Annex B – Consultation Response Form

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General Comments

We welcome the Strategy and agree with its focus on integrating water and land management under the wider natural resource planning approach. We fully support its underlying principles of catchment-based planning and the use of the ecosystem approach for water and land management. We believe the delivery of the Strategy will help maximise the benefits that a sustainably managed water environment could deliver for the Welsh economy and society.

We feel that the Strategy would be enhanced further by the inclusion of a clearly stated 'vision'. Its inclusion would help to integrate the different strands of the Strategy and provide a coherent sense of direction for future water use in Wales. We would be very pleased to work with Welsh Government to define this vision. As an initial suggestion we believe that the Welsh Government should be aiming to establish Wales as an internationally recognised nation where good water management provides sufficient good quality water and underpinned by sustainable land management. We believe we should be looking for examples from home and abroad for innovative solutions to our water management problems and then fostering integrated and collaborative working between government, local communities, third party organisations, regulators and the private sector to deliver a sustainable catchment approach that would be the envy of the world.

We also think that the Strategy should include a set of clearly-defined and bold targets to support delivering the vision. These targets should use a 'foresight' approach to test the predictions against a range of possible futures. NRW has experience in this approach and we would welcome the opportunity to work with the Welsh Government to help develop a set of targets for the Strategy.

It is important that the Strategy is fully integrated with other Welsh Government plans, strategies and legislation, particularly the Future Generations Bill, the Environment Bill, the Planning Bill and the Climate Change Strategy for Wales.

The delivery of Government's Marine and Fisheries Action Plan, and in particular the development of the first Wales National Marine Plan, is also an important current opportunity to integrate objectives for marine and freshwater resources. Similarly, plans and strategies of other organisations including water companies and Ofwat should be considered, along with other UK strategies and legislation.

The Climate Change Risk Assessment Summary for Wales (published in January 2012) recognises that:

- 20% of the population and one in six properties are at risk of coastal, river or some other form of flooding.
- Flooding is a greater threat in Wales than in the rest of the UK, with flash flooding and landslips a particular concern due to the steepness of much of the Welsh landscape.
- Groundwater resources are very limited, resulting in a reliance on surface water to meet the needs of homes and businesses.
- Despite relatively high rainfall, Wales can experience significant pressure on its water supplies.

Although the Strategy highlights the impact of climate change, energy use and a growing population, it does not set out clearly how Welsh Government proposes to provide and protect water supplies and other water uses in the future.

To fully utilise the natural capital that our water environment offers we would like the Strategy to look beyond water company-related activities and include all water services and dependent ecosystems in Wales, including the marine environment.

We have set out our responses to the consultation question below. We look forward to working with Welsh Government on the implementation of the Strategy over the coming years.

Consultation Questions

Please respond to all those questions that relate to your areas of interest. Any supporting evidence will assist in the analysis of responses.

Water for Nature, People and Business
1. In looking at implementing legislation, are there any specific areas that you would like us to focus on?
We recommend that the Silage, Slurry and Agricultural Oil (SSAFO) regulations are strengthened and incorporated into the Cross Compliance regime in order to minimise the risk of pollution from slurry storage systems and to help control activities away from the farm yard. This would help to address pollution risks at supplementary feeding stations and on farm tracks, for example. We welcome the opportunity to work with the Welsh Government on developing

Civil Sanctions for SSAFO and Environmental Permitting Regulations (EPR) offences.

We also welcome the development of national standards and guidance for sustainable drainage in Wales. We are already working closely with Welsh Government and other partners across Wales in reviewing the suitability of Schedule 3 of the Flood and Water Management Act 2010 prior to the development of the standards.

We would like to see more clarity on the role of the proposed new SuDS Body referred to in the Strategy document.

On a more general note, we believe the implementation of effective solutions to many of our water-related problems will require joined-up working between organisations. We would like to see Welsh Government reviewing current legislation and policy guidance to ensure that it supports this integrated approach.

We would encourage you to consider new risk based and proportionate approaches such as GBR's and economic incentives to drive the outcomes we are seeking.

2. Do you have any suggestions for improving and extending community involvement in integrated catchment management?

We agree that we must have greater community involvement in order to deliver integrated natural resource management. We suggest that the Water Framework Directive (WFD) River Basin Liaison Panels will provide the strategic direction but we need to look for innovative solutions to local engagement.

We used a series of catchment workshops to help consult on the recent River Basin Management Plans. We see a clear role for these informal partnerships moving forward to help with implementation of not only RBMP Actions, but also as a key delivery mechanism for integrated natural resource management – in line with the Environment Bill proposals. The challenge will be ensuring this process influences action beyond the catchment scale, as well as within it.

Our Clear Streams project takes an integrated approach to managing water quality, both tackling pollution at source as well as driving forward a 'softer' agenda aimed at raising people's awareness of, and sensitivity to, the environment. To this end we have run a number of projects helping people to discover their environment, including 'Digital Streams' where members of the community have gone out to explore their local river from source to sea, documenting their discoveries through photography and writing.

In addition to the example above we suggest that community involvement can be increased by working with other partners such as Small and Medium size Enterprises, Local Authorities, and commercial member-based organisations and institutions to identify the people who are ready to do more now. There is an example of how we have worked with business in our response to question 25.

