Stantec Strategic Technical Consultant, Chris Mooij looks ahead to meeting the challenges of the Water Industry National Environment Programme and explores how we can embrace a new approach to delivering the desired outcomes.

Our understanding of how discharges to our water environment affect the chemistry and biology of our water and ultimately our water environment, is significant because there is more to take on board in more complex and dynamic water environments.

Meeting the Challenge of the WINREP and PR19

The Water Industry National Environment Programme (WINREP) associated with PR19 picks up the themes of the The State of Environment: water quality. In AMP7 WINREP is estimated to be £5.5bn with the largest investment associated with the removal of phosphorus. However, there are other areas of substantial investment including increasing fines to full treatment; increasing storm water management; reducing sanitary parameters. There are also some substantial AMP7 investment programmes that are designed to help water companies understand their contribution and manage their environmental risk by collecting the data needed to ensure that any eventual solution will be the right one.

Ofwat’s PR10 methodology has shifted the emphasis for water companies. The regulator wants to see bills reduce whilst strengthening the customer’s role in decision making; improving levels of service; securing resilience for our environment and; increasing innovation. This includes engaging with the community to support solutions that are welcomed, efficient and affordable. An analysis of the PR19 requirements reveals that AMP7 and beyond will need to be delivered across 10 strategic areas. See figure 1:

Water quality issues were the cause of 38% of all fish test failures, and 61% of invertebrate test failures in rivers in 2015. Over the last decade the number of serious water pollution incidents from water companies has remained broadly the same, with about 60 incidents each year. For assessed river water bodies in England, 59% were at less than good status for phosphorus in 2016. Nearly half of groundwater bodies will not reach good ecological status by 2021. For assessed river water bodies in England, 59% were at less than good status for phosphorus in 2016. For assessed river water bodies in England, 59% were at less than good status for phosphorus in 2016.

Putting Catchments at the Centre of a Different Approach

The AMP7 challenge for the water industry is about delivering more for less. The Environment Agency has identified future water quality pressures from population, climate change, emerging chemicals, plastics, microplastics and fracking. Water companies will engage with these pressures at some level in addition to dealing with existing pressures such as aging infrastructure and urban sprawl. The challenges are significant because there is more to take on board in more complex and dynamic water environments.

So, how can the water industry deliver more for less? If you accept that water companies can only get so far with commercial decisions, such as supply chain management, there needs to be some changes in approach, relative to previous AMP cycles. Moving forward, the industry will need to focus even more on managing environmental risk, recognising that the obligation does not end with delivering a schedule of engineering solutions. That includes proactively considering other contributors in their thinking and understanding what part they play in the overall solution. At a high level, these changes are about catchments, engagement and innovation.

‘AMP6 the language changed from Outputs to Outcomes. For AMP7 it needs to change from Outputs to Catchment Outcomes’

If water quality issues are looked at from one perspective only there is a good chance that the solution will not be the most efficient and will not capitalise on potential synergies. There are clear efficiencies available if water quality challenges are considered holistically throughout the water cycle. That means taking account of all the pressures, other contributors and different elements of the water cycle. Only then will concepts such as catchment management (including catchment permitting) truly come into focus. It is questionable whether the regulatory framework is in step with a more flexible, multi-stakeholder approach but it is clear that this is the industry’s direction of travel, as evidenced by the Catchment Management Declaration.

This has many benefits and requires a regulatory framework that enables dialogue and multi-faced solution development. It will take time and energy and there will be no doubt be changes in finalising solutions within the AMP7 regulatory schedule.

The Innovation challenge will take various forms (e.g. data, technology, engagement, catchment management practices). In one sense, a move towards catchment thinking suggests more holistic, less detailed thinking. However, it is equally valid to argue that the drive for efficiency means better understanding of assets and how they impact water quality – suggesting more detail. Both are true and need to be moved forward together.

Some innovation themes emerging and one of those is data. Water companies are looking more and more to data to drive efficiency, monitor operations, understand their contribution and to develop, test and optimise solutions. The volumes of data will be huge, and the industry will need the skills to collect, analyse, manage and use this data in the most effective way.

The regulator does not end with delivering a one-off collection programmes and modelling. The right solution for the catchments. Some solutions will be obvious, but others will require a careful assessment of the catchment pressures. The right solution for the environment and community is more likely to be multi-faceted and will require engagement supported by a flexible regulatory approach. These more sophisticated solutions will need the evidence that data and modelling can provide, and commissioned solutions will need to discharge big discharge of environmental health checks of the receiving environment.

It follows that to deliver full catchment solutions there needs to be valuable engagement with the community, regulators and other stakeholders.