Chase, Outwell
394	21/02493/F	Mr & Mrs M Henson	Residence (Extension)	Town Street, Upwell
395	22/00072/F	Mr T Roughton	Leisure (pigeon loft)	Town Street Upwell
396	Enquiry	Client of Stirling Maynard	Residential (Not known)	Whetstone Way, Outwell

***Planning applications ending 'RM', 'REM' or 'RMM' relate to reserved matters***

Developments that are known to propose direct discharge to the Board's system are indicated with an asterisk. The remainder are understood to propose surface water disposal to soakaways/infiltration systems or sustainable drainage systems, where applicable. The applicants have been notified of the Board's requirements.

No applications for Infiltration Device Self Certification or the Checking Service have been received since the last meeting report.

Further to item (v) of Minute B.288 Consulting Engineers' Report, including planning and consenting matters no further action has been taken in respect of the following developments.

- *Proposed 4No Semi-detached houses and garages at Sayersfield, Basin Road, Outwell – Mr & Mrs Pehl (MLC Ref Nos 289 & 291) & Dene Homes Ltd (MLC Ref Nos 300 & 301)*
- *Construction of a dwelling – Mr & Mrs P Bradley (MLC Ref No 311) and Reserved Matters application for proposed dwelling and garage at plot to the north west of Trevordale, Pius Drove, Upwell - Fountain Construction (Anglia) Ltd (MLC Ref No 341)*
- *Residential development at land to the south east of Trevordale, Pius Drove, Upwell and Reserved Matters Application for construction of 2 dwellings and garages – Mr & Mrs P Bradley (MLC Ref Nos 314 & 344)*
- *Residential development on land east of Pius Drove, Upwell – Mr G Brown (MLC Ref No 315) & P B Construction Ltd (MLC Ref No 334)*
- *Residential development for 22 dwellings at land on the east side of Pius Drove, Upwell – Mr E Broad (MLC Ref No 318)*
- *Residential development of 2 dwellings at Pius Drove, Upwell – Fountain Construction (Anglia) Ltd (MLC Ref No 328)*

*Residential development on land at 34 Isle Bridge Road, Outwell - Mr D Cuckow (MLC Ref Nos 203, 210, 309, 331, 358 & 361) & Welcombe Homes Ltd (MLC Ref No 369)*

Further to the last Board Meeting Report the appropriate documentation required from the applicants in order to meet their duties under the Board's Byelaws and the Land Drainage Act has recently been pursued.

*Residential development at Fenland House, Town Street, Upwell – Fen Regis Trophies Ltd (MLC Ref Nos 233, 239 & 280) & Demolition of existing warehouse, erection of new food store to rear with associated parking at Fen Regis House, 9 Town Street, Upwell – Saxondale Properties Ltd (MLC Ref Nos 327, 342, 351 & 370)*

Further to the last Board Meeting Report the appropriate documentation required from the applicants in order to meet their duties under the Board's Byelaws and the Land Drainage Act remains outstanding.

*Development at Whetsone Way, Outwell – Renham Services Ltd (MLC Ref Nos 322 & 338) and Client of Stirling Maynard and Partners Ltd (MLC Ref No 364)*

Further to the Board's April 2018 Meeting Report, a preliminary enquiry was received in February from the engineering consultant, Stirling Maynard and Partners Ltd, concerning

an area of land to the north west of Whetstone Way, Outwell. No subsequent correspondence has been received.

*Residential development on land west of Tikka Chef, Isle Road, Outwell – Beech Property Investments Ltd (MLC Ref No 347), Partner Construction (MLC Ref No 364) & NFC Homes (MLC Ref No 377) & Freebridge Community Housing (MLC Ref No 392)*

Further to the last Board Meeting Report, a Reserved Matters application has been submitted to the Borough Council for the erection of fifty dwellings.

In view of the problems experienced elsewhere in Outwell, albeit in a neighbouring Board, one of which involves Freebridge Community Housing, it is disappointing to advise that no pre-application consultation has occurred with the Board.

