Pennon

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Planning Policy
East Devon District Council
Blackdown House
Border Road
Honiton
EX14 1EJ

Dear Sir/Madam,

Pennon Group is writing on behalf of South West Water Limited [SWW], in response to the Regulation 18 Draft Local Plan Consultation for East Devon District Council [EDDC].

These representations have been prepared to provide comment from our perspective as Statutory Water & Sewerage Undertaker covering the EDDC area. As such, the representations set out below comment only on matters relating to: the provision of water services and sewerage services; how development impacts on these public services; and policy suggestions for mitigation of the impact on – and highlighting opportunities pertaining to – these services. The main goals of these representation can be broken down into five parts:

1) Encouraging sustainable use of water resources;
2) Designing for extreme weather resilience;
3) Enhancing water & environmental quality;
4) Timing of available infrastructure capacity; and
5) Promotion of flood protection measures.

In order to achieve these goals, below sets out our comments on the current draft and proposals to take forwards in the Regulation 19 draft.

General Comments:

SWW wholeheartedly agrees with EDDC in highlighting the issues of climate change and flooding within the Key Facts of the Draft Local Plan [DLP] (p.10). Flooding is, and will continue to be, one of the central impacts of climate change. Currently at least 'one in six people in England' are at risk of flooding from watercourses 'with many more at risk from surface water flooding' (Environment Agency [EA], FCERM Strategy Roadmap to 2026). Flooding produces multiple compound consequences, including: soil erosion, flooding watercourses with organic matter and pollutants, sewerage overload and property damage, among others. If current climate change trends continue, extreme weather events – like flooding and drought – will become a more common occurrence. As

such, it is crucial to be aware of these impacts and how we can minimise and mitigate against these types of environmental extremes.

Although EDDC focuses on the Carbon emission and neutrality angle of tackling the declared climate emergency throughout the DLP, we believe further work is needed to cover wider impacts of climate change, including upon water resources. Currently, the average water use of an adult in the UK is approximately 142 litres of water per day (Water UK, Vast majority of Brits have no idea how much water they use each day, 31 August 2020). The significant impact climate change has on available water resources can be seen around the globe; if we wish to avoid further climatic pressure on our water network it is imperative to encourage sustainable water conservation at both householder and development scales.

A more in-depth discussion on sustainable water use can be found below.

Chapter 2: Vision and Objectives

The key objectives relevant for our representations, set out in table I (p.12), are:

Objective 2) To ensure all new development moves the District towards delivering net-zero carbon emissions by 2040 and that we adapt to the impacts of climate change;

Objective 8) To protect and enhance our outstanding natural environment and support an increase in biodiversity; and

Objective 10) To secure infrastructure needs at an appropriate time to support new development.

These objectives will be referred to as we comment on the relevant goals and associated policies. However, in general terms we view these objectives as encompassed into two groups. Objectives 2 & 8 can be seen as one group as they are both components of achieving our goals for avoiding and mitigating impacts of climate change, part of which can be achieved through the implementation and enhancement of green infrastructure designs. The benefits of implementing best practices within green infrastructure designs and nature based solutions will be discussed further below: however, these include evaporation control, soil stability improvements, increased biodiversity, urban cooling and heat control through adequate shading, among others.

Objective 10 is an important aim to ensure the avoidance, as much as practicable, of delays for development approval stemming from infrastructure-capacity timing. A chapter on this objective and relevant policy is discussed below.

Water Usage Reduction

Relevant Policies: Strategic Policy 8, 27 & 28.

Water usage reduction will be a crucial issue as climate change progresses and extreme weather events become a more common occurrence. Our general comment across the Local Plan is that although the Plan has a significant concentration on sustainability and combatting the impacts of climate change, which we applaud, there is an over-reliance on the impacts of carbon emissions,

without balancing out other factors in combating the impacts of climate change. Becoming carbon neutral is essential to minimising and mitigating against the greenhouse triggers for climate change – this is not up for dispute – however, we would like to highlight that other variables, such as sustainable resource-usage (including energy and, from our perspective in particular, water), are also crucial; and will become even more so over the coming decades.

Residential usage can be addressed through use of water-efficient technologies such as efficient toilets, shower heads, tap aerators, etc. Garden usage can be addressed through water butts and harvesting water from roof gutters, or other rainwater-capturing. Both of these potential solutions are easily retrofittable and do not require redesigning at the site scale. However, both elements could contribute significantly to the sustainable reduction of water usage, while not affecting the amenity of individual residents. Collectively, these technologies could have a substantial impact on reducing the annual water usage across a major development site and, furthermore, across the District if propagated as a requirement via policy.

