



Payment by results: surface water flooding and green finance.

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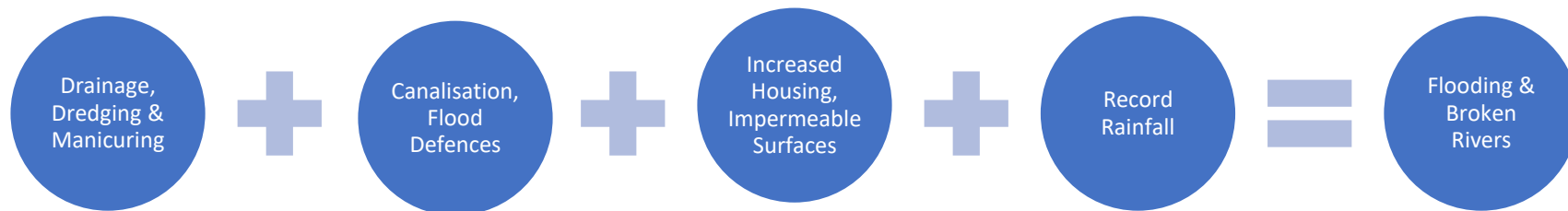
Flooding in the Wyre Catchment

- Like most quick response catchments, the Wyre has been regular flooding events (1927, 1980, 2015, 2016)
- Flooding in 1927 and 1980 resulted in a typical response which included;
- Maintenance
- Drainage
- Hard flood defence structures
- And an indifference to the river, its ecology and natural processes



The spiral of inundation

- Traditional flood risk management interventions start with good intentions
- BUT
- When they are rolled out across entire catchments the spiral of inundation begins;



A change in approach

- Flooding in 2013, 2015 and beyond has facilitated conversations about natural solutions.
- Conservation eNGO's are now at the forefront of natural flood management delivery, providing low cost solutions.
- And now -
- Payment by results
 - Landowners/Farmers/Land managers
 - Rivers Trusts/other delivery organisations