Whilst a detailed assessment of the submission documents has not been undertaken, it is noted from a brief review that BHA Consulting Ltd's Drainage Strategy Report Ref. 3729 Version 2 includes the following text:

"A ground investigation was carried out on 15 December 2017. It was intended to carry out BRE365 infiltration testing at a number of locations, but ground conditions were very wet and prevented movement of the excavator between locations. One trial pit (TP01) was excavated to a depth of 1.85mbgl and recorded groundwater at 1.65mbgl. As a 1.2m unsaturated zone is required beneath the base of infiltration structures and the groundwater table, the planned infiltration testing was abandoned, as infiltration drainage is not a viable option. Therefore, this drainage strategy report is based on attenuation storage with a controlled discharge to a nearby watercourse."

"The existing (brownfield) runoff rates for the impermeable area (0.948ha) for the 1 year, QBAR, 30 year, and 100 year, storm events has been calculated in accordance with the ICP SuDS Mean Annual Flood methodology. In summary:

1 year 3.0l/s;  
QBAR 3.5l/s;  
30 Year 8.2l/s;  
and 100 year 11.8l/s."

"The surface water drainage strategy is based on guidance provided in the National Planning Policy Guidance and the SuDS Manual. Ground conditions are unsuitable for infiltration drainage, therefore, the most appropriate form of surface water drainage for this Site is sub-surface storage with a controlled discharge to the adjacent watercourse.

- Rainwater harvesting using water butts for roof runoff to reduce the total volume of water discharged
- Roof, estate road and parking areas drained to attenuation storage in below ground tanks and pipes
- Final controlled discharge will be directed to the watercourse along the western boundary.
- Suitable silt trapping and the attenuation basin will provide adequate water quality treatment.

The required attenuation volume to accommodate the 100 year plus climate change storm event is 783m<sup>3</sup> based on a discharge rate of 3.5l/s (QBAR). Attenuation will be provided within an open attenuation basin ground tanks and pipes. Drainage calculations are provided for the 1 year, 30 year, 100 year + 40%CC”



Extract from BHA Consulting Ltd's Drawing No. 3729.SK01 Rev. P2 Drainage Strategy Plan

It is considered that the issues of long-term funding, management and maintenance arrangements for the upkeep of the facilities in perpetuity, particularly those associated with flood risk and water level management including SuDS, is of prime importance. It is further considered that, on this occasion, these should have been supplied much earlier within the decision-making process. This should have included arrangements for adoption by an appropriate public authority or statutory undertaker and any other arrangements to secure the operation of the scheme throughout its lifetime. Failure to do so may lead to an unacceptable burden on the ratepayer. Economic constraints **must not** be accepted as a justification for non-inclusion of such arrangements.

It is suggested that:

1. The layout of the development should be designed to facilitate access by routine maintenance machinery to the on-site water level and flood risk management

systems, particularly the open watercourse, adjacent to Plots 36-39, and the attenuation lagoon.

2. The attenuation lagoon is poorly designed and may be difficult to maintain.
3. The attenuation lagoon may benefit from being re-located to maximise the close proximity of the Board's District Drain at Point 57.
4. The hydro-brake should be re-located to a more appropriate location that will not be trafficked by large and heavy maintenance machinery
5. The general principles discussed in the "Planning Updates & Consultations" document, pages 8-10, are followed to ensure that adequate arrangements are made for the long-term ownership funding, management and maintenance arrangements for the upkeep of any water level and flood risk management system, whether on or off site, in perpetuity.

It is further suggested that a "Water Level and Flood Risk Management Plan" should be provided which must include the following, as a minimum:

- Details of the receiving watercourse system.
- A hydraulic model of the receiving watercourse system to ensure its adequacy during flood events.
- A plan to cleanse the receiving watercourse and, if appropriate, suitable channel improvement works to ensure its efficiency in the long term.
- A regular watercourse maintenance programme which is agreed upon by all relevant parties including the RMAs to ensure its long-term integrity and efficiency.
- Protected clear access strips of a suitable width that are provided beside the receiving watercourse and attenuation lagoon to enable ready access to it.
- The provision of a "Surface Water Drainage Maintenance Plan".

It is considered that the following specific information about the site and proposal should also be provided:

- Details of land ownership.
- Details of responsibility including adoption arrangements and funding mechanisms.
- A description of the system.
- Relevant information and data sheets.
- Utilities Plans.
- Method Statements/Risk Assessments.

The submission is to include appropriate detailed plans, to an engineering scale, of the surface water system, including the attenuation lagoon, together with appropriate supporting calculations, construction details, method statements, operating instructions etc.

