

Project Closure Report Idle and Torne Priority Catchment 2019 - March 2021

Introduction.....	1
Reason for the Action Plan.....	2
Catchment Group.....	3
Steering Group.....	3
CaBa partnerships	4
Opportunity/Trials.....	4
Next Steps.....	9
Future projects	9
Appendix A.....	11
Appendix B	15
File Links and Locations (Sharepoint)	20

Introduction

The abstraction plan published in December 2017 sets out our approach to reform abstraction over the next few years. The plan will develop a stronger catchment focus with local solutions which protect the environment, aim to improve access to water, modernise our service and protect for the future. The plan covers our approach to addressing the issues and reforming water abstraction management.

The Priority Catchments (PC) project promoted a catchment based approach to develop and test innovative solutions to achieve greater access to water and address unsustainable abstraction. Catchments were selected where:

- There is unmet demand for water and/or concerns that abstraction is damaging ecology.
- There is potential for water to be shared amongst abstractors.
- There are a number of abstractors who we can work with to trial new and innovative ways of managing water abstraction.

There were four initial EA Priority Catchments (East Suffolk, Cam and Ely Ouse, South Forty Foot and the Idle and Torne), with a further six “phase two” catchments added to the national project in 2020.

In December 2020 we published the outputs from this engagement in the updated Abstraction Licensing Strategies for each catchment.

[Witham](#)
[Idle and Torne](#)
[East Suffolk](#)
[Cam and Ely Ouse](#)

Idle and Torne Catchment

The catchment of the Idle and Torne rivers covers an area approximately 1,200km². Nottinghamshire and South Yorkshire are principle counties. However Derbyshire and North Lincolnshire cover areas to the south west and north east of the catchment.

The Idle drains a catchment area of approximately 879km² and the Torne an area of 328km². The Rivers Maun, Meden and Poulter meet near Gamston, south of Retford to form the River Idle, joined downstream by the River Ryton. The river Torne rises near Tickhill and flows north-eastwards around south Doncaster, through the heavily drained Isle of Axholme.

The River Torne and River Idle run eastwards across the area before discharging into the River Trent at Keadby Pumping station (tidal Trent) and West Stockwith Pumping station.

The Idle and Torne catchment is predominantly moderate lowland catchment. Much of the northern end of the catchment is drained by pumps and high level carriers. Here the land is at or below sea level. Most of the higher areas are undulating in nature, but with no great inclines. Most watercourse flow north eastwards.

Why a catchment based approach to Water Resources.

Water resources have not previously been looked at on a catchment scale. The purpose of this approach is to ensure multiple benefits and system wide impacts are considered. Using a catchment based approach will:

- Empower local groups and lead to innovation
- Allow consensus-based decisions which can be quicker than taking a regulatory approach
- Develop a shared understanding of the issues locally and co-develop solutions that achieve long-term sustainable abstraction and improve access to water.
- Bring together the Environment Agency, catchment partnerships, internal drainage boards, water companies, local authorities, Natural England, abstractors groups, and individual abstractors to try novel ways of giving people access to water and water security, while protecting or improving the environment.
- Have the potential to achieve multiple benefits
 - Water resources
 - Flood risk management
 - Water quality

Reason for the Action Plan

The Priority catchment project in the Idle and Torne Catchment ran from January 2019 and finished in March 2021. Documenting the plan/programme of projects ensures the momentum, ideas and projects collated do not go to waste. The partners have put a lot of commitment into the creation of the group and the establishment and development of the ideas which we do not want to lose.

The future aim is to ensure that the CaBa partnerships expand their agenda and attendance to include water resources. The Abstraction strategy aims to achieve this by 2027.

We hope that this Action Plan will form part of the remit and actions of the 3 catchment partnerships within the Idle and Torne catchment. This is to ensure that the catchment can

become resilient to drought / flood risk and environmental improvements are made to the catchment.

Catchment Group

Working with existing local groups we identified the catchment partners and abstractors to form the PC catchment group, charged with overseeing the PC work. This was a successful partnership operating in this catchment and we want to see the work continuing within existing groups.

