Anglian Water is the water and water recycling provider for over 6 million customers in the east of England. Our operational area spans between the Humber and Thames estuaries, and includes around a fifth of the English coastline. The region is the driest in the UK and the lowest lying, with a full quarter of our area below sea level. This makes it particularly vulnerable to the impacts of climate change including heightened risks of both drought and flooding. Additionally, our region has the highest rate of housing growth outside of London and the South East.

Given our role as England's largest regional flood risk management authority, we take a keen interest in the development of national flood risk management policy to make sure it is commensurate with the rising risks from climate change. We welcome the opportunity to submit evidence to this important inquiry.

Our role in drainage and water management across the east of England

Anglian Water invests billions of pounds in vital infrastructure and supports thousands of jobs throughout the supply chain, underpinning the economic development of the entire region. However, without resilient water and drainage management infrastructure, housing growth, critical agriculture and food production industries, and the state of the natural environment will decline. These are complex challenges which Flood Risk Management Authorities and wider society all have a stake in overcoming. Collaboration with other stakeholders, businesses and local and national government is vital in order to coordinate, plan and deliver investments and other interventions to reduce the risk of flooding to communities.

Q1. Are the current national and local governance and coordination arrangements for flood and coastal risk management in England effective?

National and local governance and coordination arrangements

Governance and coordination arrangements at all levels are complex for managing flood risk, with a significant number of public, private and third sector organisations involved in a multitude of ways.

The introduction of the Flood and Water Management Act 2010 helped provide clarity following the 2007 floods and the subsequent Pitt Review. There are many successes arising from the legislation that have helped reduce flood risk for our communities and customers:

- The introduction of national and local flood risk management strategies
- Establishing Regional Flood and Coastal Committees
- The creation of Flood Risk Management Authorities (RMAs)
- The creation of Lead Local Flood Authorities (LLFAs)
- A requirement to undertake Section 19 Flood Investigations
- The duty to share information between RMAs.

Anglian Water is heavily involved in both national and local flood risk partnerships, including those engaged in developing the new National Flood and Coastal Erosion Risk Management Strategy, and supporting Regional Flood and Coastal Committees, regional partnership groups, and individual LLFAs.

However, there are several areas where more could be done, particularly relating to operational responses to surface water and groundwater flooding, and the funding of complex flood risk management schemes where a small number of dispersed properties are at risk. Despite a winter where fluvial flooding dominated the headlines, it is crucial to highlight that many properties are,

and have been, affected by other sources of flooding, particularly surface water and groundwater flooding.

We urge action in the following areas:

1. *Responding to local flooding*

   There is no single responsible body for responding to local flood risk events of any kind. This was raised by Major General Tim Cross in his Multi Agency Flood Plan Review in 2018. Cross recommended '**the responsibility for emergency planning/response for surface and groundwater flooding should be brought into line with main river and coastal flooding which is currently the responsibility of the EA'**.

   The current approach to responding to surface water and groundwater flooding is not consistent across the country. Where LLFAs do not have operational teams or resources, water companies are often required to respond instead. This can lead to confusion on the part of communities, which in turn can lead to frustration, a lack of trust, and can be an additional cost burden on organisations that are not funded to undertake this important role. The lack of a single responsible body complicates further an already complex issue.

2. *Funding local flood risk management schemes*

   The current funding framework encourages partnership funding – an approach which Anglian Water has embraced for several years. This is where beneficiaries contribute to projects led by others which can deliver significant benefits to our customers and both rural and urban communities. This is cost beneficial for our business and delivers demonstrable benefits for our customers.

   However, due to the way in which Flood and Coastal Erosion Risk Management (FCERM) Grant in Aid funding is currently allocated, schemes that manage surface water or groundwater flood risk often score poorly. This is because surface water and groundwater flooding often only affect a small number of isolated properties (whether in urban or rural communities), and this makes it difficult to justify a flood risk management scheme. This can leave a significant number of properties, usually dispersed over a large area, at continued risk of flooding. Considering that more properties in England are at risk of surface water flooding (3.8m) than fluvial flooding (2.4m), and that up to 300,000 are at risk of groundwater flooding, this is a significant issue for communities across our region. Defra has announced it is changing the way that FCERM GiA is allocated to schemes from April 2021, in part to address this issue. But it's not clear at this stage whether the changes will make a greater range of surface water management interventions viable.