Improving the water environment will necessitate changing behaviours and this will only be possible if we first establish a greater understanding of who the key customers are, and then seek to understand their views and beliefs.

In our experience community groups that are set up to deliver environmental outcomes tend to be reliant on one or two key individuals and can become less effective over time if these members leave the group. We suggest that extended community involvement needs to focus on existing community groups and engaging these to consider water-related issues. There needs to be support for their development of sustainable financial and intellectual capital.

Although we recognise that community engagement could be an extremely effective way to tackle some of the challenges we face we must recognise that this approach is not a silver bullet. Most engagement will be around those single issues which are of interest to individuals, whereas Welsh Government wants broader holistic approaches. Getting the most out of these two approaches will be challenging and we urge Welsh Government to look outside the normal approaches to find innovative techniques and approaches to learn from and make the best of any opportunities.

3. We have highlighted the close link between land management and the water environment. Are you aware of examples of good practice which could be reproduced elsewhere?

It will important to note going forward that delivery mechanisms are established to manage the issues of the environment in an integrated way within which water is an important element, rather than just managing water to take into account wider land management issues.

The success of the Strategy will depend largely on the way in which land managers change the way they work, having first understood the links between their actions and impacts on the water environment. This understanding will only be achieved when good practice examples – especially those that are cost neutral or economically beneficial for land managers – are widely promulgated.

We have many examples of the links between land management and the water environment in Wales. We also suggest that Welsh Government draws on examples of best practice from a global reference point. We look forward to working with Welsh Government to identify global examples of integrated land and water management.

The schemes outlined below have not only provided a far greater range of social, environmental and economic benefits when compared with traditional approaches, they have often proven to be more cost effective too.
Rather than outline all of the projects we are aware of, we have mentioned a few Welsh examples below to provide a flavour of what is possible. Further examples of how Natural Resources Wales and others have worked on integrated projects in Wales can be found on the Welsh Government Website. We would be happy to provide further information on these projects if it would be

helpful:

Pontbren
Farmer-led approach to sustainable land management in the uplands. The Pontbren project used woodland management and tree planting to improve the efficiency of upland livestock farming. It evidenced that shelterbelts and buffer strips not only improve farm businesses and wildlife habitats, but also reduced water run-off during heavy rain. The scientific data from Pontbren is now being used to study the effects of land use on bigger catchments prone to flooding.

Llanelli
Dŵr Cymru is investing £15 million in the Llanelli and Gowerton area as part of their Rainscape scheme. Rainscape aims to reduce the amount of rainwater that flows into local public drainage systems and will therefore reduce the risk of flooding. It is anticipated that schemes in Llanelli and Gowerton will remove around 20% of the surface water runoff currently entering the sewerage network in these areas. They will also install planted areas and new green space that will absorb the water. Dŵr Cymru is developing schemes in partnership with Carmarthenshire County Council and us.

Grangetown
We are working with Dŵr Cymru Welsh Water and Cardiff Council on this rainwater management scheme. Work is now ongoing to implement the feasibility study for this project, which aims to make carbon reductions from lower pumped volumes at downstream pumping stations, reduce surface water flooding and improve biodiversity. The scheme also intends to unite this part of the city with the riverine environment whilst improving its connectivity to Cardiff Bay. The design and public consultation phase will start in June 2014. Construction will begin by the end of the year.

Maesteg
We are working with Dŵr Cymru Welsh Water and Valleys to Coast housing association on this Water Sensitive Urban Design scheme. We hope this leads to wider benefits as 16% of properties in Wales are social housing. The benefits include reducing sewerage spills, less surface water flooding and reduced demand for water through water efficiency measures. The ecosystems approach being used to develop and deliver this work will help Water Framework Directive-related ecological and chemical improvements. The partners will commission a feasibility study by the end of the year.

If we are to apply these types of solutions on a broader footing we will need Welsh Government to provide the tools to enable us to lift the good practice and to demonstrate where and how it can be applied in such a way that it provides more cost-effective or better solutions to the “end of pipe” solutions we are well versed in. For example, we have years of experience in estimating the cost and level of protection provided by a flood defence scheme but still lack the means of estimating the risk reduction and long-term costs of a land management intervention that could similarly reduce flooding.

The other barrier that needs to be overcome is funding and ownership of schemes. For example, end of pipe solutions are often funded from capital and have a clear owner, and a defined revenue budget for maintenance. It is not always clear who should "own" or pay for land management solutions, and how any budget for maintenance would be secured.

We look forward to working with Welsh Government to develop the tools to compare the land management approach to the 'end of pipe' solution.

4: **What opportunities do you see for developing PES schemes in relation to water management in Wales? What should be the role of Government in developing these schemes?**

In our response to the Environment Bill White Paper we set out in detail our position regarding PES:

'We support the development of Payment for Ecosystem Services (PES) schemes. We also believe that development of markets for PES should not simply be a 're-packaging' of existing initiatives, but should stimulate innovation and new opportunities, bringing new types of ecosystem services and new participants into the market.

We agree that Natural Resources Wales has an important role in the development of markets for ecosystem services and we look forward to working with Welsh Government to clarify the roles of facilitator, broker and accreditor. In addition, the White Paper does not mention market regulation. We suggest therefore that further consideration is given to whether there should be market regulator and, if so, who would be appropriately placed to take this role.

