

Witham Project Ideas that will contribute towards Delivering Water Framework Directive in the Catchment

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Lincolnshire Chalk Streams improvements through Chalk Streams Partnership
 Deliver improvements to morphology and water quality on chalk streams on a range of water bodies including the Bain upstream of Homcastle, Long Eau and Great Eau that do not meet good ecological status. This is to be carried out by the Lincolnshire Chalk Streams Project

Rseholme demonstration farm
 This project aims to help manage diffuse pollution from arable agriculture across Witham and Ancholme. Working in partnership with Lincoln University to trial and promote techniques for reducing nutrient, sediment and pesticide run-off into ground and surface waters. This will then be used as a demonstration farm for the local agricultural sector.

Habitat improvement on the Lower River Witham
 This project aims to continue the works started in 2014 to provide smaller scale habitat improvements on the Lower Witham. Techniques that would mainly benefit fish populations include gabion baskets, tree pinning, on-line refuges and artificial refuges under moorings. This could be expanded to consider how best to utilise nearby open tributaries for additional important fish habitat.

Protecting and Improving Lincolnshire's Limestone Becks
 A community river project could be set up with local villages along the Lincolnshire Limestone spring line. This follows the success of the Dunston Beck project which engaged land owners and schools and would be used as a blue print for the other becks. The aim is to restore these watercourses, improve low flow conditions and look to reduce diffuse rural pollution inputs. Becks being considered for future works include Nettleham, Branston and Digby, the majority of which are WFD water bodies.

Lincoln Urban Improvements
 The Lincoln Urban Opportunities Study completed in 2015 highlights areas of the city where habitat and water quality improvements could be made in addition to recreational opportunities being developed. Particular areas for improvement are the Brayford Pool where in-channel habitat could be increased for fish populations. An urban diffuse pollution element to this project would look to raise awareness of urban diffuse pollution with the local community and business. There may also be potential for larger scale green infrastructure schemes along the Witham upstream and downstream of Lincoln. These would need detailed feasibility studies to progress. The provision of eel and fish passage at Stamp End Lock should also be considered along with measures to tackle invasive species.

Supporting the development of projects to slow the flow of water at the top of catchments
 This aims to provide support to potential flood risk schemes that are considering ways of working with natural process to slow the flow of water at appropriate locations at the top of catchments. These would have benefits to water quality and wildlife especially through reduced sediment inputs. Current areas under consideration include higher ground to the West of the South Forty Foot catchment, North of East and West Fen Catchwater Drain and the Nettleham Beck above Nettleham. Links need to be explored with farm stewardship as well as the University of Lincoln demonstration farm.

Aubourn fish pass mitigation and river restoration
 This is project would look at a number of small scale in channel habitat improvement techniques to improve river morphology on this section of the Witham.

In channel habitat restoration system to Marston on Upper Witham
 Work with GAFFS (local fly fishing club) to 'fill the gap' in habitat restoration between Syston and Marston. Small amount of funding from GAFFS and in kind work.

Witham Tree Strategy and implementation
 Appropriate tree planting and woodland creation reduces diffuse pollution by retaining water on land and reduces run off. This has both wildlife and flood risk benefits. The strategy has been developed with FCRM and Lincolnshire Rivers Trust in 2015 to identify locations along the Witham where tree planting may be feasible. Future work would involve planting at these sites.

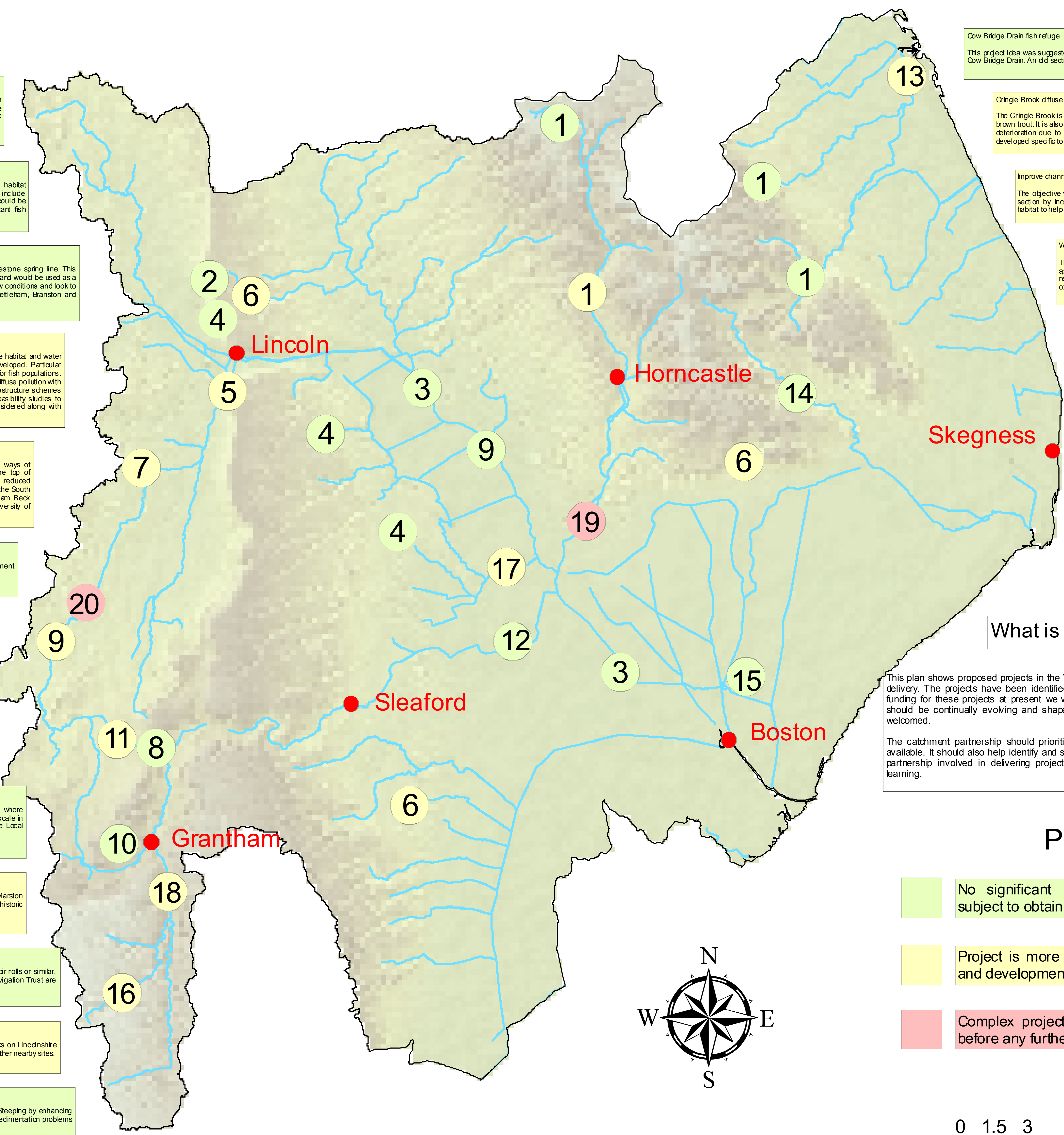
Grantham Urban Improvements
 The Grantham Urban Opportunities Study completed in 2015 highlights areas of the town where habitat and water quality improvements could be made. Opportunities range from small scale in channel works to areas where the flood plain could be rewetted. Partners include the Local Council, Lincolnshire Rivers Trust and the Wild trout Trust.