Strategic Policy 8: Development of a second new town east of Exeter (pp. 46-48)

Policy 8.1. states that by 2040 approximately 2,500 new homes will be built along with a further 5,500 additional new homes past this timeline. Current research states that on average in the UK, we use approximately 142 litres of water per day per person (Water UK). This equates to approximately 500 litres a day for a family of four. Following the 'Market housing mix' set out in Policy 43 (assuming the first bed equals 2 people, and any additional bedroom equals 1 person) across the proposed 2,500 houses in the original 2040 timeline this equates to approximately 1,380,950 litres per day (504 Megalitres per year).

Bed per dwelling	People per dwelling	Housing Mix (Policy 43)	Total Dwellings	Total People	Total Litres/Day
1	2	5%	125	250	35,500
2	3	19%	475	1425	202,350
3	4	53%	1325	5300	752,600
4+ (assumed 4)	5	22%	550	2750	390,500
Totals (l/day)		99%	2475	9725	1,380,950
Total Mls/Year (1 Megalitre = 1,000,000 litres)					504.04675

(Figure 1: Strategic Policy 8: New Town projected water usage)

Strategic Policy 27: Climate Emergency (p.131)

The wording of this Policy is limited, as elements of the climate emergency are also dealt with in separate strategic policies across chapter 7. Policy 27 stipulates requirements for development to contribute to achieving carbon-neutrality; however, it does not fully take into account additional

variables which will be crucial to combating the impacts of climate change. Along with our comments below on strategic policy 28, we believe it would be beneficial to include wording within this policy to require water usage calculations to demonstrate practical long-term reductions. This requirement would collectively reduce the impact on SWW's reservoirs, and upon watercourses and groundwater resources which are critical resources for daily life. With the effects of climate change continuing on its current trend, the monitoring and regulation of water usage will be crucial to ensure that extreme weather events like flooding and drought can be mitigated prior to impacts reaching critical levels.

SWW will continue to implement progressive technologies and design into existing and new infrastructure, to maximise opportunities to mitigate impacts at those sources; however, maximising opportunities at development and consumer levels will also be crucial for mitigating impacts across the whole system.

Strategic Policy 28: Net-Zero Carbon Development (pp. 132-133)

It is understood that this Policy relates to net-zero carbon development; however, the final paragraph of the Policy states a requirement for major development to calculate the whole lifecycle carbon emissions. In order to demonstrate how developers intend to reduce water usage of their developments post-construction, we believe it would be beneficial to use a similar policy requirement for an assessment of annual projected water usage - to be submitted with any major development to demonstrate the water-reduction designs and technology to be implemented into the fabric of that development. However, we would suggest that such an assessment would not take into account, or at least not require reliance upon, elements such as efficient dishwashers or washing machines; as these have a likelihood to be replaced by less-efficient alternatives within the lifetime of the development.

Proposed revisions:

Policy 8: Development of a second new town east of Exeter

Even with industrial development excluded from the calculations shown in Figure 1, it is evident that such development will have a significant impact on water resources and infrastructure. As such, we believe that policy should dictate that along with the proposed 'highest standards in terms of energy and resource efficiency' generically referring to resource efficiency, it should explicitly state the requirement for water usage minimisation. Thus, according with Objective 2 of the draft Local Plan.

Policy 27: Climate Emergency

The inclusion of wording requiring developers to demonstrate how they intend to minimise water consumption upon full occupancy, similar to:

'27. d. calculating the water usage projected annually upon full occupancy of the development, and how technologies and design will be implemented to reduce water consumption.'

Reason: to require water consumption to be a monitored variable in combating climate change. Addressing the cumulative impacts on both the natural and artificial water cycle which is central to critical public infrastructure, and ensuring development maximises opportunities for minimising impacts on said infrastructure. According with objectives 2 & 8 of the proposed Local Plan.