It will be important to clarify these roles and to develop the structures and institutions needed to support and stimulate the development of PES markets that operate efficiently and in which buyers, sellers and the general public can have confidence and trust. Given that experience of PES is generally limited, it will also be important to look to other UK and international experience in this area to inform the future development of the framework in Wales.

One option might be to use the innovative approaches referred to in proposal NRM7 (Natural Resources Wales' powers to carry out experimental schemes) in order to gain real experience of PES scheme operation, to help define the roles of facilitator, broker, accreditor and potentially market regulator. Natural Resources Wales would welcome involvement in any such schemes

It may be that Natural Resources Wales may not be the most appropriate body to undertake these roles, due to potential conflicts of interest resulting from our desire to be active participants in the PES market itself. If Welsh Government is minded to vest any of these roles in Natural Resources Wales, there would need to be governance structures within Natural Resources Wales to ensure that conflicts of interest are avoided, if necessary backed by appropriate legislation. The critical need is to avoid creating the perception of a conflict of interest that would undermine public confidence in the PES market. This is especially so

given the important role that PES could play in funding the provision and maintenance of ecosystem services in future.

Thinking and practice on PES is still largely in its infancy, so any roles that Natural Resources Wales – or indeed any other body - might take on in relation to PES markets will have resource implications in terms of both capacity and capability for the organisation(s) concerned. We would welcome further discussions with Welsh Government about any roles they are minded NRW should take.'

We believe that it is important that the wider concept of PES seeks to include 'total cost transparency' and we welcome the opportunity to work with Welsh Government on how this could be achieved. We also think that it is important to recognise that the current users of ecosystem services do not pay for them, rather the cost is left to future generations and the public purse.

In terms of water management in Wales we believe that PES could be employed to resolve a number of water quality, flooding and water resource problems. For example, at public water supply reservoirs land managers could be paid to change their practices within the reservoir catchment. This would result in better water quality within the reservoir and a subsequent reduction in water treatment costs. Wessex Water has already adopted this approach at some of their public water supply reservoirs. It has also recompensed land managers for reducing fertiliser application adjacent to some of its supply boreholes to reduce nitrate levels.

We welcome further discussions with Welsh Government about the development of PES schemes in Wales and other incentive schemes.

5. What more could we do to make the most of our water, particularly in terms of supporting our agenda for Green Growth?

We believe there is a niche market here for Wales.

For example, by developing tools and techniques to introduce efficient water use across all sectors and by grasping the concept of PES, new innovative opportunities will be created for Welsh industry. This will not only arise through providing the skills to develop these innovative approaches, but also through insuring Welsh industry and agriculture is at the forefront of efficient resource use. As a result production costs will reduce. Additionally new markets will evolve using these skills to provide a new sector for Welsh industry. Furthermore, the development of efficient industry "hubs" in Wales would set the agenda for other industry to move to Wales in order to benefit from these approaches. There will also be opportunities for Welsh companies to export their expertise. The recent Wales Water 2014 Conference highlighted a number of companies based in Wales who are already promoting products for use by the water sector.

More broadly, we also believe there would be benefits in developing better links between water cycle planning, Local Development Plans and development

planning and the water company AMP cycle. See also our response to question 10 and 11 below.

Taking Action to Reduce Pollution

6. Do you agree with our focus on diffuse pollution? If not, please explain why.

Yes we agree with the focus on diffuse pollution.

Given the greater control of point source discharges, diffuse pollution is now a major emerging issue resulting in numerous WFD water-body failures and impacts on protected sites in both the terrestrial and marine environments. Unfortunately, many businesses and people are still unaware of the issues associated with diffuse pollution and their role in combating it. There is a need to review and update the various existing guidance on preventing diffuse pollution, and to use more modern media techniques in disseminating it to targeted readership.

The NRW document on diffuse water pollution mentioned in the text highlights the key sectors responsible for diffuse water pollution and the issues that will need to be addressed. In order to achieve sustained outcomes, we initially need to provide a firm evidence base which will enable compelling arguments when collaborating on solutions with the responsible sectors. This evidence will provide the foundations from which progress can be made and, coupled with the support of partners, lead to alternative, innovative solutions as well as the continuation of tried, tested and successful interventions.

We note that the focus on tackling diffuse pollution is heavily targeted at NRW, and its regulatory role. At this time of austerity and reducing resources we advocate the use of partnerships and education alongside our existing powers and duties.

NRW strongly supports the introduction of General Binding Rules (GBRs) in areas where our evidence shows that poor practice, outside of current regulation, is the cause of diffuse pollution. Of particular concern are a range of poor land management practises in the rural setting. A regulatory framework that embraces GBRs has the potential to bring both equity and proportionality to the regulation of relatively minor but widespread poor practice that impacts on the quality of our water bodies. NRW believes that GBRs should be introduced to uphold key elements of good practice.

7. Are there any additional pollution problems which you believe we should identify? If so, what actions do you believe are required?

The pollution issues associated with abandoned metal mines need to be recognised in the strategy. We look forward to continuing to work with the Welsh Government to tackle this very major and expensive legacy issue.