The PC catchment group has been made up of local abstractors, Severn Trent Water, Anglian Water, Natural England (catchment Sensitive Farming Officer), RSPB, Consultants, Coal Authority, Canal and Rivers Trust, Internal Drainage Boards (Doncaster East, Isle of Axholme and North Nottinghamshire Water Level Management Plan), Woodland Trust, Wildlife Trust, Hansons, Mansfield Sands, Yorkshire Wildlife Park and CaBa catchment hosts and their partners. This group identified over 50 opportunities at the first event in January 2019 (Appendix A).

Steering Group

The steering group was been set up provide catchment oversight of opportunities and identify where to focus actions. Opportunities have been separated into short, medium and long term goals. They are here to ensure the project and ideas stay on track and help to connect to wider projects that could impact the catchment. The group are also experts in their field with good relationships and networks outside of the catchment group which can be used if and when necessary.

The attendees are NE CSF, RSPB, Woodland Trust, Coal Authority, IDB, STW, STW agricultural specialist. We also invite different representatives to the meetings such as local abstractors or businesses.

Member	Organisation	Contact details
Carl Cornish	RSPB	Carl.Cornish@rspb.org.uk
Louise Hackett	Woodland Trust	LouiseHackett@woodlandtrust.org.uk
Matilda Beatty	Severn Trent	Matilda.Beatty@severntrent.co.uk
Des Kay	NE CSF	Des.kay@naturalengland.org.uk
Phil Billings	Severn Trent (agricultural Specialist)	Phil.Billings@severntrent.co.uk
Robert Brown	Isle of Axholme IDB	robert.brown@ioadb.co.uk
Peter Cornish	Pollybell Farm	peter.cornish@pollybellorganicfarm.co.uk
Chris Manning	IDB	chris.manning@lmdb.co.uk
Andy Morrirt	Coal Authority	AndyMorrirt@coal.gov.uk
Siobhan Hall	Hanson	Siobhan.Hall@hanson.biz
Chris Crowe	Coal Authority	ChrisCrowe@coal.gov.uk
James Brown	Pollybell Farm	James.Brown@pollybell.co.uk
Simon Fisher	NFU	Simon.fisher@nfu.org.uk
Graham Green	Mansfield Sand	graham.green@mansfield-sand.co.uk
Thomas Barden	Severn Trent	Thomas.Barden@severntrent.co.uk
David Mould	Canal and Rivers Trust	David.Mould@canalrivertrust.org.uk
Adam Comerford	Canal and Rivers Trust	Adam.Comerford@canalrivertrust.org.uk
Kathryn Smith	Canal and Rivers Trust	Kathryn.Smith@canalrivertrust.org.uk
Martin Bowes	Anglian Water	mbowes@anglianwater.co.uk

CaBa partnerships

There are 3 catchment partnership within the Idle and Torne. These are the Torne partnership, Sherwood partnership and the River Idle Management Partnership. These three groups have different focuses and attendees. The main focus on CaBa partnerships is to improve WFD status in our water bodies. The group looks to improve multiple benefits with any projects that they do.

We are working closely with these partnerships and their hosts to give regular updates to try and get more ideas and collaboration on projects that will benefit the water resources situation.

Opportunity/Trials

This is the summary of the trials and projects that have been investigated From January 2019, with subsequent updates.

As well as leading on and promoting better engagement between different catchment stakeholders, PC project manager led on a number of trials and initiatives. This started with some structured engagement activities including launch workshops. In these workshops and meetings many opportunities were identified to improve access to water sustainably. The table below captures the trials and the next steps.