It would be beneficial if correspondence from the adopting body and/or an appropriate person at Freebridge Community Housing confirmed the adoption arrangements of both the proposed foul and surface water systems and acknowledged who will be responsible for the whole life funding, management and maintenance of the on-site drainage system.

The Board is advised that as the surface water disposal system is attenuated to greenfield rates of run-off it will not receive any contribution fee.

*Grantham to Bexwell Pipeline – Anglian Water Services Ltd (MLC Ref Nos 380 & 385)*

Anglian Water Services Ltd is proposing to install a new pipeline from Grantham to Bexwell that crosses the northern part of the Board's area. Discussions are underway to confirm the route of the pipeline and landowners are being contacted. A meeting is being arranged in the next few weeks with MLC engineers to review the depth of the pipeline where it crosses watercourses.

Further to last year's Board Meeting Report, the application for encroachment within the Board's District Drain and associated maintenance access strip at Point 41 was recommended for approval subject to the imposition of related conditions, in accordance with the requirements included in last year's Board Meeting Report.

An application for the disposal of both surface and treated foul effluent water was received in January and subsequently recommended for approval in March. Please see the following extracts from Ellingham Consulting Ltd's note of 04.02.22 showing the position of the outfalls for surface and treated foul effluent water.

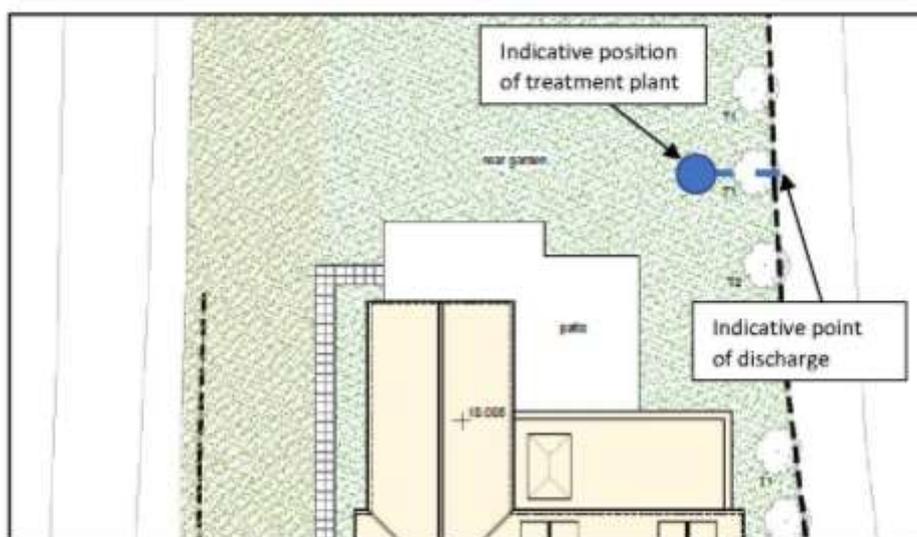
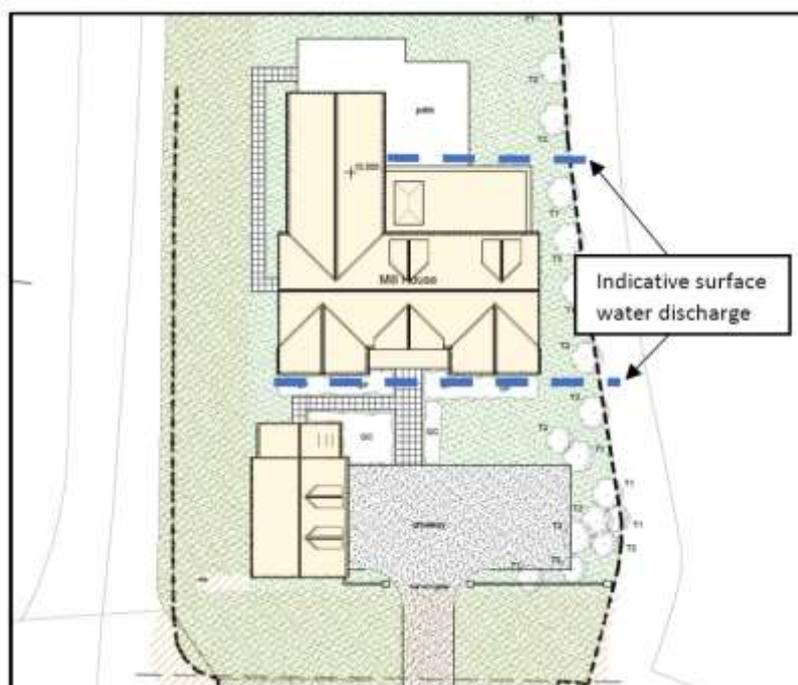