Acidification from atmospheric deposition continues to have an impact on our upland rivers, lakes and terrestrial ecosystems. Although sulphur emissions have fallen by 90% in the last twenty years, nitrogen emissions have not fallen to such a degree. This is because nitrogen emissions are principally from diffuse

sources, with transport emissions being a notable example. Recognising the exacerbating effect of some forestry practices on acidification, we have adopted the use of the "*Practice guide on managing forestry in acidified catchments*" in our own operations, and also through our regulatory role with other forest operators. Managing uplands to enable them to become more resilient to the impacts of acidification, for example by blocking old drainage grips across peatlands, also has a role to play in attenuating flows.

We also welcome the opportunity to work with the Welsh Government on Codes of Good Practice for Fuel and Oils (use and storage), and general agricultural and industrial processes.

Having registered over 53,000 private sewage treatment systems in Wales since 2011 we have concerns about the quality of installation and level of maintenance of such equipment. Where such systems are poorly installed and maintained they can pose a contamination risk, with subsequent health impacts, to potable water supplies and nearby watercourses. We have produced guidance for septic tank owners but it would be helpful to address the issue through engagement with the industry that maintains and installs the systems, ensuring that they operate to particular quality standards. The Water Strategy should therefore encourage the development of such initiatives, encouraging the private companies and their representative bodies to work closely with the regulators to improve future performance of private sewage systems.

The work on registering septic tanks also showed that there is a need to assist some home owners in improving or replacing their existing sewerage provision. For some homes this may be unaffordable. In order to prevent damage to the environment some assistance from Welsh Government may help.

Pollution from storm overflows and cross- and mis-connections continue to be an issue and we look forward to working with the Welsh Government and the water companies to provide innovative solutions to these problems. Many of these problems occur when properties are modernised and improved. A better understanding by architects, builders, home owners and planners of the impacts of misconnections could reduce the risk.

Some chemicals introduced because of their beneficial effects to people, including flame retardants and pharmaceuticals, are increasingly found in sewage. These are not all easily treated by traditional sewage treatment methods and their impact on the ecology of the water environment is often unclear. Research into their effects is ongoing and we look forward to working with Welsh Government to tackle this emerging problem.

Although banned as a sheep dip in 2006 because of its acute toxicity to aquatic invertebrates, cypermethrin continues to be routinely applied to young trees to control Pine Weevil. It is also an active ingredient in some medical applications, for example for head lice. It features on the Forest Stewardship Council's list of highly hazardous substances, but there is an existing derogation which has recently been extended. Work is being undertaken to identify alternative controls

to the use of cypermethrin, and its use on the Welsh Government estate is currently under review.

8. Do you agree with the scope of activity for General Binding Rules, as specified?

In our response to Environment Bill White Paper we set out in detail our position regarding the scope of General Binding Rules:

'The introduction of General Binding Rules (GBRs) would fill a gap in sector - based regulatory frameworks allowing a more proportionate approach to be taken to lower risk activities. When used appropriately, GBRs can reduce the regulatory burden placed on businesses and individuals without reducing standards of environmental protection. We already have some experience of GBRs across a number of regulatory regimes: standard rules permits under the Environmental Permitting Regulations are an example.

Natural Resources Wales has data showing that the scale of poor land management practices in Wales has resulted in significant numbers of water bodies failing to achieve the standards required by the Water Framework Directive. We believe that the introduction of GBRs that address observed poor practice would require land managers to adopt more sustainable land management practices, and help meet key environmental outcomes.

In order for GBRs to be both successful at delivering environmental outcomes and to support land managers in adopting good practice, each GBR should be complemented by comprehensive guidance that is easily accessible. GBRs would also need to recognise or utilise established best practice frameworks to avoid undermining these and causing conflict or confusion.

Natural Resources Wales would also look to use GBRs alongside and to complement and support other mechanisms such as management agreements, payment for ecosystem services, partnership agreements and cross compliance regulations (where receipt of Single Farm Payments is contingent on compliance with specified standards including in relation to environmental protection), as well as more traditional permitting and consenting.'

9. Do you agree that variable monetary penalties are the appropriate mechanism for Natural Resources Wales to enforce general binding rules?

Yes, but we must be certain that the fine suits the offence. For example, a poorly constructed and operating septic tank may cost many thousands of pounds to repair and minor fines may not be sufficiently punitive to create the required operator response.

Improving the way we plan and manage our water services

10. Do you agree with the principle behind aligning the Water Resource Management Plan and Drought Plan with the Asset Management Planning Cycle?

We agree with the principle of aligning Water Resources Management Plans (WRMPs) and Drought Plans with the Asset Management Planning (AMP) cycle. This is essential because AMP business plans provide the principal funding route for water company investment on the water supply side, and in our

experience poor alignment of the plans can cause problems for water companies in securing timely investment through Ofwat to address supply-demand pressures. This has created problems for us in addressing unsustainable abstraction issues in line with statutory timescales.

We welcome the recent clause in the Water Act, 2014 which sets Drought Plan production on the same 5-yearly cycle as WRMPs and AMP business plans.

We believe further gains could be made by aligning these plans with the timescales for the proposed Natural Resource Policy framework, to ensure real gains in relation to stakeholder involvement, to avoid confusion at the consultation stages, and to potentially integrate with other consultation activities and delivery mechanisms.