Trial	Details	Current situation	Next steps
High flow abstraction study	EA led study through a consultant to see if abstracting water at high flow would have an impact on the environment such as increased sedimentation or impacts on water levels around the Idle Washland SSSI units	This study was completed October 2020 and the findings suggest more work needs to be done around the R. Idle due to the sensitivities but there is potential to open the Torne Catchment at high flows for environmental benefits due to the low number of sensitivities. However, there are significant uncertainties in the model. Consequently, there is insufficient assurance to take the findings forward with confidence.	<p>This study is highlighted in the ALS and findings were shared with the steering group. Report to be shared on CABA website. It highlights that further evidence needed to progress.</p> <p>The EA continue to try and find funding for further investigations. Potential to develop in-house understanding of influences on catchment to explore options for improving the situation</p>
Recharge with land use and climate change	This is a woodland trust and RSPB project that was carried out by Cranfield University. The project looked at the recharge rates of arable land compared to woodlands	Completed May 2019.	Fed into the working with natural processes project to investigate future trials
Working with natural processes - GW recharge.	Opportunity mapping to identify locations where ground water can be recharge through using natural processes, such as leaky dams	Phase 1 Complete May 2020 and report produced with some processes identified. This has been shared with partners.	<p>Comms and Engagement Fund Bid to be put together to deliver outputs and develop initial ground projects. A small working group has been formed to take forward the findings of this project to explore what can be implemented. Project members Carl Cornish (RSPB), Louise Hackett (WT), Katie Macnamara (EA) Pau Sanchez Farres (EA).</p> <p>Useable map of outputs to be created from layers shared with CABA</p>
Water for Farmers and Wildlife	EA and RSPB project where they will be looking to flood fields over a set period of time to assess how long vegetation can survive, if there is a reduction in pests, increase in soil health and bird variety/activity	Pollybell Farms are actively involved in the project with 4 trial plots on their land. The project will be ongoing in the catchment for the next one to two years (2019-2021).	<ul style="list-style-type: none"> • Project was paused March-September 2020 because of the COVID pandemic. • Number of trial sites reduced. (4 reduced to 2) Yokefleet and Pollybell. This change is to help ensure the objectives of the project remain

			<p>deliverable within appropriate timescales.</p> <ul style="list-style-type: none"> • Project timescale will need to be extended to give time to collect sufficient data, plan to extend the project (Originally due to end later this year). Local Enforcement Position extended to cover new timeframe. • Sampling and analysis undertaken by University of York students. • Previous project manager, Seonaidh Jamison, has now left the RSPB. Dan Wynn is managing the project in the meantime, but new PM on board from sometime in April. <p>Project manager – Holly Laws FCRM holly.laws@environment-agency.gov.uk</p> <p>If you would like to get involved or find out more please contact : HStrategy@environment-agency.gov.uk.</p>
Trickle Vs Spray irrigation	Godfrey's farm is carrying out a 3 year trial with carrots to see if there is a difference in the yield, quality and water usage with trickle compared to spray irrigation	This commenced in summer 2019 so there should be some outputs within the year.	
Storing water in the existing drainage system	Investigation into whether storing more water in the drainage system will help slow the flow of water but also allow access to water in dryer times, instead of water being pushed through the system quickly and out into the Tidal Trent.	This project has not progressed any further other than initial conversations. We need to understand the catchment better and how the water moves before we can trial such a project	IDBs are investigating this along with their rationalisation project.
Idle water level management	SSSI water level management. The EA are working with Natural England and interested parties to improve the Idle Washland SSSIs, which are 4 units that are dependent on water levels of the River Idle.	Site specific measures are working on site so we do not need to test vary water levels in the idle for unit 4. Nottinghamshire wildlife trust are looking at a large scale project to	Continue to monitor with the RIMP group.