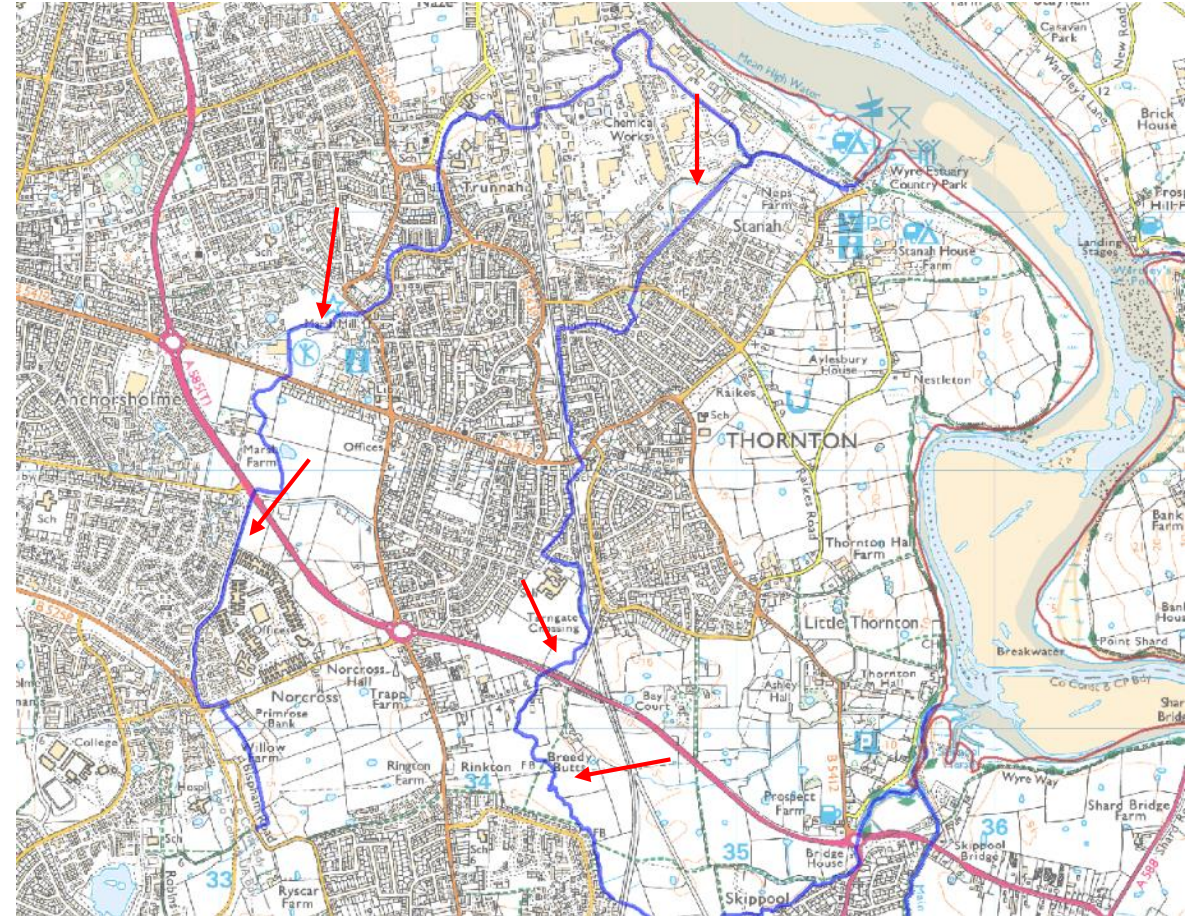


Payment by results – Wyre

- In Spring 2019 we were invited to attend a local RMA meeting to identify interventions.
- Using our catchment plan we pointed out a handful of urban NFM projects.
- Following this we (Wyre RT & Wyre Council) were approached by United Utilities who were keen for quick wins.
- Funding was offered to complete a 3 major projects and scoping for two further projects.

Thornton Flood Risk Resilience

- Collaborative approach between; Wyre RT, United Utilities, Lancashire County Council, Wyre Borough Council and the Environment Agency.
- Wetland Creation, River Restoration, Recreation, Engagement and Education.
- Builds upon existing Natural Course project and application to Greggs CURRF (Oct 19).
- Initial meeting May 2019, funding obtained August 2019 – delivery by March 2020.



Natural solutions in an urban area

- Thornton sits between Blackpool and Fleetwood, over 3000 houses at risk from fluvial and surface water flooding.
- Small, quick response catchment, existing drainage network already at capacity, limited space
 - Hillylaid Wetland – Creation of >5,000m³ storage area with additional benefits for water quality, habitat and carbon.
 - White Carr Lane - River Restoration – re-meandering of existing watercourse to create lowland, anastomosed river and wetland network to create capacity within watercourse downstream.
 - King Georges Playing Fields – river restoration and wetland creation to reduce pressure on local pumped system and to build upon existing changes to increase recreational benefit of site. Local GP practice on site – incorporation of social prescribing, health walks and volunteering opportunities.
 - Jubilee Gardens Wetland and schools engagement – Creation of small wetland/wet grassland area in existing low point to reduce pressure on small pumped system. Engagement with local school to create rain garden within school.



Beneficiaries

- How does this benefit the Water Company?
 - By allowing more surface water to enter watercourses we increase the capacity of combined sewers in areas upstream of interventions.
 - The storage of water by an intervention also allows downstream systems to accept more surface water during the peak flow period, reducing the risk of surface water flooding
 - This equals a reduced pressure on their combined sewers reducing the number of times a CSO might discharge.
 - Where watercourses spill or flow into combined sewers, storage of peak flows creates balance and allows the system to respond.

Other Beneficiaries

- The delivery of these interventions also benefits other RMA's.
 - Wyre Council – Reduced pressure on pumped systems reduces maintenance costs of pumps and carbon cost.
 - Lancashire County Council – Reduced highway flooding and a reduction of silt making its way into watercourses and drains
 - Environment Agency – Reduced pressure on local flood defence assets & silt reduction within catchment. Increased engagement of local flood action groups.
- And not forgetting the public and the environment!

Who pays and When?

- Payment from the water company, upon successful completion and benefits assessment of the projects.
- In this instance the “result” is the implementation of the intervention (wetland, new channel etc).
- This reduces the need to setup detailed agreements which focus on outputs and metrics that are out of our control.
- Reduced risk for both parties.

Green Finance Initiatives

- Wyre RT are currently involved in a national pilot which aims to tap in to vast green finance reserves in order to fund NFM interventions at a catchment scale.
- Traditionally green finance investments are repaid over a number of years using income derived from the project (i.e hydro power)
- A novel approach is being used to access investment, which can be distributed to the catchment partnership in order to deliver NFM interventions.
- The beneficiaries of the improved resilience of the catchment to flood events then repay the investor/s according to the performance of the NFM interventions.



Managing Expectations

- Development of payment by results principles will take time and may not always fit with delivery outside of traditional NFM scope.
- Particularly relevant for urban areas pumps, storage basins and existing defences can be augmented with natural solutions to reduce pressure and increase the life span of traditional solutions – this results in costs saved and (hopefully) funding for NFM style projects.
- Where we remember the “N” in NFM we can also improve water quality, habitat quality and water quantity within watercourses with benefits for fish, invertebrates etc
- The use of wetlands, ponds and backwaters also allows us to restore and create habitats that are otherwise being lost at an alarming rate.