Whilst agreeing with the principle of aligning plans, we would have reservations if there is an intention to amalgamate WRMPs and Drought Plans into a single plan. We appreciate that this approach may appear to provide a more joined-up and transparent approach for customers and stakeholders. In reality, however, the purposes of the two plans are quite separate. The WRMP is a long-term strategic plan to forecast and manage supply and demand over a 25-year planning period. It takes account of pressures that may impact on supply and demand over the period, such as population growth and climate change. The Drought Plan is an operational plan that sets out the operational steps that companies will take to manage supply and demand in drought events, balancing the needs of consumers, businesses and the environment.

Given their different purposes, we do not think that there will be much to be gained by way of process efficiency for water companies in preparing a single plan, nor for NRW in our advisory capacity to Welsh Government on the technical content of the plan. On the contrary, we are concerned that the resources and skills required to draw together the components of both WRMPs and Drought Plans into a single plan may result in workload issues or additional costs for the water companies, and for NRW, and potentially could lead to a reduction in the quality of the plan(s).

11. Do you agree that there is a need to improve our long term planning for waste water and sewerage management?

Yes, we already have examples where the lack of wastewater treatment and sewerage provision impedes development, resulting in social, economic and environmental impacts. In parallel with developing innovative solutions to water treatment problems, we believe that long-term planning for wastewater and sewerage services is essential, ensuring that the proper connections are made to land use planning and the Planning Bill. This will ensure that development takes place in the right place, where services and capacity are available, and new provisions are properly planned upfront.

Without these plans there will be a continuing risk that wastewater and sewerage systems will limit sustainable development and growth.

We would also advocate a dialogue on the future direction of wastewater treatment and disposal in Wales. In recent decades there has been a shift away from local treatment works to larger-scale treatment, often to coastal or estuarine waters. This has been driven by the requirement to comply with European quality directives, along with the cost-efficiencies offered by large-scale treatment. As part of a catchment based approach, we believe that localised treatment of wastewater should be considered as it could help deliver sustainable water management. For example, localised treatment may significantly reduce energy and carbon costs, and ensure that river flows are maintained nearer natural levels. With UKCP09 climate change scenarios forecasting the likelihood of significantly increased low flow periods in our rivers in future, localised treatment and return of effluent to watercourses could become a cost-effective approach for maintaining resilient ecosystems. We would welcome the opportunity to work with Welsh Government and the Water Companies to explore the viability and potential benefits of localised treatment.

We would like to see long term (25 years) planning as the norm for all water issues, both resources and quality. This should go hand-in-hand with educational programmes to improve customer understanding of the true value, volumes and costs associated with water and wastewater provision and use.

12. How can we ensure that Water Companies plans link with wider natural resource management plans? Do you have views about how this should be implemented?

We believe that the Natural Resources Policy framework process should set the high-level direction for all sector plans, including water company plans. To make this happen we must ensure that the timetables for these planning cycles are appropriately staged to avoid some of the issues raised in our response to question 10 above.

It is also important to consider that water company plans are just one set of plans and alignment to the natural resource management policy framework must consider all other plans and strategies. At present many of the plans and strategies used for water management are on different timetables. For example, River Basin Management Plans under the Water Framework Directive work on a 6 year review process; the reporting and review cycle for marine plans under the Marine & Coastal Access Act is three years; and the anticipated review period for the proposed National Development Framework for Wales is five years. Water company plans and drought plans are on a 5 year review cycle. This issue needs further consideration and we welcome the opportunity to work with Welsh Government to make sure that the timetables work together as effectively and efficiently as possible.

We must also ensure that all parties are properly engaged as each plan is developed. This will ensure that the benefits of integrating these plans is maximised and doors are not closed on particular groups. For example a catchment scale natural resource plan seeking to control flooding by enhancing peat bogs should consider the impact this may have on water quality and hence affect a water company's future asset planning to ensure it can deliver

acceptable drinking water to its customers.

13. Do you agree with the proposals to encourage more efficient water use? Are there any further actions that can be taken?

Yes, water efficiency is a key driver which could enable Wales to establish new markets and attain a clear status of a country valuing its natural resources.

However, the strategy must recognise that water efficiency is not just an issue for the household. The vast majority of our water use is related to the food we eat, the products we use and the services we receive. The figures published by the World Wide Fund for Nature on total water needed to support all the goods and services we want, per person per day in the UK, are of the order of 4,600 litres, of which about 150 litres are used in homes[1]. Therefore, we believe that the Strategy should promote water efficiency in the widest sense, where they use public water supplies. For example, in the service industry, water savings can be made in services industries such as hair dressers, cafes, sports facilities and hotels.

Furthermore, some of the largest and economically beneficial savings gained by following an efficiency agenda are in the agricultural and industrial sectors. Here research has already identified that water efficient practices are easy to establish and have pay backs on investment often in months. Savings come from reduced water use, reduced effluent volumes and reduced energy bills as lower volumes of water mean less heating and pumping of water. NRW has already proven the approach of matching water and effluent volumes with production output. This Strategy should set this approach as a key driver of efficient, environmentally sensitive industry and agriculture for Wales.