		understand unit 1 and how it can be improved	
Communication and engagement fund, Rivers Trust	This project is led by Nottinghamshire Wildlife Trust and will build on existing projects and events to extend the agenda. The focus will be on rural agricultural areas to help share best practice and another focus on Urban areas educating children on water efficiency.	Desk based work complete but delays due to COVID 19 as not able to meet with schools, farmers, events etc.	The lessons and good practice learnt will be shared with other catchments and will help shape how we engage around water resources in the future
Climate change scenarios	A PhD Student working with the EA is producing climate change scenarios for the R. Idle catchment. This is a new model focusing on a small catchment instead of regional predictions. Scenarios will be carried out for existing abstraction and what the future implications may be.	Stakeholder engagement through 1:1 conversations will relevant partners within the catchment to help find adjustments to the climate change predictions	Project due for completion December 2021. The outputs will be shared with the CaBa groups and project teams to help plan for the future. Contact: Cordula Wittekind C.I.Wittekind@leeds.ac.uk
Data collection/sharing	Investigating how we can collate and share information widely to ensure that projects are joined up and we know where to focus our efforts	Creation of a Story map for the PC work, this allows for easy access for all to look at the data we have already in a simple format. We can then add the opportunity mapping from the working with natural processes project, details of biodiversity and inclusion of different projects. The aim is to help identify locations for future projects	EA Funding has not been found to carry out this work.
Seasonal Temporary trades	This would allow farmers to assess the information from PROSPECTs at the start of the year to see whether they have enough license. If they do not they can apply early on in the year using a low risk simple process	Standard forms have been produced but no take up March 2020 due to amount of rain received. Virtual trial in East Suffolk area to see how the process will work	Trial again in March 2021 lead by EA national Water Resources team.
Water Resources Advice Visits	Natural England are leading on trailing new catchment sensitive farming visits focusing on water resources. There are 11 visits for this catchment	Visits started in February 2021 and a summary report will be produced for each visit. These will be kept confidential and only the best practice used.	The best practice and innovative ideas found will be shared by national Water Resources team. A summary will be given to the CaBa partnerships for their use too.

Abstraction Licensing strategy	Complete Dec 2020 to reflect the work that we have been doing and how WR works at a catchment scale.	New wording for environmental projects to help clarify what can be done in a closed catchment	Continue to review the strategy and update with details from the projects listed above
Interactive Story Map	Companion app to the ALS, included Assessment Points, Water availability and reliability information.	Expanded to include simplified layers for High flows and WWNP.	National WR team to consider expanding to other PC areas.
Link to FCRM projects	Ensure that the project is linked in with the EAs flood risk activities to ensure the whole environment is covered and projects are multi-purpose	Working closely with the Isle of Axholme Strategy team. And the EAs idle and Torne group to link projects. Currently looking at the R Idle/West stockwith PS and storage for flood risk	EA teams to continue to work closely together to link projects, FBG, FCRM, EPE, IEP
Use of attenuation ponds- Doncaster iport	Investigation into whether the stored water could be used for other purposes instead of abstracting out of watercourse/ground water		IDB leading conversation.
Disused reservoirs- storage or recharge	Identification of the existing storage areas within the catchment	Need to identify locations for this to proceed. Site meeting with coal authority/Mansfield sands to look at the potentials.	Next steps to look at if they could be used for storing water for abstraction or aquifer recharge. This will need to be based on evidence which could take time to understand the relationship between the storage and recharge potentials.
Pearlethorpe subsidence	Due to mining subsistence there is now a large body of water that during high flows cuts of the local village. Is there the potential to improve the site for storage of water for abstraction but to increase biodiversity and habitats	need to liaise with the coal authority to identify locations and measures that may be possible	Linking to working with natural processes and looking at the depths of GW. Woodland Trust are looking to investigate the possibilities of working with natural processes that may provide evidence to help improve Pearlthrope subsidence.

Next Steps

The PC work was the first time that water resources had been approached on a catchment scale. Through this project it has proven that stakeholders and partners alike fully understand the need to assess the quantity of water and well as the quality.

One of the main outcomes of this PC project was the collaboration between all the different members of the PC catchment group. This was the first time that water resources had been discussed on a catchment scale and with different sectors and with different concerns from drought, flood risk and environmental improvements.

Future management of water resources in this catchment will focus on our stakeholders, partners and interested groups to take any initiatives forward with the help of the EA. As the Priority Catchment project only ran for a short amount of time we have not been able to investigate all the opportunities presented. There are still a lot of good work and collaborations continuing within the catchment and our catchment partnerships are a great place to help improve the environment collectively.