<u>Drainage and Wastewater Management Plans</u>

Drainage and Wastewater Management Plans (DWMPs) are the new way for organisations to work together to improve drainage, wastewater and environmental water quality. DWMPs provide the basis for more collaborative and integrated long-term planning by a large range of organisations that have interests and/or responsibilities relating to drainage, flooding and protection of the environment, including water companies, the Environment Agency, LLFAs, Natural England and a large range of environmental NGOs and other interest groups.

By understanding the risks associated with climate change and housing growth, and planning long term solutions together, we are more likely to deliver robust and sustainable improvements that benefit the communities we serve. More information can be found here.

Whilst the development of DWMPs will be led by water companies, our partners have a significant role to play in their creation. The Environment Bill looks set to make the delivery of DWMPs mandatory for water companies, but this only places an obligation on the water industry for something we are already doing. This does not reflect the scale of the challenge posed by climate change, and that drainage is a shared responsibility. Many other organisations are also responsible for managing surface water and drainage assets, with co-ordinated action required by all parties.

Whilst we will lead the production of the DWMP for the east of England, it is fundamental that we do not do this in isolation. There are, for example, large numbers of drainage assets that are not under our ownership, but the management of which needs to be integrated into DWMPs. This has also been recognised by the National Infrastructure Commission in their recommendation that *'water companies and local authorities should work together to publish joint plans to manage surface water flood risk by 2022'*.

As a minimum, all Flood Risk Management Authorities should have a duty to co-operate in the production of DWMPs. This could be given statutory force by, for example, expanding the definition of 'flood risk management function' in section 4 of the Flood and Water Management Act 2010.

The Environment Bill should place a duty on all RMAs and Regional Flood and Coastal Committees to become statutory consultees in the development of DWMP.

Q2. What lessons can be learned from the recent floods about the way Government and local authorities respond to flooding events?

The media attention last winter focused on fluvial flooding, but there were many properties affected by surface water, groundwater and sewer flooding too. It is important that those communities affected by 'less visible' flooding are not forgotten as is typically the case.

One good example of this is the groundwater flooding experienced across greater Lincolnshire from November 2019 through to March and April 2020. The extent of the impact of high groundwater levels this winter has clearly highlighted the lack of experience, knowledge and governance associated with managing groundwater flood risk.

Under the Flood and Water Management Act 2010, responsibilities for managing groundwater flood risk passed from the Environment Agency to the relevant Lead Local Flood Authority. However, this winter highlighted the challenges associated with this role passing over to local authorities, who have no operational teams, no groundwater management experience and severely constrained resources.

This left an operational void (which Anglian Water filled in response to specific flood events) and a strategic management void, which was never properly filled as the LLFA lacked the experience and resources, and the Environment Agency focused on fluvial flooding events. In the long term, such an approach is not viable, and will lead to increasingly severe impacts on communities.

Despite a number of local examples where partner organisations worked well together, **the Environment Agency should resume both a strategic and operational role in the management of groundwater flood risk**. This would help to bridge the gap between flood risk management and

water quality issues that became apparent during the winter. It would also help to address our concerns that as soon as the groundwater returns below the surface (and out of sight), it is considered to be solely a water company problem.

Q3. Given the challenge posed by climate change, what should be the Government's aims and priorities in national flood risk policy, and what level of investment will be required in future to achieve this?

The Anglian Water region is particularly susceptible to climate change impacts as it is largely flat and low-lying, has a long and in places fast eroding coastline, and experiences low on average but intense periods of rainfall. Rising temperatures will make rainfall patterns even more extreme, further increasing the likelihood of both drought and flooding in any given year. Rising sea levels will compound the effects of changing rainfall patterns to increase the risk of flooding in coastal areas and in estuaries, and increase the rate of coastal change.

