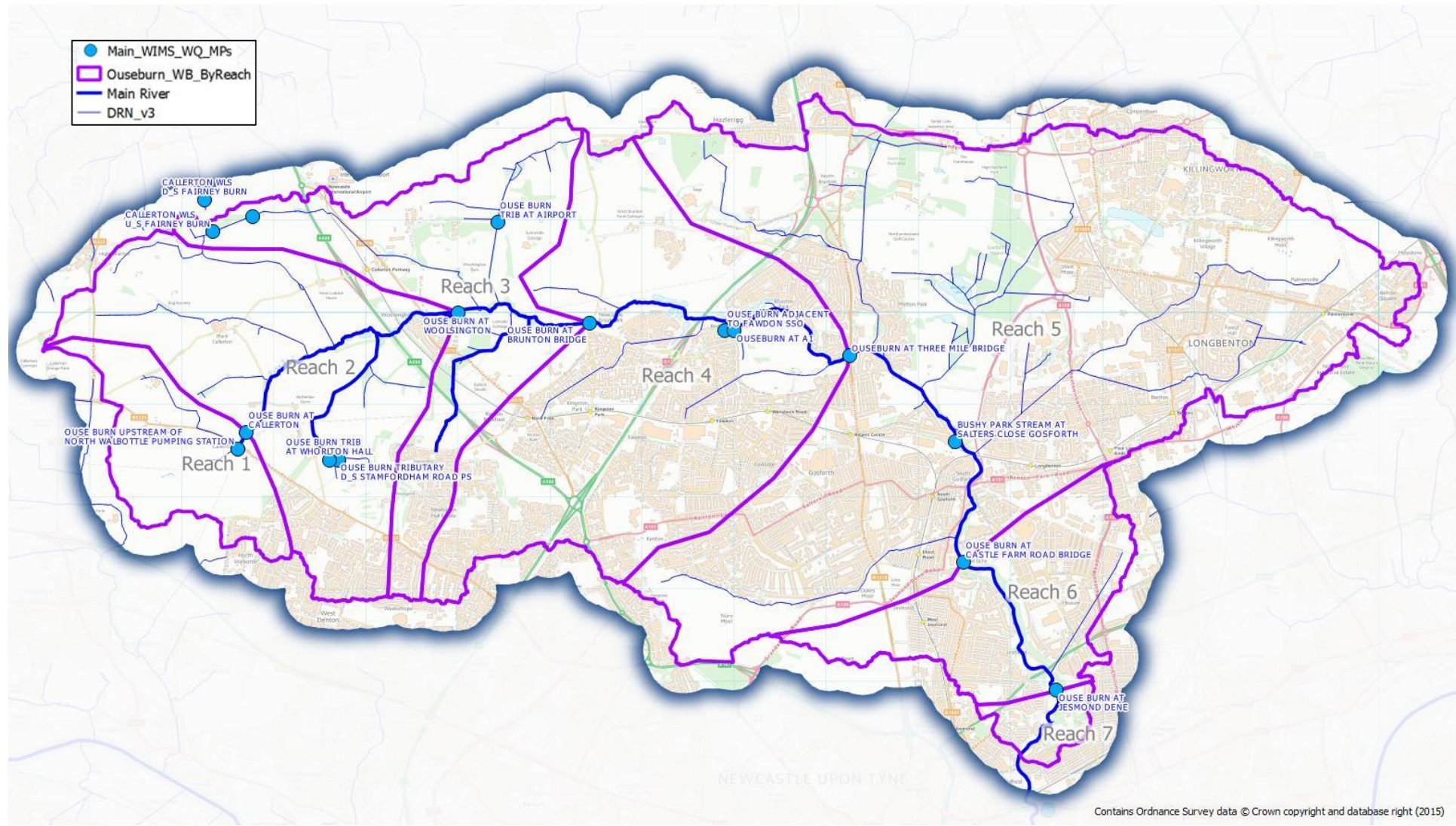


Dividing the Waterbody Into Reaches



Contents Page

1. Possible intro materials
2. Agriculture / Rural overview
3. Airport overview
4. Sewage overview
5. Reach 1: pack of plots, Evidence Table, Conclusions Table
6. Reach 2: pack of plots, Evidence Table, Conclusions Table
7. Reach 3: pack of plots, Evidence Table, Conclusions Table
8. Reach 4: pack of plots, Evidence Table, Conclusions Table
9. Reach 5: pack of plots, Evidence Table, Conclusions Table
10. Reach 6: pack of plots, Evidence Table, Conclusions Table



Example of Map in the Reach Evidence Packs

NIRS_Pollutant1_AgriculturalMaterials

- ★ Carcasses
- ★ Slurry & Dilute Slurry

NIRS_Poll1_SewageMaterials

- ★ Crude Sewage
- ★ Final Effluent
- ★ Grey Water
- ★ Other Sewage Material
- ★ Storm Sewage