SuDS, Water Quality and Environmental Enhancement:

Relevant Policies: Allocation Policies (8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 and 26) and 27, 35, 53, 74, 82, 85, 86, 87, 89, 91 & 92)

General On-site Water Control & Enhancement

The use of SuDS when designing a development is crucial to the effective and sustainable disposal of surface water. There is an existing hierarchy which dictates how these systems should dispose of or discharge surface water, this hierarchy being:

1. Into the ground (infiltration);
2. To a surface water body;
3. To a surface water sewer, highway drain, or another drainage system;
4. To a combined sewer.

This hierarchy is well established; however, we wish to stress the reasons why infiltration should always be the first solution. By saturating the soil with surface waters, the soil becomes resilient to extreme weather events. Dry soil is inefficient at absorbing water, whereas soils with moderate moisture levels can absorb water more easily. With the impacts of climate change making flood and drought events more common, this creates a damaging cycle as:

- Drought dries up the soil, reducing its effectiveness to re-absorb water.
- As the soil cannot re-absorb water when it is available, there is an increase is surface water run-off and thus increasing soil erosion.
- Surface run-off which is not attenuated or rendered the subject of 'slow-the-flow schemes' enters watercourses and storm-overflow sewers, with consequent risks including eventually making its way into the seas, carrying silt and pollutants.

The result of this cycle is further damaging drought and worsening ability of the land to retain surface water. Additionally, the further downstream impacts stemming from surface water run-off can lead to fresh water mixing with the salt waters of the sea; thus, causing further impacts on the ecological systems of these water habitats, which can be significant.

Fully utilising the combination of green infrastructure, Working with Natural Processes [WWNP] solutions and SuDS design on major development sites can be a powerful tool for surface water disposal, ecological enhancement, and long-term protection of the site and surrounding areas against extreme environmental events (EA, Working with Natural Processes to Reduce Flood Risk). Promoting the retention and slow dispersal of surface waters through conjunction of attenuation, leaky barriers (where appropriate) and green infrastructure is an effective way of minimising impacts of both drought and flood events, while maximising opportunities for ecological, biodiversity and wellbeing enhancement.

As such, the aim of our comments is to promote the retention of surface waters on the land - and kept separate to the foul sewerage network - to allow sufficient time for water to re-absorb into the soil and soil sub-strata to improve the resilience of the land against such extreme weather events (EA, FCERM Strategy Roadmap to 2026). It is critical to adhere to the hierarchy of surface water disposal, and for developers to demonstrate they have exhausted all opportunities to handle

surface water on-site prior to contemplating the ejection of surface waters to either watercourses or the public sewerage network.

The allocation policies named above are relevant for requiring all opportunities to be utilised for infiltrating surface waters on-site, preferably through a combination of both sustainable drainage and ecology to maximise benefit from both nature based and engineered solutions. Particularly for sites that could produce run-off into either the River Exe and River Otter catchment areas, as these are important water resources for SWW and the district.

District-wide policies – such as that proposed above for Policy 27 – could provide an appropriate avenue for mandating the full utilisation of opportunities, on a site-by-site basis, for slow dispersal of surface waters, and for requiring a holistic design which combines both SuDS with green infrastructure. Policy suggestions that provide District coverage for the aims explained above are provided below; however, not all relevant policy has suggested revisions. Policy suggestions have been proposed to avoid repetition between formal individual policies.

Policy 85: Protection of irreplaceable habitats and important features

SWW support the spirit and wording of Policy 85; however, would like to see water habitats included within the protections proposed. One of note that SWW would promote for specific inclusion within this policy, both for protection and highlight as a suitable option for biodiversity net-gain offsetting, is seagrass. The National Marine Aquarium, Natural England and Ocean Conservation Trust are conducting research into the cultivation of seagrass with the aim to remediate and enhance five Special Areas of Conservation [SAC] through the Life Remedies Project in Plymouth. Seagrass is considered a critically endangered habitat. By promoting and propagating seagrass colonies, these habitats can continue to provide suitable habitats for rare seahorses, stalked jellyfish and rare seaweeds, among others; as well as being a substantial carbon sink (Ocean Conservation Trust, LIFE Recreation ReMEDIES Project).

Through the efforts of the Upstream Thinking Partnership, of which SWW is a major partner, and the continuing investment to improve waste water infrastructure, there are now significant stocks of seagrass in the Exe estuary. Seagrass is a significant component of sea habitats, while also oxygenating waters and acting as a substantial carbon sink. By instilling protections for these habitats, through the promotion of water quality and environmental enhancements discussed above, the improvement of seagrass populations would provide substantial environmental benefits.