Figure 4 – Foul Water Treatment Plant and Point of Discharge



An application for Byelaw Consent to plant a new laurel hedge around the site has been received. Currently, this application is invalid as an appropriate plan showing the location of the hedge has not been submitted but it is understood that this could be between 0.5m and 1m from the brink of the Board's District Drain, presumably in the same location as that shown on the plans in last year's Board Meeting Report.

Whilst it could be contended that the presence of the previous hedge set a precedent it does not mean that the Board would not have removed the hedge if it had to undertake emergency works to the channel at this strategic location.

Discussions with the relevant parties continue but **in order to guide further discussion and the issuing of consents, the Board is asked to consider whether it would consent the planting of a new hedge, advise on any requirements it may have and provide instruction on how it would wish us to proceed.**

*Construction of weighbridge office, welfare facilities and provision of sampling laboratory with associated office at The Myrtles (Mill Farm), Pius Drove, Upwell – Robinsons Farms (MLC Ref No 386)*

During April 2021 the Borough Council validated the planning application associated with the agricultural use of this site. which was formerly owned and operated by Ray Wilson & Co.

It is proposed to demolish the existing weighbridge office and adjacent office building to enable the erection of a new 2-storey office building measuring 11m wide with a total length of 17m. The planning application advises that surface water disposal will be to soakaway but no evidence to support this was supplied with the planning application.

The Borough Council granted planning permission in June subject to the imposition of planning conditions, none of which relate to the Board.

During a brief review it was noted that there are also two previous planning applications for agricultural storage buildings, Borough Council Ref Nos 20/00938 and 20/01812, which appear to have been missed when undertaking a review of the planning applications lists.



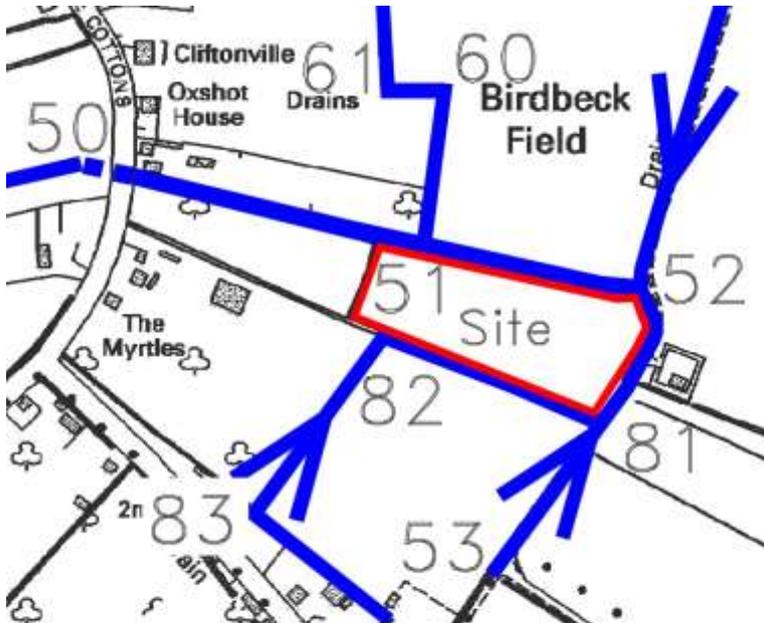
Extract from SDM Fabrication Ltd Drawing No 6827 001 Rev. -

The appropriate documentation required from the applicants in order to meet their duties under the Board's Byelaws and the Land Drainage Act has not been received and, in view of previous problems with the use of infiltration systems in this area, the Board may wish to consider taking further action.

**Therefore, in order to resolve this matter and guide further discussion it would be beneficial to receive the Board's opinion and further instruction in respect of these developments.**

*Change of use of part of the land for the stationing of three static caravans for Gypsy/traveller occupation. Provision of three day rooms; erection of small agricultural barn. Hard and soft landscaping on land to the south east of Bramleys and east of The Myrtles, Pius Drove, Upwell – Mr Beaney (MLC Ref No 387)*

Members may be aware that a planning application was submitted to the Borough Council in May, which was validated in August. The planning application form advises that surface water disposal would be to soakaways with foul water dealt with by a septic tank.



