Colchester Water Cycle Study

Interim Findings Summary

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Quality information

Prepared by	Checked by	Verified by	Approved by
Carl Pelling Technical Director	Becci Ward Water & Flood risk Consultant	Helen Judd Associate Director	Helen Judd Associate Director

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P01	03/02/2025	Draft	04/02/2025	Helen Judd	Associate Director

Prepared for:

Colchester City Council

Prepared by:

AECOM Limited
Midpoint, Alencon Link
Basingstoke
Hampshire RG21 7PP
United Kingdom

T: +44 (0)1256 310200
aecom.com

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1 Introduction

1.1 Water cycle study purpose

A Water Cycle Study (WCS) is being undertaken by AECOM for Colchester City Council (CCC) as part of the evidence to inform the Council's emerging Local Plan. The WCS is being carried out in two parts:

- a WCS baseline produced jointly with Tendring District Council (TDC), and,
- a detailed WCS produced separately for the CCC administrative area (due to differences in Local Plan consultation timeframes between the two authorities).

The WCS approach has been undertaken in line with Environment Agency guidance[1] for WCS.

The objective of the WCS is to identify any constraints on planned housing and employment growth that may be imposed by the water cycle. The WCS then identifies how these can be resolved i.e. by identifying appropriate Water Services Infrastructure (WSI) which could be provided to support the proposed development, and the planning policy required to support it.

The detailed WCS for CCC is in a modelling and testing phase, assessing the implications of delivering the preferred site allocations which were identified in January 2025. This has included liaison and consultation with the water companies who provide water supply and wastewater services to the CCC area. The detailed WCS is due for completion in March 2025 and will support the Regulation 18 Consultation for the Local Plan.

This "Interim Findings" technical document has been produced to summarise the interim findings of the detailed WCS to support CCC committee members review of the Regulation 18 Consultation version of the Local Plan. The full details of the methodology will be included within the detailed WCS report.

2 WCS assessment approach

2.1 Approach summary

Together, the WCS baseline and detailed WCS will demonstrate the following for the CCC area:

- The current water environment condition and WSI issues and opportunities.
- Water environment and WSI capacity.
- How employment and housing growth affects capacity.
- What policy and types of infrastructure solutions are required to manage the effects of growth.

[1] Gov.uk (2021) Water Cycle Studies Guidance. Available at: https://www.gov.uk/guidance/water-cycle-studies (accessed 30/01/2025)

The Studies have focused on two key water themes:

- **wastewater management** – how it is delivered in the administrative area and how that may need to change; and,
- **water supply** - how adequate and sustainable water supply can be provided to keep pace with planned growth.

2.2 Wastewater management

The WCS determines the capacity for the collection and treatment of wastewater that would be generated from growth. It considers the physical capacity of the treatment infrastructure i.e. sewer network and Water Recycling Centres (WRC), and the capacity of the environment to accept discharge of treatment treated wastewater without detriment.

The capacity of WRCs is critical to this assessment and has been the focus of the detailed WCS. Anglian Water Services (AWS) operates and maintains the public sewer network and WRCs in the CCC administrative area.

2.3 Water supply

The availability of an adequate water supply has focused on comparing demand from allocated sites within the Local Plan with planned water demand increases within statutory planning undertaken by the public water supply providers.

AWS provides public water supply to the majority of the CCC area, with Affinity Water supplying small areas in Wivenhoe and Dedham. The WCS has considered the level of growth to be allocated in the Local Plan with the statutory Water Resources Management Plans (WRMP) produced by AWS and Affinity Water for the period to 2050.

3 Wastewater management

3.1 Baseline wastewater treatment capacity

A baseline capacity assessment was completed which identified that, prior to growth, the capacity of existing WRCs across CCC is variable.

As presented in **Table 3-1**, WRCs serving Dedham, Fingringhoe, Langham, and West Bergholt are shown to have no capacity. Growth in these locations would trigger the potential for new permits to discharge and possible WRC investment and upgrades. Colchester WRC is shown to have only 10% capacity remaining.