By setting this agenda in Wales it could generate a new niche market for Welsh Industry with a home market enabling companies to develop skills which could then be marketed elsewhere. It may also attract companies into Wales due to the advantages that water efficiency could deliver to them both in reducing costs and from a marketing sense (see also our response to question 14 below).

We also feel that focus on water efficiency could be expanded to consider the links to energy. Up to 80% of household energy bills are a result of heating water. Water and energy efficiency measures combined have the potential in Wales to tackle wider poverty and cost of living issues.

We look forward to working with the Welsh Government to identify the most effective way for NRW to promote water efficiency through its regulatory and educational activities.

14. Do you agree with our approach to metering? What other factors do we need to consider?

Metering can provide a key mechanism in gaining a better appreciation of water use and water value. Volumetric usage is also the fairest way of charging for water, in principle.

We would like to note, however, that metering of industrial water use is common place, and that industry can still be wasteful. We must be mindful that metering may not bring about the expected result of lower water use. We would therefore advocate metering being accompanied by other initiatives to ensure all sectors value water and look to use it efficiently. In our experience resource availability can often drive efficient water use rather than volume-based charging. For example, Tata Steel in Port Talbot and the Georgia-Pacific paper mill near Bridgend have both used water efficient technology to reduce consumption because of resource availability issues and environmental drivers.

We would encourage the use of tariffs and smart metering as a way of providing more control and information to customers, both home owners, industrial and commercial to enable them to make choices on their water use.

15. Do you agree with this approach to managing leakage? Are there any ways we can ensure leakage is sustainably reduced?

We agree with the approach set out in the Strategy for managing leakage. We must not assume, however, that this is just a water company issue but one for the entire water use sector. We will continue to use our regulatory powers to promote efficient use of water, including leakage reduction. New techniques will emerge where the cost of leakage reduction becomes less than developing new water sources. The point at which this happens, however, may be held back if water remains a relatively cheap resource.

Similarly there is the issue of longer term social and political change which may see less regulation and hence create conditions where leakage is allowed to rise. Therefore, to ensure sustainable leakage levels Welsh Government should ensure there are sufficient incentives for those owning assets to encourage them to drive leakage down to economic levels. This will need to be balanced with appropriate regulation.

Water affordability and delivering excellent services to customers

16. How can we ensure best practice is shared across the water industry, to ensure that innovative solutions to address water poverty issues are shared with others?

We believe that sharing of best practice between water companies has been relatively effective, particularly through the industry's research organisation, UKWIR.

Perhaps a bigger issue in terms of driving innovation is ensuring that the water industry is provided with the necessary framework, incentives, and safeguards to trial innovative approaches in a relatively risk-free environment. We would encourage Welsh Government to work with Ofwat and other water industry regulators to consider how such a framework could be developed.

To enable innovation across the water industry we call for a more flexible and nimble regulatory system. We welcome the opportunity to work with Welsh Government on future legislative changes, including abstraction reform.

17. Have we identified the key issues and actions in relation to water affordability issues?

We believe the key issues on water affordability have been covered. However water bills can still be a major component of household and commercial businesses costs. Further work on tariffs and means of reducing costs is warranted (see 18 below).

We also believe that the present focus is wholly on water company customers. There are issues for those with private water supply and treatment infrastructure, particularly where supply and effluent disposal is inappropriate and will require significant investment to be improved. This may be a small number of properties but nonetheless should also warrant attention.

18. Are there any other approaches we could adopt to support the needs of both domestic and business customers?

Those business and households with lower incomes have additional pressures which prevent adoption of water saving approaches. To enable these groups to adopt water efficient approaches may require financial or other incentives to install equipment and change their behaviours. For example, we have assisted dairy farmers to reduce mains water use by collecting rainwater for stock watering. This has had the added benefit of reducing pollution risk as the rain previously would have added to slurry volumes and increased the risk of pollution.

Protecting and Improving Drinking Water Quality

19. Are there any additional drinking water quality matters that we should consider? Do you agree with our proposal to investigate the transfer of water supply pipes to the water companies?

We believe that a better understanding is required of water quality issues at private water supplies. These issues often relate to adjacent land management practices and attention should be given to ensuring appropriate practices in the zones around these sources of supply. The use of Source Protection Zones could provide an effective catchment-based measure to protect the water quality of private supplies.

We agree with the proposal to investigate the transfer of privately owned water supply pipes to water companies as an effective way of reducing leakage. We set out the multiple benefits of this approach in our response to the Welsh Government consultation on the 'future management of private water supply pipes':

'Water companies would have the power to find and fix a significant number of leaks and reduce total leakage levels.

- *The water savings could be significant. There could be a beneficial impact on the supply-demand balance especially in deficit zones and especially if combined with progressive smart metering programmes to identify leaks quickly. Reducing leakage will lead to: reduced abstraction and improved sustainability/security of supply; reduced energy use and carbon emissions;*
- *Improved customer relations;*
- *Customers being more likely to do their bit to save water.*
- *The review of the Sustainable Economic Level of Leakage (SELL) report*

recommends that a separate SELL calculation is undertaken for supply pipe leakage. This new power would enable water companies to develop a more robust SELL calculation for supply pipe leakage as companies would have the ability to manage these leaks in a more cost effective way as they would have more control on how to manage supply pipe leakage. This is likely to reduce leakage further.