With regards to the Catchment Partnerships within the catchment we have worked hard to get water resources on the agenda and discussed. We will be sharing relevant documents and reports from the PC project onto the catchment partnership website. The projects going forward will also be included in the Catchment Plan to ensure water resources is integral to the partnership.

The Abstraction licensing strategy was published in December which includes details of the PC work and who to contact. We are also launching a Story map which will help partners and stakeholders identify locations to take actions forward themselves.

Future projects

Funding has not been secured for these projects, but the EA have put bids in to try and get funding for these between 2020 to 2027.

PC direct projects proposals

Project Ideas	Year requested Funding
Phase 3 High Flow study, impacts of abstracting at high flow	Not successful 2020. Try again next year
Building resilience for water level management (Isle of Axholme) - Calibration of gauging stations in the level-dependent area is needed to ensure they are calibrated correctly and to ordnance datum. Also additional operational support required for managing the sluices.	Funding received – on standby to be completed 2021
West Stockwith Pumping Station replacement project. Opportunity to influence the project early to re-use/divert water rather than pump to R. Trent	Early stages of project – West Stockwith part of EA Net Zero Pilot project. WR Virtual Team involved in discussions
Idle and Torne PC - general support	Not successful. 2020 Try again next year
Idle and Torne PC - GW Recharge, infiltration rate and working with natural process	Work in progress with RSPB, Woodland Trust and EA (EP/DBG/GWCL)

Dashboard, develop way to show data and information with partners	2023-2026
Education on water usage, best practice	2023-2027
High flow abstraction trial	2023-2025
Feasibility study, understand current capacity for storage within the Idle and Torne including trials	2023-2025

Wider area project proposals

Project Ideas
Install new and upgrade the water level and shallow groundwater level monitoring at the Idle Washlands
Review the relationship between flows at Mattersey and Auckley with Levels at West Stockwith & Keadby
Review the licences with Hands Off Level restrictions at West Stockwith pumping station and other EA pumping stations
Use of the DRIEDUP ecological model to model the water level that is required for the ecology of the level dependent management units of the Idle and Torne catchments.
Technical Update the EMY groundwater model and to rebuild recharge model for certain areas, inc CC
Time series update to the EMY groundwater model
Maintain monitoring BH network.
survey datum for monitoring BHs
Borehole replacement project
monitoring BH network telemetry
Write up of summer water level management in the Isle of Axholme
Dewatering license impact assessment
WR trade options between GWMUs
Strategic Time limited license review options assessments
Evidence for No deterioration of GW body and SW body
Decision making tools for WR and hydrology

Appendix A

Outputs from the 15 January 2019 workshop

Opportunity or Trial summary	Category
Real time abstraction - use Gauging Station data immediately	Data
Better understanding of abstractor needs and high flows	Data
Gather representative data for soil moisture deficit. However, it was acknowledged that this may not provide information to such a specific granular level that would be required by farmers (and this would probably be better achieved through ground truthing with a spade)	Data
Farmers build infrastructure and join together to build Res- use EA data to calculate needs based on current rates.	Data share
Can we use Sherwood Sandstone Aquifer model under different landuse and climate scenarios as investigative work for the Idle and Torne Priority Catchment to see how that affected water availability	Data, evidence
Drip irrigation (rather than boom or spray) – trial to act as proof of concept (to be area specific rather than generic) to show the water efficiency/yield benefit of the method. This infrastructure trial could also be used to test aquifer recharge.	Drip irrigation trial
Public education on reducing water usage	Education
Cost efficiency of pumping water at diff times- link to energy co.	Energy
Abstractors working together at sub catchment scale to share and manage water	Engagement
Using peak flows in the Idle and Torne better. This will need to involve better monitoring of the flows with better telemetry so that abstractors could react quicker to high flows which can occur in summer as well as winter	Flows
A subsidy to incentivise more equipment purchase, to provide a mechanism to enable more intensive watering (i.e. more equipment at times of high demand)	Funding