Table 3-1: baseline (pre-growth) dwelling capacity at WRCs

Site Name	Permitted DWF Capacity Remaining
BIRCH WRC	45%
COLCHESTER WRC	10%
COPFORD WRC	33%
DEDHAM WRC	No capacity
EIGHT ASH GREEN WRC	32 %
FINGRINGHOE WRC	No capacity
GREAT TEY WRC	33%
LANGHAM WRC (ESSEX)	No capacity
LAYER DE LA HAYE WRC	32%
TIPTREE WRC	19%
WEST BERGHOLT WRC	No capacity
WEST MERSEA WRC	29%
WORMINGFORD WRC	54%

3.2 Future wastewater treatment capacity

The preferred site allocations (made up of existing allocations in the current Local Plan[2], and emerging allocations for the new Local Plan) have been assigned to the drainage catchment of WRCs likely to serve those allocations. A calculation of future WRC capacity was then undertaken, assuming people occupying those dwellings would have a daily water use (per capita consumption, or PCC) of 125 litres per person per day (l/p/d); this assumption was agreed with AWS. It was also necessary to take account of existing commitments in the capacity calculations as these planned dwellings are not yet connected to WRCs and will further reduce available capacity.

Where a WRC would exceed its capacity due to preferred site allocations, a water quality risk assessment was undertaken considering the sensitivity of the watercourse receiving the treated discharge and the current level of treatment

[2] Colchester Local Plan (2021) available at https://www.colchester.gov.uk/local-plan/

applied at each WRC. Where capacity is exceeded, AWS have been consulted on the timing of any planned WRC improvement works.

Finally, a high-level review of sewer overflow spills in each WRC drainage catchment was undertaken to identify where annual spill frequency at outfalls is currently greater than the Government's long-term target. Where future spill targets are currently exceeded, this identifies where the sewer network is sensitive to the addition of further wastewater to the system and specific development control policy may be required to allow future solutions to be successfully delivered.

The results are presented in the following sections for each WRC, alongside a summary of the phasing implications relating to improvement works required (planned and unplanned) at each WRC and within its drainage catchment.

3.3 WRC assessment outcomes

3.3.1 WRC with future capacity

There is sufficient capacity at Birch, Layer-de-Haye, West Mersea and Wormingford WRCs to cater for the preferred site allocated within drainage catchments of these WRCs. There are also no identified issues with sewer spills or sewer flood risk in these catchments.

Local capacity in the sewer network for preferred sites allocated in these WRC drainage catchments will be considered by AWS to feed into the detailed WCS document.

3.3.2 Colchester WRC

Colchester WRC is a large WRC serving the City and its outskirts - there is baseline capacity at the WRC. The cumulative effect of existing commitments, site allocations and the dwelling and employment contribution from the Tendring Garden Community to 2041, would result in the WRC exceeding its capacity by the end of the Plan period.

Due to future capacity exceedance, a high-level water quality assessment was undertaken. This identified a low risk of future water quality non-compliance, on the basis that the quality the WRC is permitted to discharge has significant scope for changes before the technically achievable limits on further treatment would be reached. This means AWS will likely be able to introduce improvements as needed in the future to maintain no deterioration in downstream water quality compared to the current baseline when applying for a future permit to discharge.

Based on high-level estimates of likely site phasing, the existing WRC capacity would not be used within AWS' current 5-year Asset Management Plan (AMP) period which is referred to as AMP8 and runs from 2025 to 2030. Therefore, no WRC upgrades or improvement works are planned by AWS in the next 5-year period. However, Colchester WRC was put forward by AWS for 'planned infrastructure' to reserve for a future planned extension beyond AMP8 (post 2030) and the Local Plan will show this as an allocation for the WRC extension. Future expansion and WRC improvements works will be considered and implemented by AWS as needed in future AMP periods.

It should also be noted that there is currently a temporary issue with how flow compliance for the WRC is being measured which limits capacity on a temporary

basis. At the time of preparing this document, AWS and the Environment Agency are discussing how this temporary issue can be overcome and this will be reported in the detailed WCS, including any immediate implications for early phasing.

Capacity in the sewer network will be considered by AWS to feed into the detailed WCS document. However, there are Combined Sewer Overflows (CSO) in the WRC sewer network where baseline (before growth) spill frequency exceeds the long-term improvement plan targets. AWS are considering measures to address CSO spills to meet the future target. To enable CSO spills to be managed in the long-term, the WCS recommends a policy for allocated development in the WRC's drainage catchment to significantly reduce the volume of surface water generated from sites being discharged to the combined sewer network (see section 5.1.3).