Marston flood plain reconnection
 This project would look to remove a historically straightened section of the Witham at Marston and reconnect the river with its flood plain. It also provides the opportunity to bypass a historic mill weir which is currently an obstacle to fish movement.

River Slea and Kyme Eau morphological improvements
 This project would involve bank stabilisation works on the Kyme Eau and Slea using coir rolls or similar. As well as reducing bank erosion it would help to provide habitat for wildlife. Sleaford Navigation Trust are interested in these works.

Restoration of floodplain in Lower Reaches of Great Eau
 This project would look at the reconnection of flood plain through the setting back of banks on Lincolnshire Wildlife Trust sites at the bottom on the Great Eau. There is also the potential to expand to other nearby sites.

River Lymn/Steeping catchment management and ecology
 This project would aim to improve water quality and ecology at the top of the River Lymn/Steeping by enhancing morphology and targeting sources of diffuse pollution. In addition, it should help to reduce sedimentation problems further down the catchment.



- 15 **Cow Bridge Drain fish refuge**
 This project idea was suggested by Witham Fourth IDB who have identified a potential fish refuge location on the Cow Bridge Drain. An old section of canal would require restoration and reconnection to the main watercourse.
- 16 **Cringle Brook diffuse pollution project**
 The Cringle Brook is an ecologically sensitive water body that supports populations of native crayfish and brown trout. It is also designated as a Drinking Water Protected Area (DrWPA), which is currently at risk of deterioration due to elevated levels of pesticides. Working with interested partners, a project could be developed specific to this catchment to work with landowners to reduce diffuse pollution.
- 17 **Improve channel morphology on the Billinghway Skirth**
 The objective would be to improve water quality and ecology in the Billinghway Skirth over a 3km section by increasing the width of the wet berm. This would enhance an important back water habitat to help improve fish populations on the Lower Witham.
- 18 **Woody material habitat improvement**
 The overall objective of the project is to develop appropriate techniques at appropriate locations in the catchment for the use of woody material. This would need to be managed carefully but the ecological benefits could be significant and cost effective. This would start with initial demonstration sites.
- 19 **Lower Bain Improvements**
 The aim of this project would be to identify and delivery projects on the Lower Bain to help improve habitat and water quality. On a smaller scale this could involve improving the ecological value of back channels including sections of the old course of the Bain. On a larger scale it could consider setting back banks and reconnecting the flood plain at appropriate locations below Homcastle. For the latter, a detailed understanding of the impact on navigation aspiration, land use and flood risk would be required before anything further could be considered. The Lincolnshire Wildlife Trust has expressed an interest in this project.
- 20 **Beckingham Flood Plain Reconnection**
 Beckingham flood plain reconnection - This project would look to remove or set back back to reconnect the River Witham with its flood plain and potentially old channel down stream of the A17 (potentially 200 hectares). The project also has the potential to offer flood risk management benefits upstream of Lincoln as well as water quality and habitat improvements. The landowner has been supportive in initial discussions. Initial, detailed feasibility work would be required for such a large scheme.

What is the purpose of this Plan?

This plan shows proposed projects in the Witham Catchment that will contribute towards Water Framework Directive delivery. The projects have been identified by members of the Witham Partnership. Although there is no secured funding for these projects at present we will use this as the starting point as funding becomes available. The plan should be continually evolving and shaped by evidence and views from the partnership. New project ideas are welcomed.

The catchment partnership should prioritise which of these projects are to be delivered when funding becomes available. It should also help identify and seek other funding that could make these projects happen. Members of the partnership involved in delivering projects should provide progress updates at partnership meetings and share learning.

Project Status

- No significant problems anticipated in project delivery subject to obtaining necessary permissions and funding.
- Project is more challenging and may require further work and development before moving to delivery.
- Complex projects that required significant feasibility work before any further stages can be considered.