Blending capacity – NO4 rich GW water could be utilised by Agriculture. No net increase in abstraction. Trade these?	GW
Pumping from large and small GW abstraction boreholes – study impact on aquifer and environment. Regulatory impact, 4 week period, study impact of summer 2018 on aquifer levels.	GW
Canals - opportunity if improve leakages	Infrastructure
Exploration of the connectivity between flood and abstraction infrastructure to develop a greater understanding of the interactions between the two.	Infrastructure data
Optimisation of unused licences – including headroom	Licences
Transfer licences at reservoirs with level management e.g. Drawdown	Licences
Recharge using effluent, mine water, water from outside catchment (west of the catchment)	Mine
Bring in same amount of water to catchment (water companies) - then share between sectors	Out of catchment
Industrial/commercial rainwater harvesting- positive use of it irrigation. Offsetting waste water charges. Influence at planning stage	Planning
Quarries used as storage	Quarries
Utilising dewatering process Quarries	Quarries
Artificial recharge. Excess SW transferred to sandstone aquifers.	Recharge
Revisit the 1980's artificial recharge work	Recharge
Investigate the possibility of winter woodland trickle irrigation as a source of aquifer recharge (possible Sherwood forest). This may deliver additional ecosystem benefits, although there is an awareness of the possible effect on the ecosystem.	Recharge, woodland
Use of treated final effluent for irrigation	Re-use
Use and significance of mine water – contribution of water on the environment, possibility of draining.	Re-use mine
West Stockwith water pumped out- can we use some of that	Re-use water
In the lowland areas there can be too much water. It flows out to intertidal Trent. Comparisons made to East Suffolk. IDB becoming a water supplier?	Re-use water

Can poor quality water be used for agriculture more? E.g. mine water discharge, or high nitrate public water supply sites that can no longer be used for Public Water Supply? It was acknowledged that mine water discharge could have problems for soil salinity	Re-use water
Runoff from new housing and new warehouses e.g. Amazon warehouses, could be used to recharge the aquifer. We discussed the use of SUDS and agreed that they needed regular maintenance to be effective.	Se-use water/ SUDs
R Meden Res; release water for farmers to abstract- share water	Share
Think beyond catchment - share resources- Trent, canals as conduit	Share water
Idle SSSI too wet in winter- need storage higher up catchment	Storage
Poulter catchment- looking to store lakes to get reasonable storage and address siltation- trading opportunities. Make use of big lakes, balance environmental needs	Storage
Reservoir designed to improve wildlife/wetlands - add value	Storage
Maun- potential small storage that could be utilised. Restored to enable storage at high flows	Storage
Flood protection res as part of warehouse development- could be volume to utilise -YWT involved	Storage
Winter (and high flow) abstraction to allow reservoir storage for irrigation at times of low flow, Possible redirect Idle lower to Dutch Drain to provide storage at (1). Alternative storage res on Torne at (2) or (3)	Storage
Possible pumping from outfall of Torne for storage and use further back upstream within the catchment.	Storage, re-use
Infrastructure to enable better use of Idle water. No storage currently	Storage/infrastructure
Can the water that is pumped to the Trent at West Stockwith, instead be pumped into a reservoir?	Store
The RSPB are doing a study regarding whether land use and land use change, could be used to mitigate for climate change e.g. whether a natural habitat like woodland or heathland would be better for recharging the aquifer in times of reduced rainfall. They are doing a modelling study to look into this.	Study

SUDS on a larger, rather than smaller scale as they were easier and more cost effective to maintain. Can rainwater be harvested and can water be re-used more?	SUDs
Ensure correct connections from new developments to ensure proper use of SUDS, Swales and storage to ensure surface water not directed to combined sewers.	SUDs
Develop a greater understanding within the farming community of the relationship and interaction between surface water / groundwater	SW, GW interaction
STW would be interested in sustainable groundwater trades, which could offset some of the reductions that STW will need to do	Trades licences
Identify suitable areas, basins. Outcrops. Create water meadows.	Wetland
Creation of wetlands on a large scale to store water- walking wetlands	Wetland
Develop upstream absorption (wetland creation) to slow flow and build storage during winter/high flow, to supplement lower flow periods.	Wetland

Appendix B

Outputs from the 6 November 2019 workshop.