3.3.3 Copford WRC

Copford WRC serves the settlements of Marks Tey, Stanway, Easthorpe, Mulberry Green and Copford Green. There is baseline capacity at the WRC; however, the cumulative effect of existing commitments and future allocations in these settlements would result in the WRC exceeding its capacity by the end of the Plan period.

Due to future capacity exceedance, a high-level water quality assessment was undertaken. This identified a high risk of future water quality non-compliance. This is because the quality the WRC is permitted to discharge has limited scope for changes before the technically achievable limits on further treatment would be reached. This means it may be challenging for AWS be able to introduce improvements as needed in the future to maintain no deterioration in downstream water quality compared to the current baseline when applying for a future permit to discharge.

Based on high level estimates of likely site phasing, the existing capacity would not be used within AWS' current 5-year AMP period (AMP8). However, improvement works are planned towards the end of the AMP8 period (the last 2 years of the period) to accommodate both water quality improvements and flow compliance needs associated with growth.

The scope to implement future required water quality changes at the end of the Plan period remains to be tested and reported in the detailed WCS; however, early phasing of growth should not be limited by capacity at the WRC and solutions for water quality needs towards the end of the Plan period will be identified within the detailed WCS report. The WCS recommends that an 80 l/p/d PCC be imposed for allocated sites in this catchment as this approach would significantly improve available capacity at the WRC, reducing the scale of improvements required (related to growth) and increase the number of dwellings which can be delivered within the first half of the Plan period.

Capacity in the sewer network will be considered by AWS to feed into the detailed WCS document. However, there is a sewer overflow in the WRC sewer network where baseline (before growth) spill frequency exceeds the long-term improvement plan targets. AWS are considering measures to address spills to meet the future target. To enable spills to be managed in the long-term, the WCS recommends a policy for allocated development in these settlements which prevents surface water generated from sites from being discharged to the foul sewer network.

3.3.4 Dedham WRC

Dedham WRC is at capacity and has limited scope to serve additional allocations. However, one allocation of 15 dwellings is proposed in the WRC's drainage catchment (there are no outstanding existing commitments). Subject to developers reaching agreement with AWS, servicing this allocation is likely to be manageable whilst AWS seek to revise the discharge permit for the WRC to deal with the baseline capacity issue.

The WCS recommends that an 80 l/p/d PCC be imposed for the allocated site in this catchment given the limited current capacity of the WRC and the likely delivery of the site early in the Plan period. The WCS also recommends that a policy be implemented which requires developers located within this WRC's drainage catchment to demonstrate they have agreed available capacity at the WRC (and the associated sewer network) with AWS prior to submitting planning applications.

3.3.5 Earls Colne WRC

Earls Colne WRC serves the settlements of Earls Colne, White Colne, Chappel and Wakes Colne. There is baseline capacity at the WRC. The cumulative effect of existing commitments and allocations would result in the WRC exceeding its capacity by the end of the Plan period.

The exceedance of capacity would be marginal and would only occur at the end of the Plan period. Additionally, AWS have identified improvement plans for the WRC in the AMP8 investment period hence the level of growth is likely to be achievable. The WCS recommends that an 80 l/p/d PCC be imposed for the allocated sites in this catchment; a sensitivity test on lower PCC identified that the future capacity would not be exceeded if water demand is restricted to this level.

Capacity in the sewer network will be considered by AWS to feed into the detailed WCS document.

3.3.6 Eight Ash Green WRC

Eight Ash Green WRC serves the settlements of Eight Ash Green, Ford Street and Fordham. There is baseline capacity at the WRC; however, the cumulative effect of existing commitments and allocations would result in the WRC exceeding its capacity by the end of the Plan period.

The exceedance of capacity would be marginal and would only occur at the end of the Plan period. There is no improvement plan indicated for the WRC in the AMP8 investment period; however, the high-level phasing assessment indicates that capacity would not be exceeded until later AMP periods, allowing time for AWS to consider future improvement plans.

Due to future capacity exceedance, a high-level water quality assessment was undertaken. This identified a low risk of future water quality non-compliance. This is because the quality the WRC is permitted to discharge has significant scope for changes before the technically achievable limits on further treatment would be reached. This means AWS will likely be able to introduce improvements as needed in the future to maintain no deterioration in downstream water quality compared to the current baseline when applying for a future permit to discharge.