Proposed Revisions:

Policy 35: Flooding

1) 'Where development boundaries lay adjacent to watercourses, must demonstrate design (including WWNP solutions) to improve soil stability, water quality and nutrient neutrality.'

Reason: reduce possibility of flood events eroding soils and carrying organic matter into watercourses and ocean discharges through storm-overflows. Policy is supported by objective 8 of the DLP.

2) 'All opportunities for the disposal of surface waters on-site must be exhausted prior to following the remaining surface water disposal hierarchy. When designing suitable SuDS, thought must be given to how the retained and proposed green infrastructure will function in combination with

WWNP solutions to maximise opportunities to slow the flow, attenuation, soil stability and ecological enhancement'

Reason: maximise opportunities for adding extreme weather event resilience through suitable design, combining SuDS and green infrastructure. For the collective resilience of the land and public sewerage network against extreme weather events, enhancing ecological diversity and value, reducing the risk of soil erosion, improve wellbeing, among others. Policy is supported by objectives 2 and 8 of the DLP.

Policy 91: Ecological enhancement and incorporation of design features to maximize the biodiversity value of proposals

The second policy suggested for Policy 35 could also apply to this policy. However, we believe a policy combining the SuDS, green infrastructure and WWNP is most suited within Policy 35 as it is broad enough to encompass both aspects of drainage and ecology.

Timing of Infrastructure Capacity:

Relevant Policy: Objective 10 and Allocation Policies (8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 and 26).

Objective 10 of the Local Plan, as set out in table I (p.12), states the aim to "secure infrastructure needs at an appropriate time to support new development". As significant public infrastructure, the connection for drinkable water and capacity of the sewerage system is central to the timely delivery of present and future development. However, in the current draft of the Local Plan very little is said about these crucial services.

Communication

SWW wholeheartedly agrees with objective 10 of the draft Local Plan. To assist in this aim SWW would request the encouragement of early communication between developers and SWW (or New Appointments and Variations [NAV]/Self Lay Providers [SLP]), prior to either full or reserved matters applications, and that this is solidified in policy. Ensuring that early communication is established will enable SWW, as Statutory Undertaker – or the NAV for foul or SLP for potable water - either to confirm capacity or have time to plan in works for increasing capacity. Thus, reducing potential delays in development which otherwise would be managed through a Grampian planning condition. Though early communication will never entirely remove the use of such conditions, allowing the water and sewerage service provider to have detailed indications of upcoming required capacity will reduce existing delays in the development and delivery of those approved proposals.

Early communication is essential for development of any scale, though for different reasons. Due to the scale of major development, it is crucial that early engagement with water and sewerage providers is sought to ensure the broad network of pipes, pumping stations, water storage including reservoirs – and for significant developments, like that proposed for the new town east of Exeter (noted in policy 8), the capacity of treatment works – to be at a standard to accept the substantial increase in demand.

For smaller scale development, it is a similar story but for local assets. Drainage strategies are calculated to provide the required infrastructure to provide for the proposed requirement of that particular development. If further development is proposed that connects into that original network, the size of the original pipes, capacity of pumping stations and other local infrastructure may not have been designed for this additional demand. As discussed above, the average water use of an adult in the UK is approximately 142 litres per day. Development that proposes multiple occupants and/or dwellings can add up to a sizeable impact on a drainage system that was not originally designed to accommodate this additional demand. Such impact amplifies further when taking into account multiple small-scale developments culminating in significant impact on the wider network. Without early communications from small-scale developers, the collective effect of multiple small-scale developments can have the impact of major development. If this additional demand is not communicated to the water/sewerage provider early in the process, delays are inevitable. As such, wording similar to that set out below is requested to be applied to development generally to avoid delays, as much as practicable.

SWW Innovations/Improvements

SWW continue to be committed to the improvement of the existing infrastructure and innovating as industry leaders to provide the most possible benefit for the environment and our customers. As part of this goal, SWW are progressing improvements to the efficiency of current systems; from pumps to innovative processes, such as our Mayflower Water Treatment Works [WTW] that is the first of its kind to utilise ceramic membrane filters in the UK. Continuing to innovate with new technologies in conjunction with SWW's net-zero strategy will be crucial to combating impacts of climate change on essential water infrastructure.