This is the list of challenges and pressures that have been collated from the workshop. They have been put into topic areas to try and organise the list into areas of interest. I have added comments against the challenges to show which one we have escalated or what we are trying to do to improve the situation.

Challenges	Comments
Are other industries having to do as much as the farming community	The Priority catchment leads are feeding into the national CaBa abstraction working group where the food and drinks industry are part of. We are trying to ensure that all industry and the general public have a better understanding of water resources and the action that needs to be taken to be sustainable into the future.
Under used licences- taking these back from us, only use occasionally due to crop rotation. Anything planned in the future	We are contacting licence holders who have not used their licences for many years to see if they still require them. We are not going to be taking licences off people who still require them
Storage of gas below Hatfield moors- potential for water storage there	we shall look into this
EA Over cautions, do we really know the actual quantities abstracted	The agency has details of the actual quantities abstracted but we are not able to share the specific figures correctly. These are used to feed into our Licensing Strategies
ELMs update- cant trial as don't know what we can get funding for	The national water resources team are feeding into the ELMs teams to ensure that water resources and different trials are included. We are also working with the RPA to try and include different equipment i.e soil monitoring, clay pipes for trickle irrigation
Trickle- plastic pipes not environmentally friendly- alternative expensive	we are feeding into the RPA discussions to ensure different alternatives are included
how much progress has been made of digitising licences	For this area we are planning to update are gauging stations next year to enable licences to be linked to these.

Opportunities / Trials

This is the list of opportunities and trials collated from this workshop. We have compared these to the first workshop we held to see if we are still on track with the suggestions that have been put forward. The suggestions below are similar to what we have had before but they are a bit more specific that previously received. This means that the project is still on track and investigating the right measures.

Opportunity	Comment
Direct recharge of aquifer- is it possible	investigate- water company may of done trails
Attenuation ponds and re-use of water	Pc group looked into iport. Need to follow this up. Met with Doncaster council to see where we could link up. Hopefully over time this will develop with planners.
License for net environmental gain, invalid after the water being used for commercial purposes, i.e. Pollybell case- closed catchment.	we are looking into the principals around environmental applications, if the commercial aspects are secondary such as grazing needed to manage the habitat that is allowed, but if the commercial gains are greater than the environmental gains there this is where the likelihood is a no to ensure president has not been set. early engagement with the water resources area team and/or the catchment coordinator is best to see what could be granted early on in discussions
Dredge /maintenance for capacity within drains	In extreme flooding events, the relatively small increases in width and depth achievable by dredging a channel do not provide anywhere near enough capacity to contain excess flood water, since the channel may already be full of water, and therefore does not prevent flooding. The agency only has the remit to maintain watercourses with the greatest flood risk, in other aspects Riparian owners should maintain the watercourses.
Semi natural habitat for GW recharge	The project on recharge with natural processes in underway to look at this in more details. There are some projects within the area already changing land use to woodland pasture to increase recharge. However monitoring these impacts needs further work on how it can be done
Use of mine water for crop irrigation	The coal authority are part of the PC group and we have had a site visit to see if this is possible. More work needs to be done in this subject though so we will continue to have the discussions.