DischargeConsents_Sewage

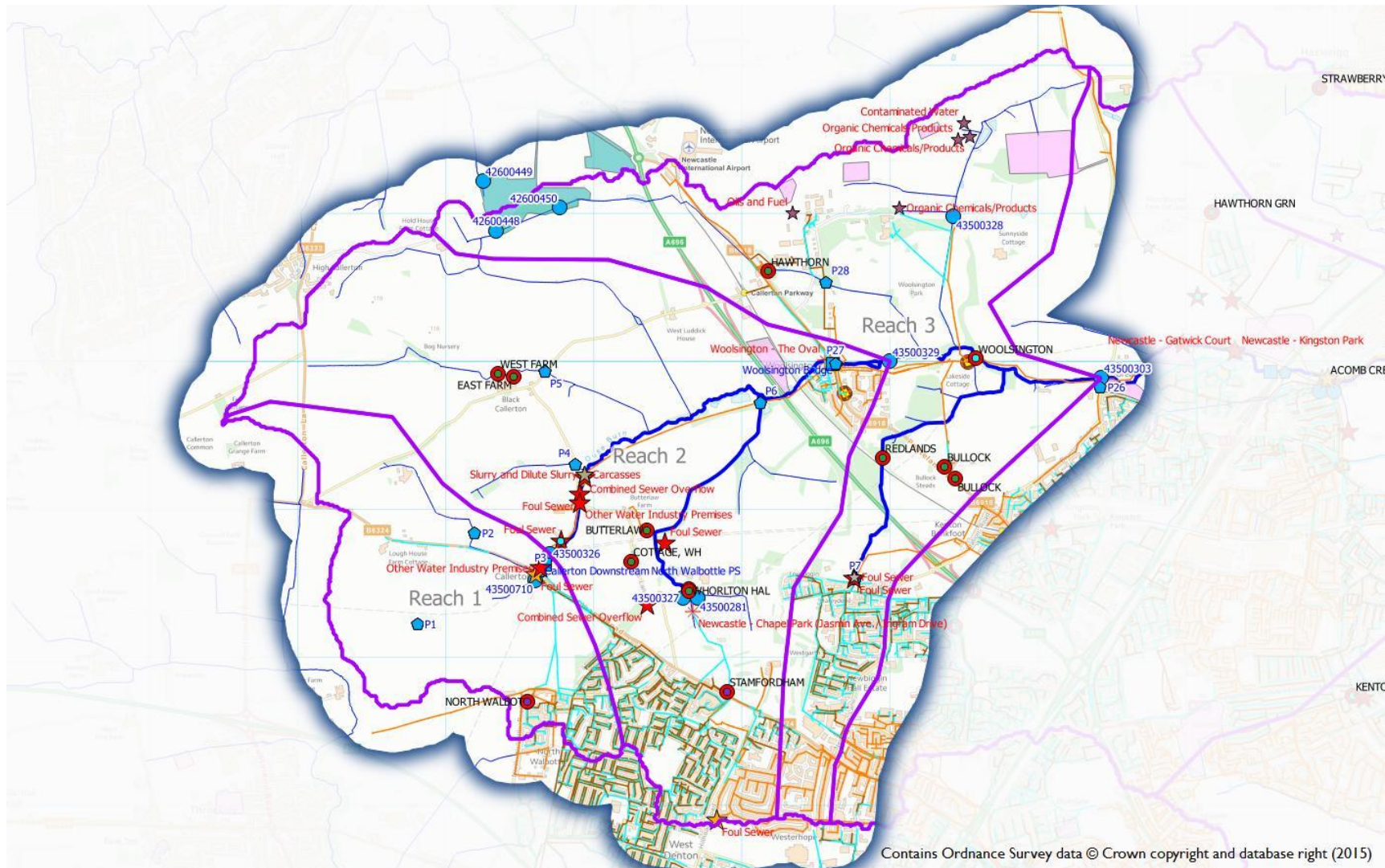
- CSO_WCo
- STW_WCo
- STW_Private
- PStation_WCo+Private
- Ouseburn P sample points
- Ouseburn WQ Logger_2010_11
- Main_WIMS_WQ_MPs
- Authorised_Landfill_Sites
- Historic_Landfill_Sites

SEWERS Ouseburn

- Combined
- Treated Effluent
- Foul
- CSO Overflow
- Surface Water
- Trade Effluent
- Natural Water
- ✱ Polluted Surface Water Outfalls