Extract from the Board's District Plan showing the proximity of the Board's network to the site

However, as can be seen from the extract from the Board's District Plan (left), the proposed Travellers' site is surrounded on three sides by Board's District Drains, and from the extract of the plan submitted as part of the planning application a post and rail fence, mixed hedge, mobile homes, dayrooms and an agricultural barn are

shown within the Board's 9.0m wide maintenance access strip. The encroachment of these structures together with any planting in the access strip would not prevent the Board from gaining access to its system which could have an adverse impact on the local water level and flood risk management.



Extract from SJM Planning Drawing No. 2021-049v-PropBlock showing the proposed layout

**In order to resolve this matter and guide further discussion it would be beneficial to receive the Board's opinion and further instruction in respect of these proposals.**

## ***Development Contributions***

Contributions received in respect of discharge consent will be reported under the Agenda Item – ‘*Contributions from Developers.*’

## **Planning Updates & Consultations**

To reduce the size of this consultant’s report and to increase public transparency the section of this report which provides information on the various strategic consultations and issues that may affect the Middle Level Commissioners and administered/associated Internal Drainage Board has been relocated to our website and can be found on [www.middlelevel.gov.uk](http://www.middlelevel.gov.uk) towards the bottom of the page under “Strategic Planning Consultation Responses”.

## **Norfolk Water Strategy Programme (NWSP)**

The Eastern region, and specifically Norfolk, is experiencing growing pressures on water resources. The ability of freshwater bodies to sustain biodiversity is considered by many to be at risk due to water shortage, pollution and destruction of native habitats.

Collaborative, cross-sector approaches and actions are required to ensure that there is enough water to meet the growth in population, support the recovery and growth of the local economy post-COVID and enable the local natural environment to recover and flourish to 2050 and beyond.

Water Resources East (WRE), together with Norfolk County Council, Anglian Water and The Nature Conservancy (TNC) have formed a partnership to prepare a sustainable Norfolk Water Strategy with associated funding and governance arrangements.

The objectives of the NWSP are to secure good quality, long-term water resource supply for all water users, while protecting the environment and showcasing the county as an international exemplar for collaborative water management.

The programme seeks to demonstrate how cross-sector, integrated water management action can deliver multiple benefits and help achieve the county’s net zero targets. Early outputs and learnings from the project will feed into the development of the long-term Regional Plan - Water Resources East ([wre.org.uk](http://wre.org.uk)).

The development of the plan and associated governance arrangements, initially funded for two years, will entail working with a variety of organisations to test and implement a number of nature-based solutions (nbs) to manage water in the county. These nature-based solutions will be amalgamated into an investable, long-term, proposition for private and public financing which will underpin the creation of a governance structure referred to as a ‘Water Fund’.

Water Funds are a well-established model for facilitating collective action to address water security challenges through the implementation of nbs as a complement for more traditional so-called 'grey' infrastructure such as pipelines and treatment plants. Norfolk is one of two European pilots selected for Water Funds by TNC, to add to TNC's global portfolio of Water Funds.

The Middle Level Commissioners and associated Boards are members of WRE and late last year the Middle Level Commissioners (representing both themselves and the administered Boards within Norfolk) were invited to join the Steering Committee.

Since this time the Middle Level Commissioners' Planning Engineer has attended several virtual meetings where issues such as funding streams and sources; Governance and legal challenges; WFD targets; surface water abstraction pressures; climate change mitigation and adaptation have been discussed.

Synergies have been identified with and will feed into the Cranbrook/Counter Drain FRM Strategy, which involves the Commissioners and Boards on the north western side of the Ouse Washes together with the Hundred Foot Washes IDB. It is hoped that other similar projects may also benefit.

### **Norfolk Water Management Partnership [Norfolk County Council (LLFA)]**

#### ***Local Flood Risk Management Strategy Policy Review 2021***

No further correspondence has been received or discussion subsequently occurred concerning this matter.

### **General Advice**

Assistance has been given, on the Board's/Commissioners' behalf, in respect of the following:

- (a) Mr Paul West – An application for bylaw consent, for the installation of a field underdrain outfall in the district watercourse between Points 26 and 27 adjacent Ladus Drove, was recommended for approval.

Consulting Engineer

8 April 2022