The WCS recommends that an 80 l/p/d PCC be imposed for the allocated sites in this catchment; a sensitivity test on lower PCC identified that the future capacity would not be exceeded if water demand is restricted to this level.

Capacity in the sewer network will be considered by AWS to feed into the detailed WCS document. However, there are sewer overflows in the WRC sewer network where baseline (before growth) spill frequency exceeds the long-term improvement plan targets. AWS are considering measures to address spills to meet the future target. To enable spills to be managed in the long-term, the WCS recommends a policy for allocated development in these settlements which prevents surface water generated from sites from being discharged to the foul sewer network.

3.3.7 Fingringhoe WRC

Fingringhoe WRC serves the settlements of Peldon, Fingringhoe and Abberton. The WRC is at capacity and has limited scope to serve proposed additional allocations (up to 135) when combined with existing commitments.

Due to future capacity exceedance, a high-level water quality assessment was undertaken. This identified a low risk of future water quality non-compliance. This is because the quality the WRC is permitted to discharge has significant scope for changes before the technically achievable limits on further treatment would be reached. This means AWS will likely be able to introduce improvements as needed in the future to maintain no deterioration in downstream water quality compared to the current baseline when applying for a future permit to discharge.

AWS have identified improvement plans for the WRC in the AMP8 investment period, hence the level of growth is likely to be achievable in the longer term. However, the allocations in this WRC drainage catchment are likely to deliver housing early in the Plan period, and hence there is likely to be early phasing implications whilst a growth solution is implemented.

The WCS recommends that an 80 l/p/d PCC be imposed for the allocated site in this catchment given the limited current capacity of the WRC and the likely delivery of the site early in the Plan period. The WCS also recommends that a policy be implemented which requires developers in this WRC’s drainage catchment to demonstrate they have agreed available capacity at the WRC (and the associated sewer network) with AWS prior to submitting planning applications.

Capacity in the sewer network will be considered by AWS to feed into the detailed WCS document. No sewer spill risk increases have been identified.

3.3.8 Great Tey WRC

Great Tey WRC has baseline capacity; however, the cumulative effect of existing commitments and allocations would result in the WRC exceeding its capacity by the end of the Plan period. There is no improvement plan indicated for the WRC in the AMP8 investment period

Due to future capacity exceedance, a high-level water quality assessment was undertaken. This identified a low risk of future water quality non-compliance. This is because the quality the WRC is permitted to discharge has significant scope for changes before technically achievable limits on further treatment would be reached. This means AWS will likely be able to introduce improvements as needed in the

future to maintain no deterioration in downstream water quality compared to the current baseline when applying for a future permit to discharge.

As there is no improvement plan indicated for the WRC in the AMP8 investment period, there is likely to be early phasing implications whilst a growth solution is considered by AWS in later AMP periods (post 2030).

The WCS recommends that an 80 l/p/d PCC be imposed for the allocated sites in this catchment; a sensitivity test on lower PCC identified that the future capacity exceedance may be avoided if water demand is restricted to this level, and most of the proposed dwellings numbers could be accommodated. The WCS also recommends that a policy be implemented which requires developers in this WRC's drainage catchment to demonstrate they have agreed available capacity at the WRC (and the associated sewer network) with AWS prior to submitting planning applications.

Capacity in the sewer network will be considered by AWS to feed into the detailed WCS document. No sewer spill risk increases have been identified.

3.3.9 Langham WRC

Langham WRC serves the settlements of Langham, Hornestreet and Boxted. The WRC is at capacity and has limited scope to serve additional allocations when combined with existing commitments.

Due to future capacity exceedance, a high-level water quality assessment was undertaken. This identified a low risk of future water quality non-compliance. This is because the quality the WRC is permitted to discharge has significant scope for changes before the technically achievable limits on further treatment would be reached. This means AWS will likely be able to introduce improvements as needed in the future to maintain no deterioration in downstream water quality compared to the current baseline when applying for a future permit to discharge.

AWS have identified improvement plans for the WRC in the AMP8 investment period hence the level of growth is likely to be achievable in the longer term. However, some allocations in this WRC drainage catchment are likely to deliver housing early in the Plan period, and hence there is likely to be early phasing implications whilst a growth solution is implemented.