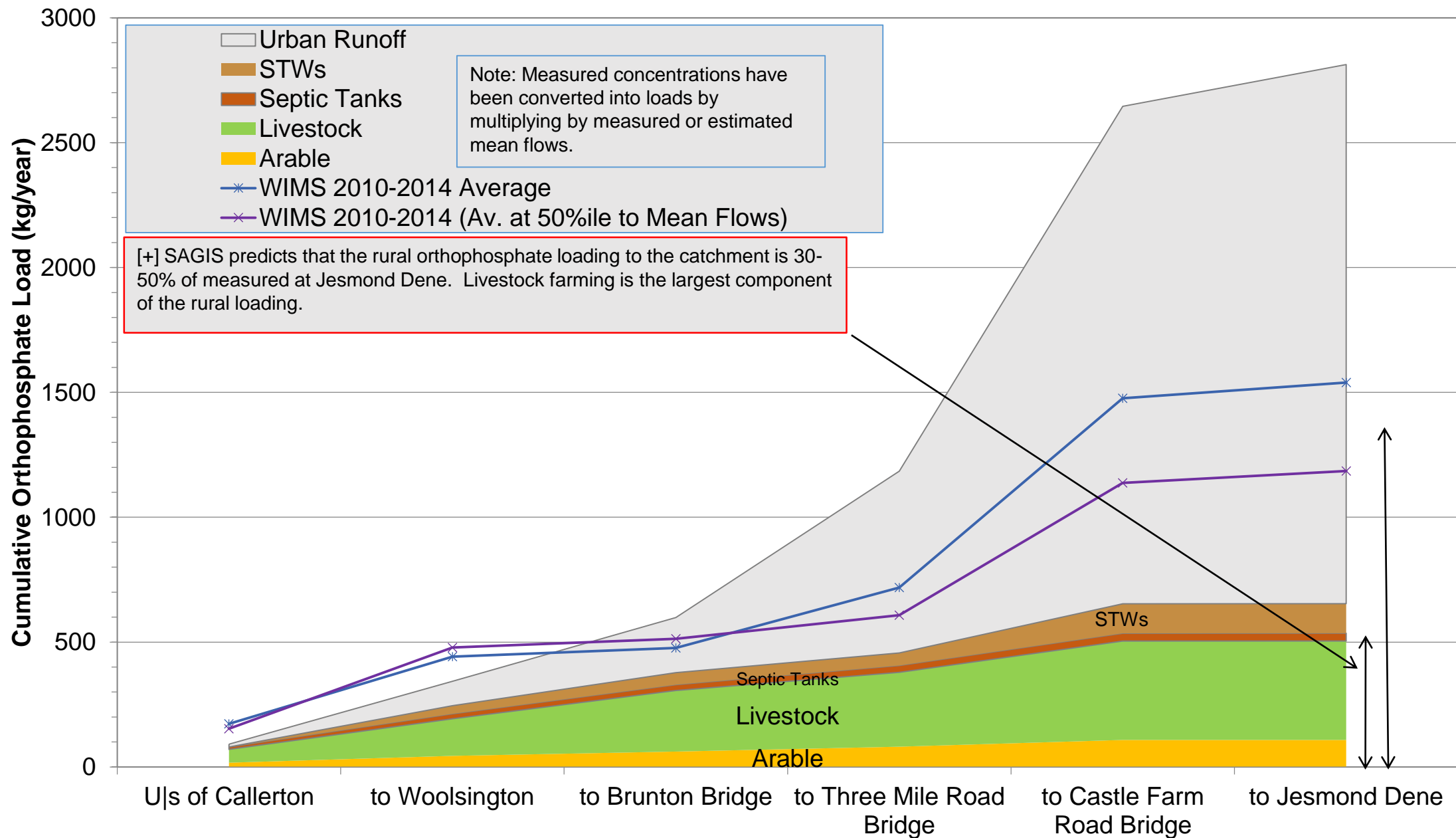
SEWERS Ouseburn_CSOs

- CSO Overflow
- CSOs_NWL
- Main River
- DRN_v3

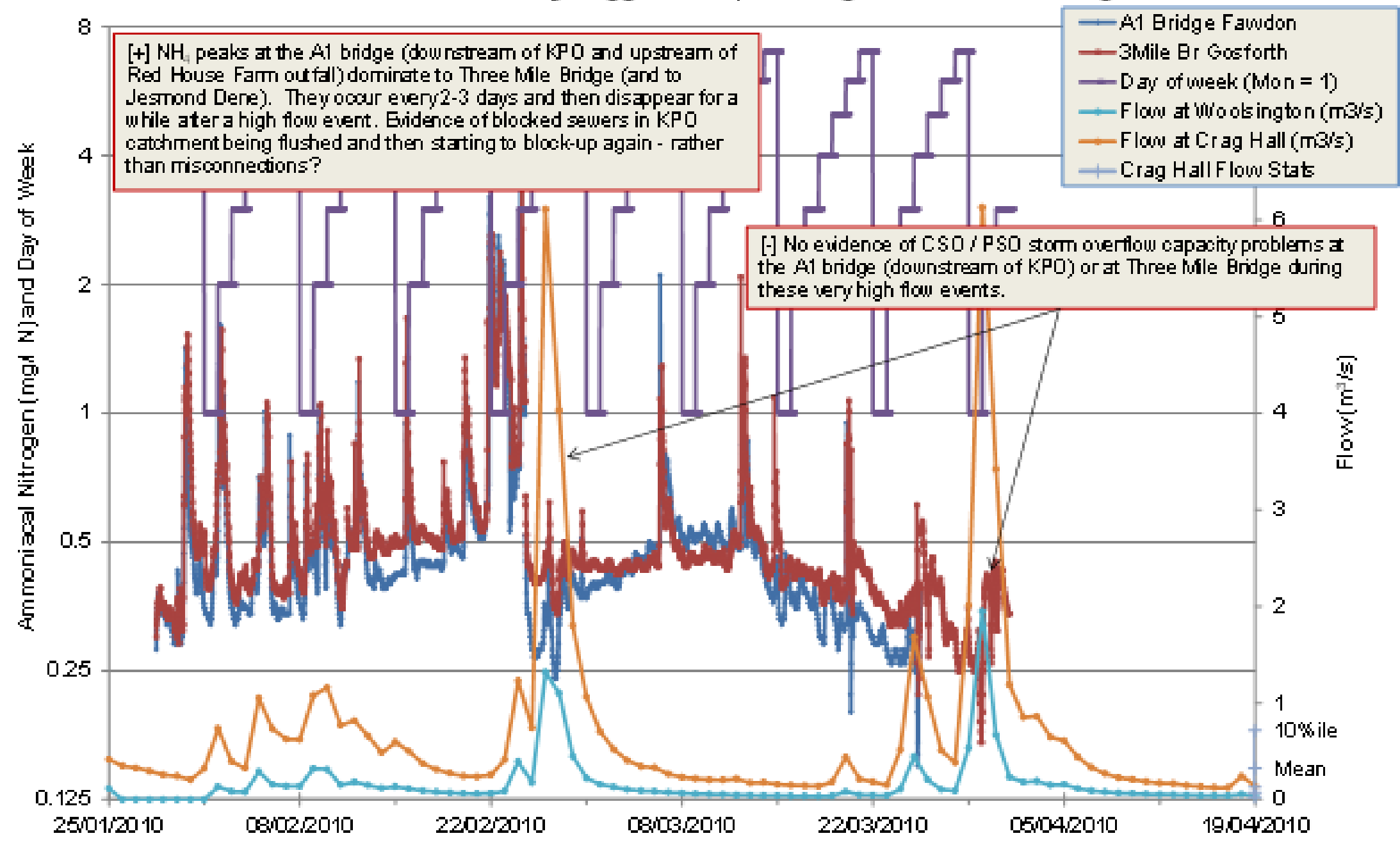




Ouseburn | SAGIS Diffuse Orthophosphate Predictions (Loading)