These challenges would be significant even with a static population, but our region is one of the fastest growing outside London and the South East. We are expecting 200,000 new homes to be built by 2025, before factoring in the proposed Oxford-Cambridge Arc, and population growth of up to a million people is likely by 2040. This growth is most likely to take place in areas where water is already scarce, the risk of flooding is greatest, and the environment under most pressure. Therefore, there is an urgent and acute need to adapt to new climate realities.

We have been acting to manage our key risks from climate change since the 1990s. Despite our long-term efforts to embed climate change into everything we do, we recognise that there is much more that needs to be done to make the East of England resilient to the impacts of drought and flooding. The only way to do this successfully is by working together with others. The government should continue to support an approach build on partnership working and partnership funding to manage flood and coastal change risks.

<u>Partnership funding</u>
Our partnership funding programme was established in 2015, with £8.5m of funding made available as contributions toward flood and coastal schemes being delivered by local authorities, Internal Drainage Boards and the Environment Agency in our region that also provide resilience benefits to our assets. This approach also means that we can do more for less, providing better value to our customers and communities than if we acted alone.

Between April 2015 and March 2020, we contributed to 40 separate schemes taken forward by 22 different Risk Management Authorities. This delivered a range of benefits include:

- reduced flood risk from a range of sources, including surface water, sewers, rivers, tidal flooding and coastal erosion
- reduced interruptions and loss of service to customers
- reduced pollution incidents
- improvements in infrastructure resilience
- improving places for people to live
- significant avoided costs to customers.

In the example below, Anglian Water contributed toward a partnership scheme that helps to improve surface water management for a hospital in Basildon, Essex, with knock-on benefits for the wider community.

Basildon and Thurrock University Hospital, Basildon, Essex

The SPONGE 2020 project implemented a number of innovative, place-based climate adaptation solutions in collaboration with local stakeholders, helping to improve densely-built areas by implementing innovative adaptation solutions.

Basildon and Thurrock University Hospital, in South Essex, is in the top 10 areas which are at risk of surface water flooding in the country. SPONGE 2020, which is funded by the EU (an Interreg project), Essex County Council and an £80,000 contribution from Anglian Water, will increase resilience against surface water flooding, whilst simultaneously adapting the communal space for staff, patients and visitors.

The courtyards and the adjacent washland area (owned by Anglian Water) at the Cardiothoracic Centre have been renovated with a number of sustainable drainage features.

The courtyards now include permeable paving and a number of planters that either infiltrate or attenuate rainfall, whilst the washland area has been completely redesigned and re-landscaped to temporarily store an additional 2,800m3 of water during extreme events. Sustainable drainage features like these aim to manage surface water in a responsible way, by mirroring natural drainage processes. This in turn helps to make existing infrastructure more resilient to extreme weather events.

The courtyard features reduce impermeable area by over 50% and reduce roof runoff by over 60%, whilst the work to the washland has resulted in a 12% reduction in peak flows downstream, and approximately £4million of damages avoided to downstream property and sewerage infrastructure. Planting in the washland basin helps to trap and filter pollutants from urban sources (such as car parks and buildings), improve the downstream water quality. Additionally, the new planting scheme provides habitats to support local biodiversity and enhance the amenity value for visitors.

The challenges of funding flood risk management

The example outlined above demonstrates the benefits of partnership working. But such an approach is not always easy to deliver due to the challenges of funding surface water management schemes. As mentioned earlier, the way in which FCERM Grant in Aid funding is currently allocated means that schemes designed to manage surface water flood risk often score poorly. This is partly due to the relatively small number of isolated properties (whether in urban or rural communities) that are affected by individual surface water flood events. This in turn makes it difficult to justify a flood risk management scheme.

Recent changes to the partnership funding rules may help to address these challenges, but it is too early to tell when they will make any significant difference. And we are yet to see any evidence from the Environment Agency outlining the differences these changes would make on the viability of surface water schemes. It will be important for government to continually review the benefit of these changes, and whether this makes any material improvement in the number of properties at risk of surface water flooding.