The WCS recommends that an 80 l/p/d PCC be imposed for the allocated site in this catchment given the limited current capacity of the WRC and the likely delivery of the site early in the Plan period.

Capacity in the sewer network will be considered by AWS to feed into the detailed WCS document. There are existing sewer capacity issues within the drainage catchment which are being investigated by AWS for a solution.

Given the known sewer network capacity issues, and the limited WRC capacity, the WCS recommends that a policy be implemented which requires developers in this WRC drainage catchment to demonstrate they have agreed available capacity at the WRC and the associated sewer network with AWS prior to submitting planning applications.

3.3.10 Tiptree

Tiptree WRC serves the settlements of Tiptree, Messing and Tolleshunt Knights. There is baseline capacity at the WRC; however, the cumulative effect of existing commitments, the neighbourhood plan allocation (200 dwellings) and Local Plan allocations would result in the WRC exceeding its capacity by the end of the Plan period.

The exceedance of capacity would not occur until towards the end of the Plan period meaning initial delivery and phasing should not be affected; this would allow time for AWS to consider future improvement plans in later AMP periods (beyond 2030).

Due to future capacity exceedance, a high-level water quality assessment was undertaken. This identified a medium risk of future water quality non-compliance. This is because the quality the WRC is permitted to discharge is currently tightly controlled and scope for further changes is finite before the technically achievable limits on further treatment would be reached. This means AWS may be able to introduce improvements as needed in the future to maintain no deterioration in downstream water quality compared to the current baseline when applying for a future permit to discharge

The scope to implement future required water quality changes at the WRC towards the end of the Plan period remains to be tested and reported in the detailed WCS; however, early phasing of growth should not be limited by capacity at the WRC and solutions towards the end of the Plan period will be identified within the detailed WCS report. The WCS recommends that an 80 l/p/d PCC be imposed for allocated sites in this catchment as this approach would likely mean capacity is not exceeded and a long term improvement plan may not be required.

Capacity in the sewer network will be considered by AWS to feed into the detailed WCS document. However, there is a sewer spill risk in the WRC sewer network where baseline (before growth) spill frequency exceeds the long-term improvement plan targets. AWS are considering measures to address spills to meet the future target, but to enable spills to be managed in the long-term, the WCS recommends a policy for allocated development in these settlements to prevent surface water generated from sites being discharged to the foul sewer.

3.3.11 West Bergholt WRC

West Bergholt WRC serves the settlements of West Bergholt, Tye Green and Great Horkesley. The WRC is at capacity and has limited scope to serve additional allocations when combined with existing commitments.

Due to future capacity exceedance, a high-level water quality assessment was undertaken. This identified a low risk of future water quality non-compliance. This is because the quality the WRC is permitted to discharge has significant scope for changes before the technically achievable limits on further treatment would be reached. This means AWS will likely be able to introduce improvements as needed in the future to maintain no deterioration in downstream water quality compared to the current baseline when applying for a future permit to discharge

However, there is no improvement plan indicated for the WRC in the AMP8 investment period. Some allocations in this WRC drainage catchment are likely to deliver housing early in the Plan period, and hence there is likely to be early phasing implications whilst a growth solution is considered by AWS in later AMP periods (post

2030).The WCS recommends that an 80 l/p/d PCC be imposed for the allocated sites in this catchment given the limited current capacity of the WRC and the likely delivery of the sites early in the Plan period.

Capacity in the sewer network will be considered by AWS to feed into the detailed WCS document. However, there is a CSO in the WRC sewer network where baseline (before growth) spill frequency exceeds the long-term improvement plan targets. AWS are considering measures to address CSO spills to meet the future target. To enable CSO spills to be managed in the long-term, the WCS recommends a policy for allocated development in these settlements to prevent surface water generated from sites being discharged to the foul sewer network.

Given the CSO spill frequency, and the lack of baseline WRC capacity, the WCS recommends that a policy be implemented which requires developers in this WRC catchment to demonstrate they have agreed available capacity at the WRC and the associated sewer network with AWS prior to submitting planning applications.

4 Water supply assessment

4.1 Water supply baseline

AWS and Affinity Water supply potable water to the CCC administrative area. All water supply companies manage available water resources within defined Water Resource Zones (WRZ).