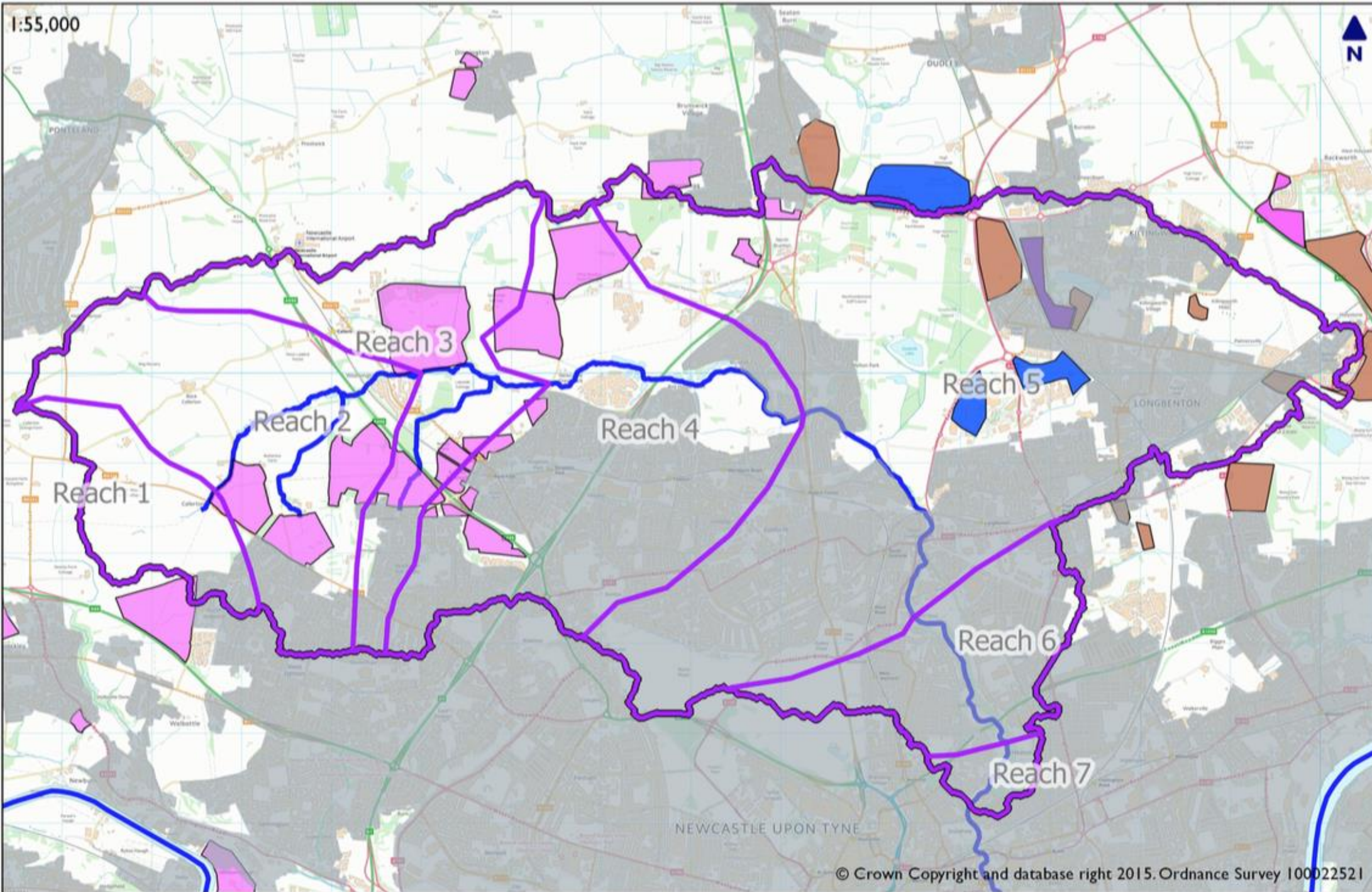
Ouseburn Water Quality Logger Data | A1 Bridge to Three Mile Bridge



Strategic Overview Group

- Developer guidance / check list for *improving* water quality
- Ouseburn Surface Water Management Plan how to approach developers, influence developers'
Masterplan, select a few sites to start with (e.g. Callerton? – one landowner but several developers)
- Identify opportunities to remove surface water inputs to sewer system as part of new developments to reduce pressure on CSOs
- Prevent sediment-bound phosphate from leeching off greenfield sites
- Quantify the phosphate impacts at certain sites? Crude source apportionment assessment – to help with heading towards a 'polluter pays' principle
- Influence Planning Committee members about the importance of measures
- Misconnections – pipe labelling? Research if this done elsewhere?