- *Water companies would be able to better manage their leakage performance measures because the whole distribution system would be under their control and responsibility.*
- *Companies would be able to replace supply pipes when they replace mains. This would increase the benefits of those projects and enable a street by street approach which can improve cost-effectiveness.*
- *Serviceability of the network would be improved;*
- *Drinking water quality could be improved because old pipe-work would be replaced.*
- *It is imperative to have the appropriate funding mechanism in place to support the water companies and the additional assets they will be responsible for as a result of this new power.*
- *The low meter penetration of domestic properties in Wales (~30%) combined with the low frequency of meter readings per year would mean that the identification of leaks would still be difficult even with this new power.'*

20. Should we develop and consult on a long term Strategy to remove the health risks associated with the historic use of lead in plumbing?

Phosphate-based compounds are added to water supply networks to reduce the leaching of lead from lead plumbing. The phosphate then builds up at sewage treatment works and requires removal, which can be expensive. Additionally, phosphate availability is limited and so the cost of applying phosphate compounds may become expensive. The Welsh Government, with DCWW, should commission research into an alternative substance to phosphate for addressing lead leaching issues.

An alternative approach would be to replace all lead plumbing. Further work will be needed to explore the cost and feasibility of this approach. The adoption of private water supply pipes may offer a practical solution but the replacement of lead pipes could be prohibitively expensive.

A New Approach for Drainage

21. Do you agree with our priorities for drainage matters?

Due to the innovative work undertaken by DCWW and through the "National Surface Water Management and SuDS Group", Wales is at the vanguard of SuDS thinking and development. It also has the advantage that all the major participants are already aligned and in agreement on how to develop this approach. This is a major opportunity and advantage for Wales which should not be missed.

The document describes the uses and benefits of SuDS and Water Sensitive Urban Design very well, but we believe the proposals for action are too limited and provide too little detail to begin to reverse the problems these solutions seek to cure. A prompt and properly informed consultation on the implementation of Schedule 3 of the Flood and Water Management Act 2010 is long overdue, and would be welcomed.

There is a stated intent to review legislation and practices relating to drainage, focussing on surface water. Ideally this should include a proposal to better map the assets and/or check the accuracy of existing records. This would speed up problem solving (many related to bathing and shellfish water failures) and would also allow improved maps to be overlain on WFD failing water body maps.

It is important to remember that Sustainable Drainage is not restricted to our towns and cities and the approach needs to be applied in rural areas. Work like that already described at Pontbren (see question 3) and the Environment Agency report on Rural SuDS [2]shows how the principles can be applied everywhere in Wales and the final Strategy needs to reflect and recognise this.

As well as the solution described in the Pontbren example, we welcome the opportunity to work on an integrated solution to the problem of highways draining on to adjacent farmland through informal channels or ditches. Farmers claim that such arrangements add to the volume of surface water that becomes contaminated as it runs through or over feeding, grazing and ploughed areas. NRW want farmers to recognise their responsibilities to deal with all contaminated water arising from their activities, not just that arising at the farm-yard. Such highways drainage practices complicate this effort. Highways drainage needs to be directed to swales or otherwise formalised drainage systems through farmland.

We welcome the opportunity to work with the Welsh Government to explore the multiple benefits to the environment, economy and society that SuDS can provide.

22. This section has focused on built infrastructure, which mostly serves developed areas. Is there anything more we should consider for rural areas?

As outlined above we believe that the same approaches should be applied to both urban and rural areas as the principles are similar. We want all land management/managers to recognise their responsibility for all drainage arising from their land. Pontbren is an excellent example of effective ecosystem

[2] Environment Agency. Rural Sustainable Drainage Systems (2012).

approach to solving the problems associated with rural drainage.

23. Are there any other significant issues which you believe we should have included?

We would like to see a greater focus on retrofit of SuDS solutions such as those at Llanelli and Grangetown. Focusing our urban work on new development will only have marginal effects. Most of the properties we will occupy in 2050 have already been built, and we will need to retro-fit sustainable drainage to accommodate the impact of a changing climate and the gradual infilling and expansion of our homes and streets. The consequence of not doing this will be far more surface water flooding and disruption. The benefits go much further than just reducing flooding, as can be seen in with the Rainscape project in Llanelli where retrofitting SuDS will help improve water quality, create habitat and improve biodiversity, increase amenity value and improve the urban environment for the wellbeing of citizens. It has also provided improved outdoor space and learning opportunities for the pupils at Stebonheath school, connecting future citizens of Wales with natural resources and the services they provide.

Supporting Delivery

24. Do you agree with our approach to ensuring that regulation is focused on the Welsh Government's priorities? Do you have any other views or suggestions regarding the regulatory framework and whether it is fit for purpose?

We have liaised closely with the Welsh Government in their drafting of revised section 101A guidance and welcome improvements that have been proposed. We endorse the proposed transfer of the arbiter role in s101A disputes from NRW to PINS as set out in the Water Bill. This will allow NRW to act in an entirely strategic role in first time sewerage rather than having to maintain a quasi-judicial capacity.