To assist with the above, **partnership funding rules should evolve to better recognise the role that water company investment can have in reducing local flood risk**. Bringing together Grant in Aid, local levy and water company investment has the potential to deliver integrated sewerage, highway drainage surface water and groundwater management schemes.

Q4. How can communities most effectively be involved, and supported, in the policies and decisions that affect them?

Managing flood risk in the built environment

Close engagement with communities is essential to successful flood risk management. This is evidenced through the work we have done locally to better manage surface water and sewer flood risk in Great Yarmouth, Norwich, Newmarket and Canvey Island.

In these locations, we have worked closely with communities to better understand their requirements at a household level, and then undertake surface water management retrofit schemes that will help to protect their wider communities. This work forms part of a multi-year strategy focused on reducing the volume of surface water entering our sewerage catchments which can lead to flooding and pollution. We call this programme Make Rain Happy.

The Make Rain Happy campaign will form the bedrock of our work with customers and communities over the next five years. If successfully delivered, it will go beyond educating customers and raising awareness of sustainable drainage, and onto inspiring people to want to get involved and take action on flood risk themselves.

A key aspect of this approach is increased local engagement with our customers, their communities and other partners to help Anglian Water develop plans which enhance the communities we work with. An assessment of our customers' response to this approach found that they are excited by and engaged with it:

- "*Finding innovative ways to collect and store water will be critical and offers exciting possibilities for creative thinking!"*

- *"I have nothing but praise for the ambition to try and achieve all of this. Great news for the environment and local communities in every way"*

Alongside enhancing our resilience to the effects of climate change, growth and urban creep, this local customer-led approach to surface water management also delivers substantial environmental benefit in improving natural capital and reducing operational and embedded carbon emissions.

Q5. With increasing focus on natural flood management measures, how should future agricultural and environmental policies be focussed and integrated with the Government's wider approach to flood risk?

We wholeheartedly support the principle of using public money for public goods, which is at the core of the Agriculture Bill and the new Environmental Land Management scheme being introduced as Common Agricultural Policy direct payments are withdrawn.

Improved land management can bring multiple benefits in terms of flood risk, through reconnecting rivers with their natural flood plains, the creation of woody dams and other natural flood management measures, increased tree cover in upper catchments, and soil management and peatland restoration. These measures also bring benefits for water resources in terms of increased storage of water in the landscape, and improved water quality through mitigation of pesticide and fertiliser use.

We are currently working with the Cambridge Institute of Sustainability Leadership, Northamptonshire County Council, Nestle and others, to explore a holistic approach to river catchments and natural flood management across Northamptonshire. **Taking a catchment-based approach (CaBA) is essential and should be reinforced through national policy in order to help improve the management and flow of water through the natural environment.** CaBA considers flood risk and water quality, alongside land management, animal husbandry and environmental practices. Catchments are an ideal size and geography to consider how best to bring together public and private funding to deliver a range of public goods.

Q6. How can housing and other development be made more resilient to flooding, and what role can be played by measures such as insurance, sustainable drainage and planning policy?

New development plays a key role in managing flood risk, both for greenfield and brownfield development sites. In order to deliver 300,000 new homes a year across England, well planned and considered flood risk management measures will be required to make these new communities resilient to climate change. Local authorities, developers and utilities all have key roles to play in enabling sustainable housing growth in areas susceptible to climate change.

For example, plans for a new Garden Town community of circa 12,000 homes at Wisbech in Cambridgeshire offer the opportunity to test a range of innovative technologies, as well as modern resistance and resilience measures that are transferable to other areas across the rest of England. However, this must be realised in the context of the flood risk challenges faced by the town, which are significant and varied, including:

- Rising sea levels.
- Less predictable patterns of rainfall, with higher risks of both drought and extreme high intensity downpours.
- Higher river flows in winter and lower river flows in summer.
- Rising groundwater levels.

These challenges create a range of risks that must be addressed to create a future-proofed, climate resilient community. One such solution could be to take an integrated water management approach to the region that combines new multi-sector storage reservoirs and open water channels with downstream flood barrages. Doing so would not only deliver flood risk management benefits, but also improved water security of supply, nature restoration, and enhanced amenity and local tourism. A major shift in the flood risk profile for the area would unlock more cost-effective investment in local transport infrastructure, and sustainable housing development in Wisbech and other Fenland towns. We are championing this approach as an integrated climate adaptation strategy for the Fens.