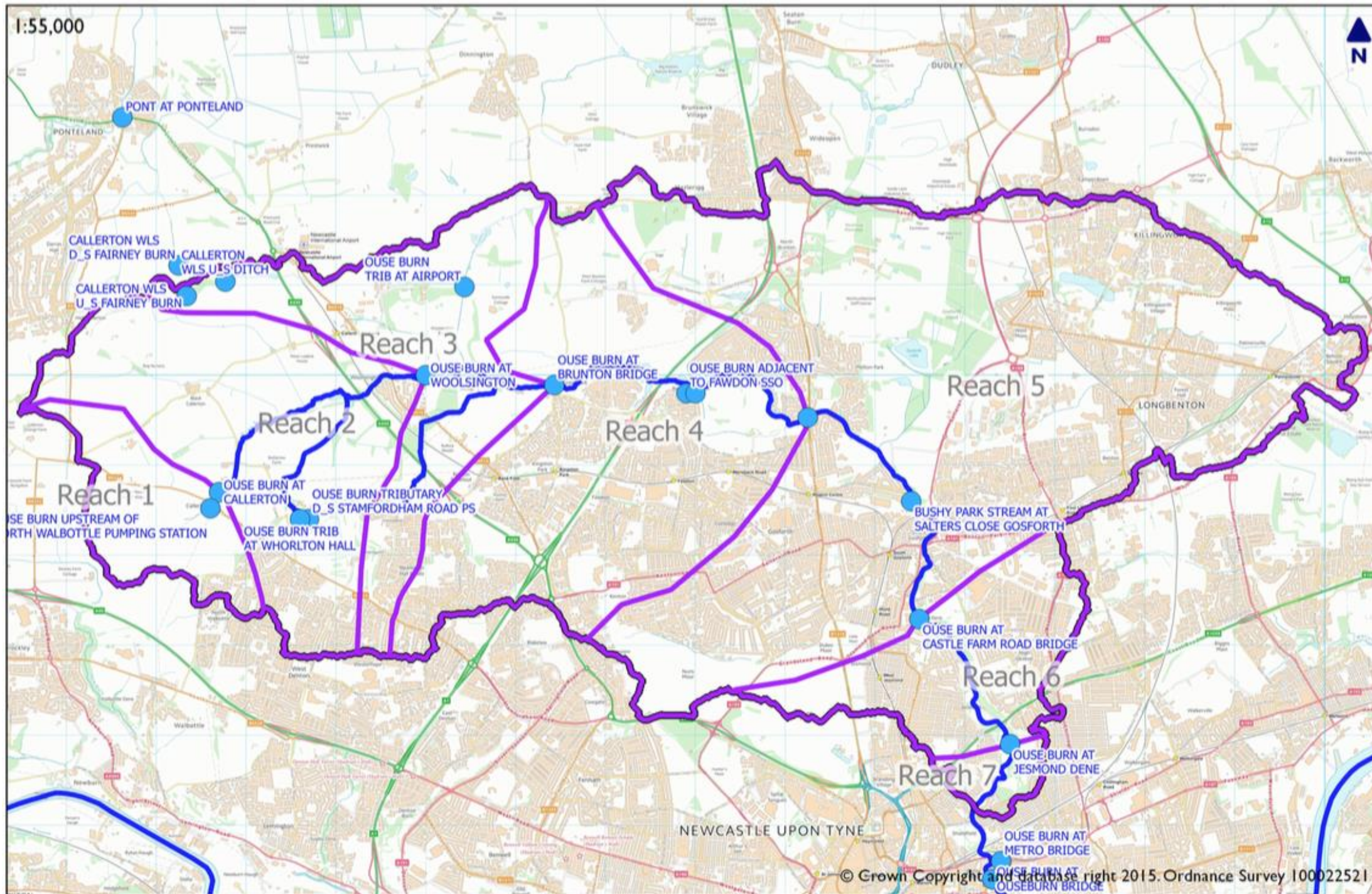
1:55,000



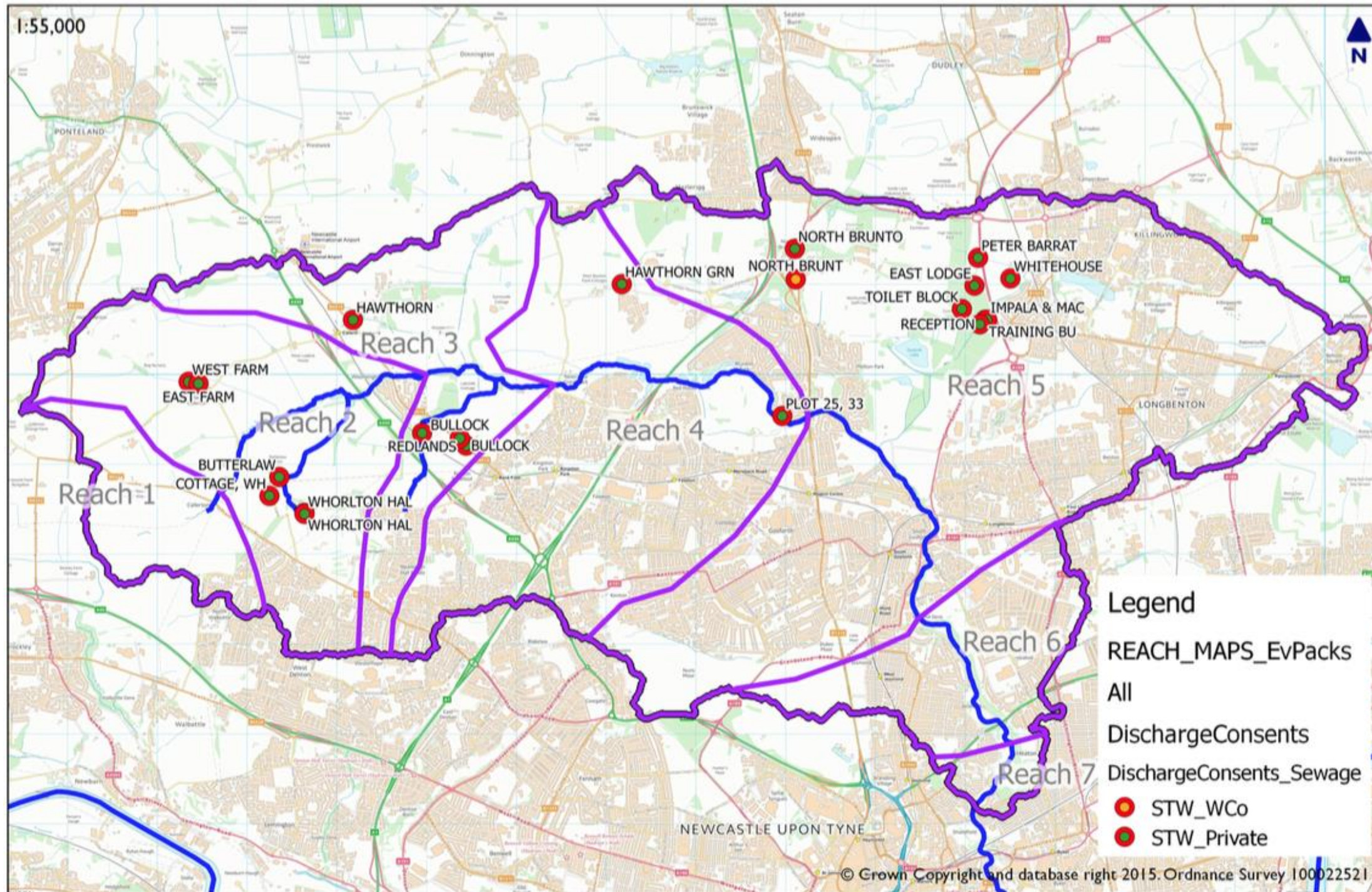
Waste Water Group

- Re-lay Brunton Lane Sewer
- Review misconnections in Kingston Park area in last 10 years
- Increase monitoring in reach 4; Reinstate monitoring at Salter's Close; additional monitoring points along river and tribs between Three Mile Bridge and Castle Farm Bridge
- Daylighting parts of culverts in reach 4
- Install water quality logger d/s of Kingston Park outfall
- Consider a community action plan
- Tackle misconnections with end-of-pipe treatment?
- Investigate water quality to east of A1
- Golf course and race course and parkland awareness campaign
- Take Killingworth Lake and Long Benton Letch out of the catchment (flooding) – include monitoring before / after
- Calculate properties in each reach likely to be on septic tanks in each reach
- EA to inspect operation of private sewage treatment works
- Rule in or out North Walbottle and Stanfordham Rd station as a threat
- Inspect surface water outfalls for evidence of misconnections and spot sample
- Regular CSO meetings to include a review of NWL's CSO data and EA's CSO data