Until recently all regulation of the water industry was undertaken at an England and Wales level. With the formation of NRW, one of the three water regulators (OFWAT, Drinking Water Inspectorate, NRW) now has a Wales focus. We believe the lessons learnt from the creation of NRW and any devolution of other utility scrutiny may warrant further investigation by Welsh Government.

25. Are there other actions that we should undertake to support innovation across the water sector as a whole?

Many of the solutions and innovations that we need will need to be developed by private industry, often not connected directly to the water sector. Alternative approaches will be required to ensure engagement with these groups to draw in these new approaches. Recently NRW has used a partnership approach with Welsh Government and Defra's Technology Strategy Board to find innovative solutions to environmental problems. Known as the Small Business Research Initiative, this focuses on the challenges faced by public bodies and looks to the private sector for potential solutions. We would welcome the opportunity to work with the Welsh Government and private industry in similar innovative solutions.

We cannot, however, expect all of the innovations that may help us to come from Wales. We will need to build capacity to identify where these innovations

are developing around the world and be in a position to recognise when they may be valuable to Wales. We also need to develop better and stronger links to academia so that they are attuned to the issues and challenges we face so that research can be focussed on appropriate solutions.

26. What more could the Welsh Government do to effectively support businesses in the water sector to grow and prosper?

By promoting best practice water use and effluent use, industry in Wales would be at the forefront of technology – reducing costs and potentially developing new processes. This would raise the profile of Welsh business and Wales as a green economy.

We need the water sector to play more into the innovation initiatives set up by Welsh Government. This would allow the water sector to better define its challenges in a way that other sectors, including academia, would recognise these challenges and be better placed to identify innovative solutions. Through such collaboration, commercial solutions to many of our key challenges could be developed. For example, NRW are working with Hydro Ltd. to develop small scale slurry treatment devices.

27. Are there other actions that the Welsh Government needs to undertake to support the delivery of this Strategy?

As stated previously we believe that this Strategy needs to be more closely linked with other plans, strategies and legislation. For example:

- Whilst there is reference to the Planning Bill there is a lack of connection between it, and the aspirations of this Strategy. The Natural Resource Policy framework (as proposed in the Environment Bill White Paper) will be key in supporting the delivery of this Strategy both in its own right and potentially through its links in to land-use planning policy, for example, the proposed National Development Framework. However, there is still a need for greater clarity from the Welsh Government on the status of Natural Resources Policy frameworks within the planning system e.g. in informing the development of national, regional and local spatial plans.
- Strong links are needed to the National Strategy for Flood and Coastal Erosion Risk Management in Wales. We would like to see reference to the Wales Coastal Flooding Review Phase 2 report.
- The ongoing delivery of the Water Framework Directive and river basin planning has helped broaden catchment management-based approaches to the whole land and water sector.

28. What information would you find useful to assess how the Welsh Government has progressed against key outcomes and actions in the Strategy?

We would like to see a clear statement or plan on how the key outcomes will be achieved, and by when. This would enable the ambition to be described, and progress towards it to be mapped. In setting out the outcomes and actions Welsh Government should build specific review periods so that it can assess progress and re-align its policy if targets are not being achieved. It also needs to be very clear on the current baseline position. It is also essential that the various partners who will need to help deliver the Strategy are signed up and

clear on their delivery role.
29: We have asked a number of specific questions. If you have any related issues which we have not specifically addressed, please use this space to report them:
Page 12 – 'The next set of River Basin Management plans, due to be published in 2015, will set out how we aim to reach 100% compliance with the Directive by 2021'. This statement needs to be clear that we will aim to achieve 100% subject to the exemptions we can apply. Page 12 – appears to ignore other protected areas (eutrophic, shellfish) in favour of Bathing Waters? Page 13, Para 1 – some of our larger reservoirs were built in the 2nd half of the 20th Century – not the early part of the century. Page 17, Box 1 – include Marine Strategy Framework Directive. Page 18, Para 5 – we do not believe that evaporation from rivers and reservoirs will have a significant impact on our water resources. Most of our reservoirs have a small surface area and are quite deep and cold. Evapotranspiration increases will be a bigger issue. Page 19, Para 1 – we believe that the big concern for sewerage discharges will be the reduced flows of receiving water courses and their higher temperatures (and hence lower Oxygen levels). Page 20, Para 1 – We do not believe that we now use 50% more water than 25 years ago, unless this figure included embedded water. Further clarification is needed on the source of these figures. Page 23-25 - It does not really draw out the 14 Catchment Management Units, their relationship to river basin management plans, and the 'Area based approach' under Environment Bill. Page 27, 28 - Valuing Water, how will this be done in the Marine Environment (e.g. fisheries, cooling water) and to what spatial scale – 1nm, 12nm, territorial limit? Page 31, first bullet point - How will the outcomes of this continual review be shared and implemented? A periodic review with reporting would be more likely to have impact than a continual review. Page 35 – The document states "NRW will continue to closely monitor nitrates in water bodies". Note that nitrate is not a WFD element and therefore is not monitored widely across Wales. Page 44 – It only implies alignment of AMP with river basin management plans but does not state it.

Responses to consultations are likely to be made public, on the internet or in a report. If you would prefer your response to remain anonymous, please tick here: ☐