Any new development must also consider how it will manage surface water runoff. Returning water to the environment, either directly to a watercourse or through infiltration to the ground, will in most cases be preferable to directing surface water runoff to public sewers, which requires unnecessary treatment and the associated financial and environment costs.

There are a number of ways to do this, including the provision of sustainable drainage systems (SuDS):

<u>Adoption of SuDS</u>
Although there are many practical benefits to SuDS, there remain a number of challenges faced in their widespread implementation. Whilst we no longer believe commencing Schedule 3 of the Flood and Water Management Act 2010 is the right way forward, there remains a policy void in the specification, delivery and adoption of multi-functional SuDS. There also remains significant

ambiguity within the planning system that is unhelpful for local authorities, water companies and developers. This in turn reduces the incentive to include SuDS in new developments, and the ability of less progressive developers to avoid doing so. We believe it is in the interests of developers and residents (new and existing) if this situation is addressed.

An alternative approach to Schedule 3 has been developed by the water industry alongside other stakeholders. New rules introduced from 1st April 2020 mean that all water companies in England are obliged, if requested, to adopt and maintain SuDS features in new development as long as they meet certain design criteria.

These rules, which are part of the Sewerage Sector Guidance documentation approved by Ofwat under its Code for Adoption Agreements, can be found in the Design and Construction Guidance (DCG). These will allow water companies in England to adopt a wider range of sewer types, including those with sustainable elements, than they have done to date. This will include some, but not all, SuDS features.

This approach to SuDS adoption, as championed by Anglian Water since 2011, will provide the certainty that planning authorities, water companies and developers need to specify and adopt multi-functional SuDS features.

However, **the weak, non-statutory national technical standards for SuDS remains a significant loophole in the system**, that not only allow but legitimise the delivery of poor quality, partial SuDS systems if they are included in new housing development at all. We welcome the recent review of the national SuDS standards that has been commissioned. **We urge the government to adopt a new, mandatory SuDS national standard that is aligned with the SuDS specification set within the water industry's Design and Construction Guidance.**

Automatic right to connect

Water and sewerage companies continue to have a legal obligation to connect new developments to the sewerage system. This obligation includes both the connection of foul and surface water to the public sewer.

Schedule 3 of the Flood and Water Management Act was set to remove the automatic right to connect surface water, which was a key recommendation of the Pitt Review, and an aspect of Schedule 3 we continue to fully support. In 2016, we supported an amendment to the Housing and Planning Bill, to remove the automatic right to connect new surface water drains to public sewers when it was clear that Schedule 3 would not be commenced.

Removing the automatic right to connect surface water would enable sewage companies to better operate and maintain the public sewerage system and manage the risk of sewer flooding. It would also incentivise developers to consider comprehensive SuDS schemes in place of traditional surface water drainage systems that we could then adopt and maintain under the new DCG.

In light of recent developments, **we therefore consider that the most appropriate way forward would be to make the right to connect new development to surface water and combined sewers conditional on the new water industry DCG being followed by developers**. The new DCG promotes the use of multi-functional SuDS, and, if followed by developers, the SuDS must be adopted and maintained by the local water company if requested. This would fulfil, in a different way, the principles of Schedule 3 – improved surface water management and use of multi-functional SuDS in new development.

National Planning Policy Framework (NPPF)
Local planning authorities and developers should seek flood risk management opportunities (eg safeguarding land), and to reduce the causes and impacts of flooding (eg through the use of sustainable drainage systems in developments).

The NPPF focuses on avoiding areas at high risk of flooding and encouraging development to mitigate any impacts through the use of SuDS. **Local Authorities should be encouraged to create proactive plans for settlements that guide development over the long term to maximise integrated water management.** Such an approach could draw on tested concepts in Europe, such as the water plan in Antwerp. The resulting strategy would provide a framework for future development to adapt to a changing climate while creating attractive places to live.