1:55,000



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Legend

REACH_MAPS_EvPacks

All

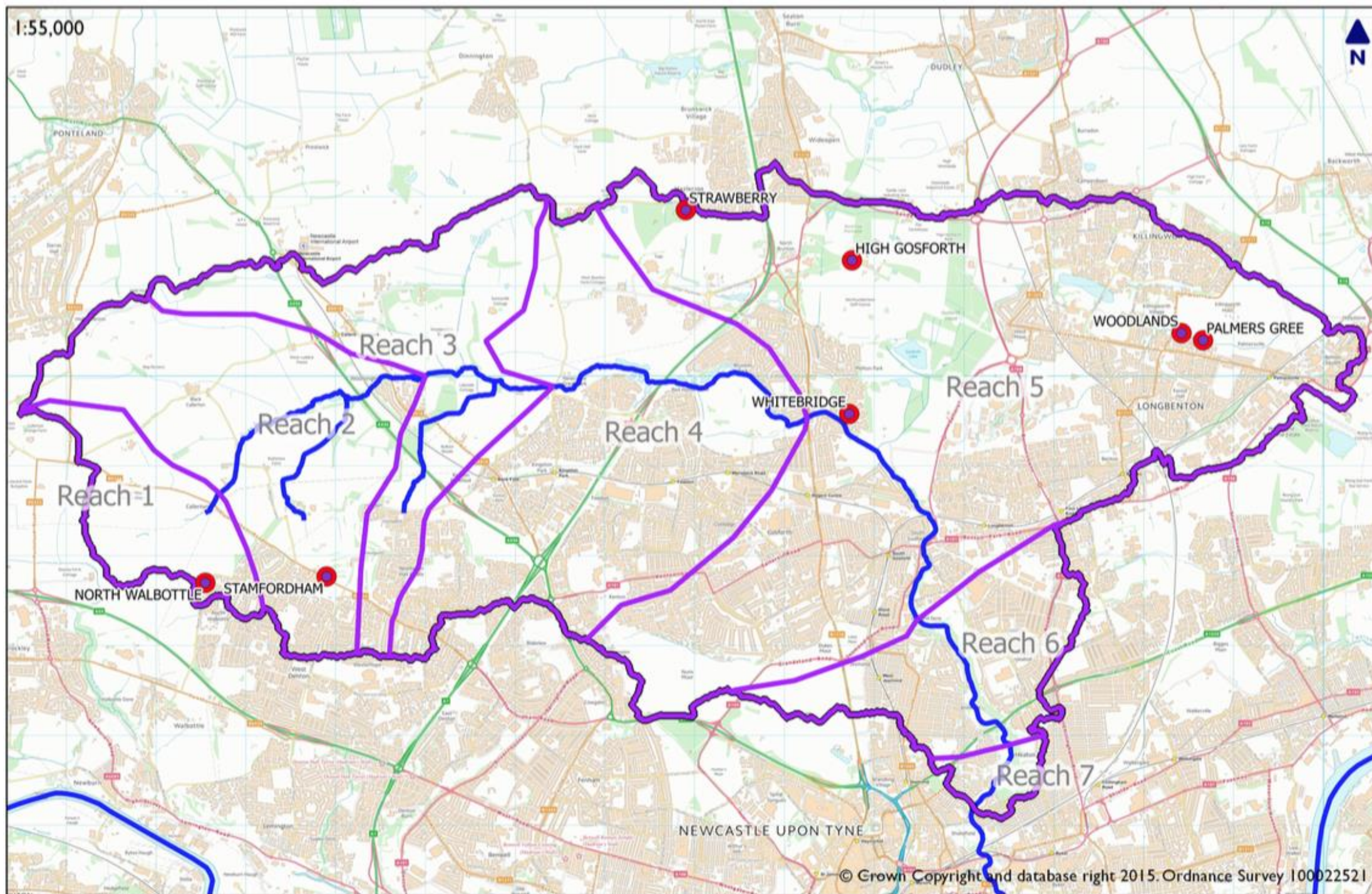
DischargeConsents

DischargeConsents_Sewage

STW_WCo

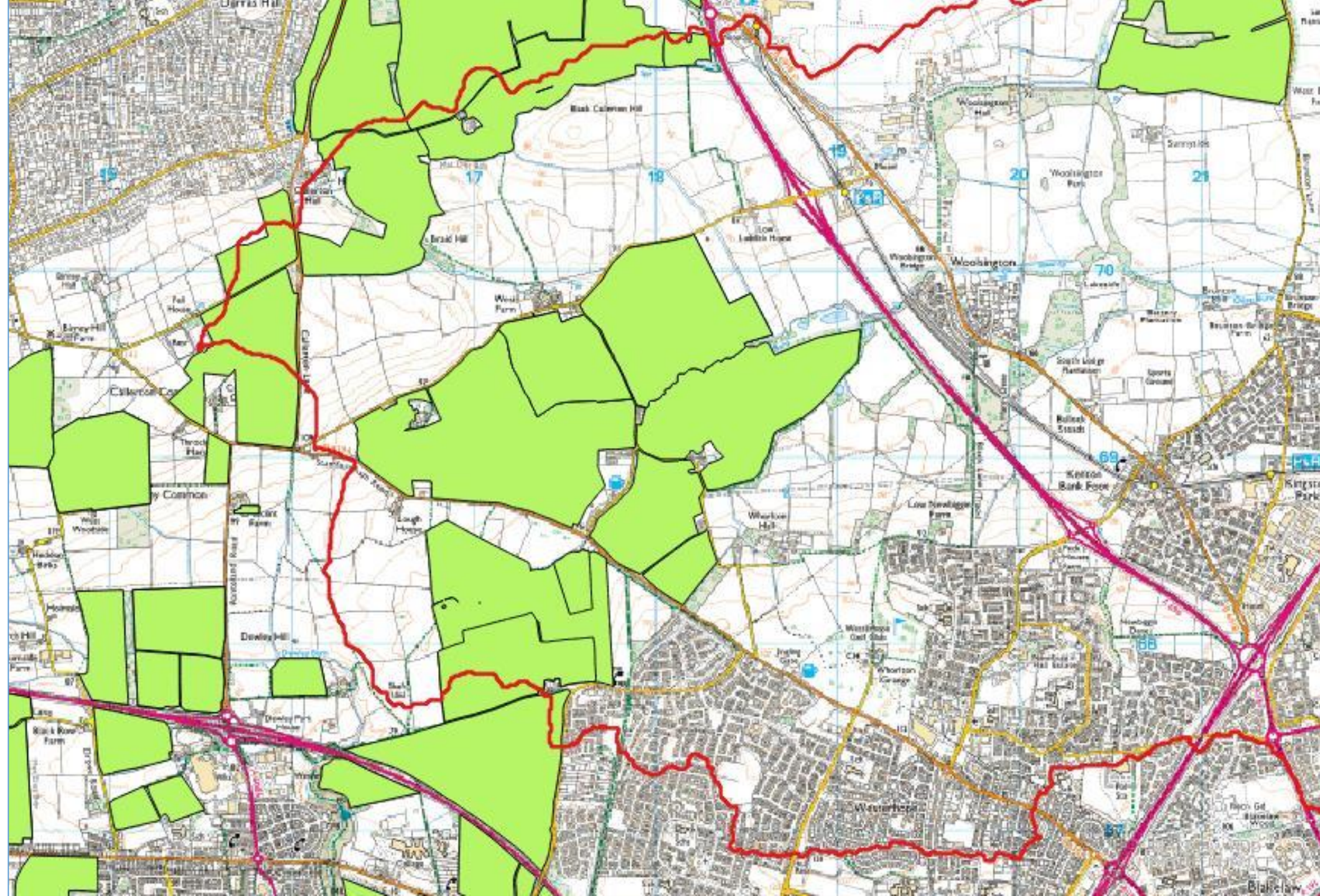
STW_Private

1:55,000



Agriculture and Land Mgt Group

- Detailed land use / farm system survey
- Soil testing in upper Ouseburn – sediment, watercourse
- Walkover survey and mapping of all the tribs / field drains / manure heaps
- Farm run-off survey - disconnected down pipes, run-off from hard standing
- Engagement with farmers, golf course / race course managers & simple testing
- Visit farms to discuss nutrient management – Farm Scoper?
- Monitoring water entering and leaving Gosforth Lake and West Moor trib
- Sampling in Great Park, Nun's Moor & Duke's Moor
- Monitor construction sites closely for phosphate
- Understand the drainage affecting rural areas *after* development







I strongly feel the project has helped to guide and prioritise issues. It has brought the right people together to tackle these.