Along with elements set out above that target how development can implement solutions to reduce strain and improve resilience against climate change, SWW are committed to leading within the water industry by implementing improvements throughout existing networks and infrastructure. In order to do so, SWW propose that policy be included within chapter 7 (Tackling the climate emergency and responding to climate change) that would enable providers of essential public infrastructure for projects that fall below Nationally Significant Infrastructure Project [NSIP] thresholds. Such a policy would accord with objectives 2, 8 and 10 of the DLP and crucially assist in the timely delivery of essential public infrastructure, that acts to combat impacts of climate change, provide environmental and/or society benefits. Policy wording is proposed below.

Proposed Revisions:

Communications:

'Evidence of communication with SWW or relevant provider must be submitted to confirm available capacity as part of a submission of any full or reserved matters application.'

Reason: to ensure the timely planning and delivery of essential public service infrastructure. Policy would accord with objective 10 of the DLP.

SWW Innovations/Improvements

'Locally Significant Infrastructure Projects will be supported where projects demonstrably contribute to combating effects of climate change, provide improvement of public health or environmental and/or social outcomes. Innovative solutions will be supported for development that can be reasonably evidenced to provide benefit.'

Reason: to enable policy support for essential infrastructure projects that fall below NSIP thresholds while also providing tangible benefit to the environment and local communities. Such policy would accord with objectives 2, 8 and 10 set out within the DLP.

Promotion of Flood Protective Measures:

As stated above, climate change is following a trend that leads to a drier future compounded by more frequent flood events. Through the implementation of solutions stated above for the improved resilience to such extreme weather events can be achieved, these solutions alone will not fully remove flooding as a risk to properties, watercourses and development. As such, measures mitigating against flood events for properties and development within flood risk areas should be promoted. As building regulations have yet to be strengthened for this objective, SWW believe policy would be an appropriate solution until building regulations can be suitably updated to mandate such protections and mitigations.

At present, suitable retrofittable flood mitigations include solutions like:

- Sealable airbricks;
- One-way valves for dwelling sewage outlets; and
- Flood barriers and small pumps.

Additional methods that can only be implemented through site-wide designs, include:

- Flood storage (to augment flow to combat droughts, reducing impact of flood events);
- Permeable surfacing;
- Green infrastructure & WWNP; and
- Other suitable site-wide solutions.

SWW recommend the requirement, by policy, for solutions, including but not limited to those noted above, to be implemented within development proposed primarily within areas of flood risk. However, areas that are not within flood risk areas should still include site-wide solutions like those noted above; as these are also crucial for the management of surface waters and drought resilience that will affect all areas of the district as climate change continues to take effect. See section on *SuDS, Water Quality and Environmental Enhancement* for further discussion on recommended site-wide solutions. Such a policy would be supported by objectives 2 and 8 of the DLP.

Conclusion:

The goals of these representations accord fully with the objectives laid out within this DLP. To sustainably manage our water resources, it is essential to require development – through retrofittable elements and holistic design – to utilise suitable methods for reducing everyday water usage to reduce stress on the existing and future water networks caused by ongoing climate change. Using green infrastructure and WWNP can harness the natural environment for combating climate change – through benefits such as evaporation control, urban cooling, soil stability, among others – as well as the benefits to the natural environment and human wellbeing. The implementation of SuDS which maximise time spent for surface waters to attenuate or release

more slowly back into the soil provides opportunity to recharge soil moisture, which is crucial when recovering from drought events, likely to become more frequent if current climate trends continue. Without cohesive SuDS designs which include measures for combating drought and flood events, a damaging cycle can establish itself which could lead to increasing yearly impacts on the local environments.

Through implementing the comments laid out above, we believe both short and long term benefits can be achieved. Short term, on a site-by-site basis, through sustainable water usage, extreme weather resilience and improved ecological value of on-site green infrastructure. Whereas long term benefits will be felt across the District as these principles are applied across major developments spanning the local plan area.

Additionally, by improving early communications with (prospective) developers, we hope to reduce delays to approved development. It is accepted that not all delays will be avoidable, and the use of Grampian conditions may still be required; however, implementing a policy requirement for proof of communication with SWW, or relevant provider, it is sought to minimise instances where these conditions are required.

We thank EDDC for the opportunity to provide representations for the DLP, and we hope the suggestions provided above assist in further developing the DLP and the spirit of the proposed policies be implemented into the following Regulation 19 draft.

Yours sincerely,

[redacted]

Laurence Munslow
Town & Country Planning Advisor
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