Winter storage reservoirs	Currently we are assessing the high flows in the catchment to see if there is any water available, the outputs of this should be the end of March 2020. We are also working closely with the Flood Risk teams to see if flood flows could be used to fill storage reservoirs in this catchment. we are looking into what potential storage places we have already, but are looking into whether lots of small scale storage areas will be more beneficial to the environment and we they have less financial /planning constraints
Smart meters for abstraction licences	This is something we could look to trial in a small catchment if we managed to get some funding. If there are any volunteers please contact me
Dams of rivers to store water/recharge aquifer	Hopefully the working with natural processes will suggest the best location to trials these sorts of measures.
Interested in seasonal trades as potential for this to be good for both parties	if you are interested please email me with your details so we can talk directly to see when we can trial this, hopefully next year
Sites for SUD system- shallow pits to wetlands	These sort of measures are captured in the working with natural processes project
Opportunity mapping- pearlethrope and other subsided land that has no value now	PC group are talking with the Coal authority to see if we can enhance these locations for wider benefits.
IDB- storage areas as they deal with a lot of water	We have looked into storing water in the existing drainage system but need to ensure that its monitored correctly to ensure the water is gone before a high rain fall event. Still investigating
Outdated way of managing abstraction and discharges- something more reflective of what is actually happening?	Hopefully this project can feed back any suggestions on better ways of working to make the process more up to date and licences reflect more accurately what is happening on the ground
Map catchment- who needs what and where	A Story Map to accompany the ALS is undergoing user testing, potential for expansion to add lots of layers and data to be visually seen in one place.

digital mapping to feed into opportunity mapping, overlay catchment boundaries/site of potential	as above the Story map
brownfield land- no value- potential storage WWNP- pollution issues so link to WFD	We have started to work with Doncaster Council and have fed this into them. Review of local plans may help identify locations.
move from arable to grazing as better for environment- water efficiency	This is something that we could support but will not be advertising this change through the PC group.
RTF rainworth water use for trails and watercourse enhancement	Pc group to contact RTF again to meet up to discuss potentials
opportunity for ELMS to contribute to water resources ambition	The national water resources team in feeding into the process. Any suggestions/ideas are welcome and we are happy to feed that through
join biodiversity opportunity mapping with WR	story map potential
Welbeck spray irrigation case study?	Pc to contact Welbeck to discuss this
aquifer storage and recovery	recovery elements may be picked up under working with natural processes project
development- not enough recharge, can influence	Now working with Doncaster council to help build relationships and understanding to find more potentials.
understand the flows and manage water better	EA are carrying out various projects to get a better understanding of how the catchment works. These outputs will start to come out in March 2020.
warping to improve soil as loss after flooding	investigating internal with the EA to see if any trials elsewhere have happened in a similar catchment

Questions

The questions below are what we gathered during the workshop. I have commented on them to show what we are working on or what we have escalated.

Questions	Comment
Are other industries having to do as much as the farming community	The Priority catchment leads are feeding into the national CaBa abstraction working group where the food and drinks industry are part of. We are trying to ensure that all industry and the general public have a better understanding of water resources and the action that needs to be taken to be sustainable into the future.
Under used licences- taking these back from us, only use occasionally due to crop rotation. Anything planned in the future	We are contacting licence holders who have not used their licences for many years to see if they still require them. We are not going to be taking licences off people who still require them
Storage of gas below Hatfield moors- potential for water storage there	we shall look into this
EA Over cautions, do we really know the actual quantities abstracted	The agency has details of the actual quantities abstracted but we are not able to share the specific figures correctly. These are used to feed into our Licensing Strategies
ELMs update- cant trial as don't know what we can get funding for	The national water resources team are feeding into the ELMs teams to ensure that water resources and different trials are included. We are also working with the RPA to try and include different equipment i.e soil monitoring, clay pipes for trickle irrigation
Trickle- plastic pipes not environmentally friendly- alternative expensive	we are feeding into the RPA discussions to ensure different alternatives are included
how much progress has been made of digitising licences	For this area we are planning to update our gauging stations next year to enable licences to be linked to these.

File Links and Locations (Sharepoint)

Project Name	File location
High flow study	Idle & Torne Projects/High Flow Study
WWNP GW Recharge	Idle & Torne Projects/GW WWNP
WFW	Idle & Torne Projects/Water for Farmers and Wildlife
Comms and Engagement	Idle & Torne/Engagement
WR Farm Visits	Idle and Torne Projects/WR Farm Advice Visits
H&T Project	Idle and Torne Projects/H&T gauges
Climate Change PhD Study	https://water.leeds.ac.uk/our-missions/mission-4/euroflow/euroflowabout/
Presentations	Idle & Torne Presentations