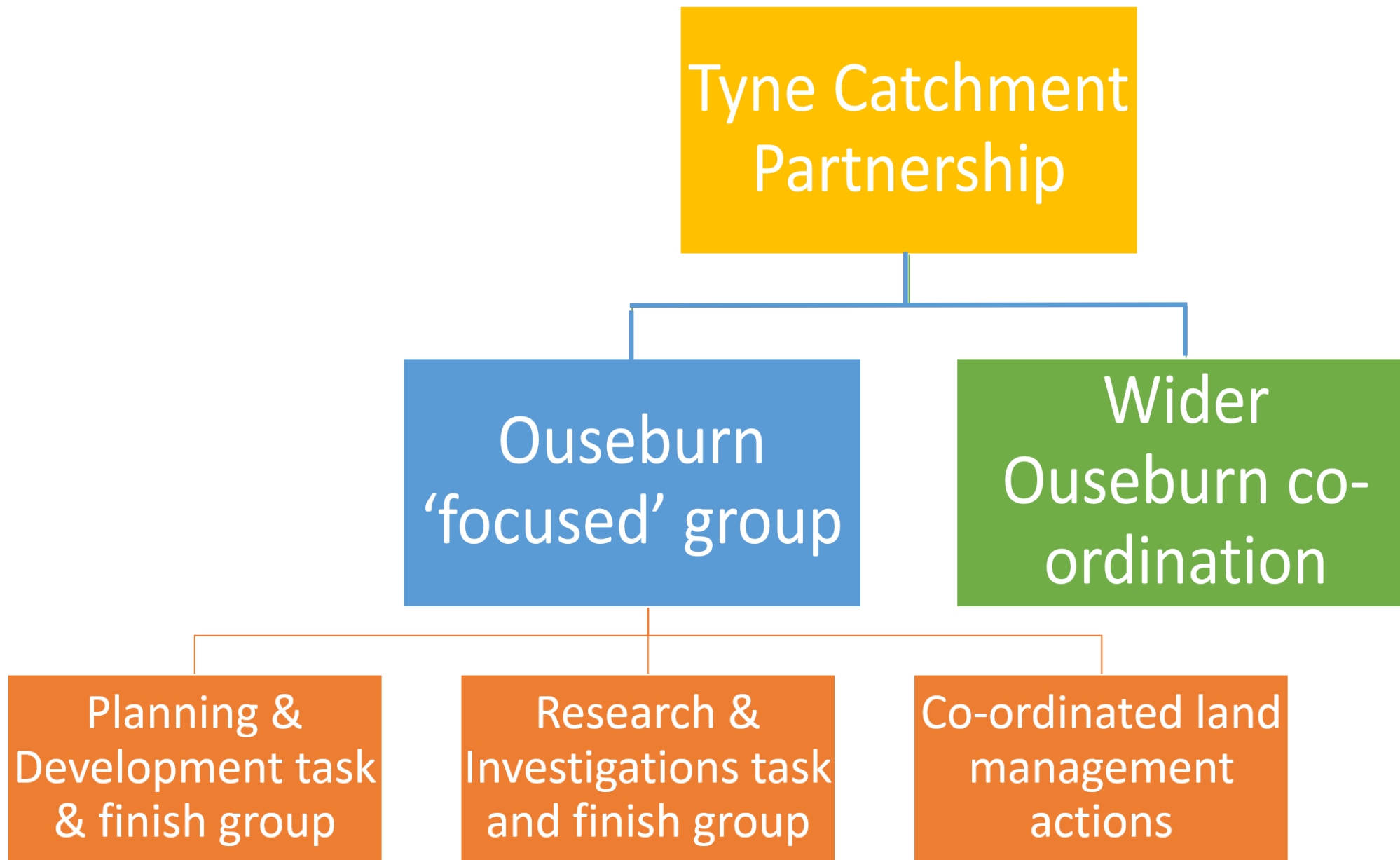
We are a lot more joined up than we were, working in less isolation

The approach to understanding the impacts on the Ouseburn has been very systematic

So far, this project has the most joined-up approach of any that I've been involved with. That is quite an achievement considering the range of agencies involved

...it is moving in the right direction but it needs to move faster. Issues such as housing development will affect the Ouseburn but we need a much more joined up response and feedback for prospective developers about what measures we would like in place





INVESTIGATING THE OUSEBURN

An Evidence and Measures approach to improving river water quality

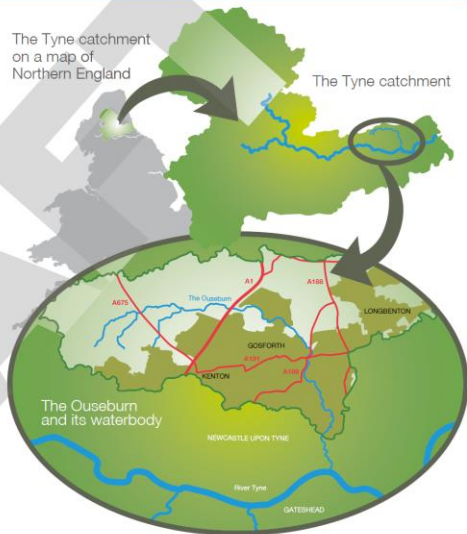
For the past year, a number of partners have been working together to identify the main causes of high phosphate levels in the Ouseburn. Actions have now been identified. We need your commitment and support to put them in place.

IMPORTANCE OF THE OUSEBURN

The Ouseburn is a major tributary of the River Tyne. Its catchment area covers large areas of urban Newcastle and North Tyneside. The river and its tributaries provide many ecosystem services, including surface water drainage and recreational opportunities, to a population of 166,000 people in 70,000 households.

ISSUES

- The Ouseburn currently fails to meet EU Water Framework Directive (WFD) water quality targets for Good Status, due to high phosphate levels which impact on the river's ecological health (invertebrates, fish and diatoms).
- Multiple suspected causes of pollution contribute to poor water quality. These include agricultural sources, golf courses, sewage discharge, and sewer misconnections. The airport used to be a problem but this was addressed in the 1990s.
- The variety of potential pollution sources and their dispersed nature means the Ouseburn is perceived as a complex and challenging waterbody which is very difficult to address.
- Water quality and drainage pressures on catchment are expected to increase, with over 6000 new homes planned and around 130 ha (1.3 km²) of business developments proposed by 2030.



OUR EVIDENCE AND MEASURES APPROACH

- A number of partners, committed to working together as the Tyne Catchment Partnership, agreed to contribute to and seek funding for a project to trial a new Evidence and Measures approach to improving water quality in complex catchments.
- The project covers the whole of the Ouseburn catchment, but partners agreed early on in the project to focus just on phosphate as the main water quality issue.
- The approach involves the use of a variety of existing data sources, rather than commissioning new surveys. Data are collated and interpreted prior to two workshops at which stakeholders consider first the evidence for pollution sources, and then the measures needed to address or understand these.
- Between July 2014 and May 2015, the lead partner (Tyne Rivers Trust) worked with others to gather existing information about phosphate inputs to the river over the past 25 years. These data were analysed by our consultants pJHydro and rUKHydro and used to inform two workshops held a few weeks apart in summer 2015.



For further information contact Tyne Rivers Trust (Tyne Catchment Partnership host), Unit 8, Shawwell Business Centre, Stagshaw Road, Corbridge, Northumberland, NE45 5PE; (01434) 636900, tynecatchment@tyneriverstrust.org

ASSESSING THE EVIDENCE

Six partner organisations took part in the Evidence Workshop. An 'Evidence Pack' was presented to partners in which the catchment was broken down into six manageable reaches. Three main pressures were identified:

- Diffuse agricultural pollution particularly in the upper catchment; Sewer misconnections leading to surface water outfalls contributing pollution directly into the Ouseburn;
- New developments, including house building and urban creep.

ACTION FOR THE OUSEBURN

The Measures Workshop built on the shared understanding and impetus gained in the Evidence Workshop. Discussion on what actions could be taken to address the phosphate issues took place in three groups, formed around the three main pressures.

Three principal areas of action were identified:

1. Engagement with rural land managers and follow-up investigations/joint-agency work around manure and nutrient management, together with assessments of stream bed sediments and field soils in specific rural locations and priority tributaries;
2. Investigations at specific locations for industrial and domestic sewer misconnections when identified, together with increased monitoring and new continuous water quality monitoring locations;
3. A strategic approach between Local Authorities, the Environment Agency and Northumbrian Water towards development sites in the Ouseburn catchment.

LESSONS LEARNED

- The Evidence and Measures approach is very effective for building consensus and can be applied in other 'difficult' catchments.
- There is a real need for a designated project leader with time allowed to ensure the right people are engaged with the project, to organise the data collection process, and to coordinate meetings and workshops.
- Partners need to be aware that effective working can be hampered by organisational language differences, but these can be overcome by providing time and space for discussion and by ensuring simple explanations are provided for technical concepts.
- Providing a solid, transparent evidence base really aids fact-based discussions, but the time and cost of the data and information gathering and analysis should not be underestimated.
- A small amount of seed funding can act as a catalyst to initiate work and attract additional funding.
- Working in partnership in catchments has significant benefits for partner organisations.

BENEFITS OF THE PROJECT

Some of the benefits already realised on the Ouseburn as a result of the Evidence and Measures approach include:

1. A greater awareness of current issues among partners in the Ouseburn catchment.
- A joint commitment from partners to improving the river and its tributaries and support for focused action on the ground;
- Reputational benefits for partners, including the ability to challenge preconceptions and to raise awareness of the importance of day-to-day operational and 'business-as-usual' impacts;

Improved relationships, contact networks and better liaison between partners, which may prove to be even more beneficial in future.



OUR NEXT STEPS

- The Tyne Catchment Partnership is keen to improve the Ouseburn through delivery of the actions identified. In some cases, this is just 'business-as-usual' with more attention paid to the Ouseburn, but other actions require funding, investment or even a change in policy.
- We need your support to help us link up and coordinate current initiatives and projects on the Ouseburn.
- We need to identify joint project opportunities on the Ouseburn in alignment with individual partner aims and needs.
- Subject to funding, we plan to undertake Evidence and Measures projects for other waterbodies in the Tyne catchment, including the Team and the Don. The process will be more efficient in future projects, as partners have a shared understanding of the approach and have developed good working relationships.

The project was led by the Tyne Rivers Trust and jointly funded by Defra, the Environment Agency, Northumbrian Water Group, and LEAF at the Community Foundation Tyne & Wear and Northumberland. Additional in-kind contributions were provided by the Tyne Rivers Trust, the consultants pJHydro and rUKHydro and the CaBA mentoring project.



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for Environment
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