The majority of the CCC area is in AWS' Essex South WRZ with 98% (11,049) of the allocated dwellings to be delivered within this WRZ. Affinity Water provide potable water to small areas of CCC at Dedham and Wivenhoe; these parts of CCC are in Affinity water's Brett WRZ and 190 of the allocated dwellings would be in this WRX. Both Essex South WRZ and Brett WRZ are classed as under serious water stress by the Environment Agency.

Water supplies provided by both companies to the CCC administrative area are made up of a combination of groundwater abstractions from the Essex Chalk Aquifer, and surface water sources via Ardleigh Reservoir. At Ardleigh Reservoir, Affinity Water operate a shared reservoir with AWS as part of a mutual statutory arrangement.

4.2 Water supply balance

Water companies have a statutory duty to plan for water supply over a minimum of 25-year periods via the production of 5-yearly WRMPs. Once approved by regulators, the WRMPs then inform the Business Plans produced by water companies for each AMP period, identifying where and when investment in water resources is required in that period.

The need for water resource interventions is identified through a detailed process of calculating available water supply over the WRMP period and comparing its future demand for water allowing for growth and climate change. This process is called supply and demand balance forecasting, with all water company WRZs assessed as having a either a balanced supply and demand, a surplus (supply exceeds demand), or a deficit (demand exceeds supply).

The AWS WRMP[3] informing AMP8, shows that the Essex South WRZ is predicted to go into supply deficit by 2025 if no water resource interventions are implemented. This is predominantly due to a growth in demand coupled with a fall in water supply available. The fall in water available is due to climate change and the need to reduce the existing volume of water abstracted from sensitive environments. This means the majority of the CCC area (including Colchester City) would not have sufficient potable water to meet AWS meet AWS' minimum supply standards of service without the implementation of water resource management measures.

The Affinity Water WRMP[4] informing AMP8 shows that the Brett WRZ would have a surplus for most of the Local Plan period, until 2040.

[3] Anglian Water (2024) Water Resources Management Plan. Available at: https://www.anglianwater.co.uk/corporate/strategies-and-plans/water-resources-management-plan/ (Accessed 31/01/2025)
[4] Affinity Water (2024) Water Resources Management Plan. Available at: https://affinitywater.uk.engagementhq.com/wrmp. (Accessed 30/01/2025).

4.2.1 Water resource interventions

As set out in the published WRMP, AWS plans to overcome the predicted deficit in the South Essex WRZ mainly through a demand management strategy (reducing water used by the existing users in the WRZ) as well as new, or changes to, existing water supply sources.

The preferred demand management strategy includes a smart metering programme, leakage reductions and water efficiency measures. The raw water resource improvements include changes to imports and exports to, or from the Essex South WRZ (coupled with greater connectivity of WRZs to each other which allow sources to be shared), and the Colchester WRC indirect re-use and transfer to Ardleigh Reservoir.

In relation to imports into the WRZ, AWS have been granted planning permission by West Suffolk Council, Babergh and Mid Suffolk District Council, and Colchester City Council for a 69km section of pipeline between Bury St Edmunds and Colchester which will be capable of transferring up to 25 million litres per day (Ml/d).

The AWS WRMP shows that the combined impact of the proposed demand management measures and current and future raw water improvements in the Essex South WRZ results in a forecast balance of supply and demand by the end of the Local Plan period (and beyond to 2050). The Affinity Water WRMP shows that current and future demand management and changes to supply volume from Ardleigh Reservoir would enable the current surplus of supply to continue beyond the Local Plan period.

4.2.2 Assessment of growth

Consultation with both AWS and Affinity Water has indicated that the number of dwellings to be delivered over the CCC plan period is broadly in-line with the forecast dwelling and population increases assumed within the WRMP supply and demand forecasting process.

AWS has assumed an increase in approximately 22,200 homes in the Essex South WRZ to 2050. Braintree is the only other significant urban centre within this WRZ, demonstrating that the 11,049 dwellings within the CCC Local Plan that would be in the Essex South WRZ is broadly allowed for in the WRMP process. Affinity Water has indicated that the small number of dwellings (less than 200) to be allocated at Dedham and Wivenhoe is in-line with the assumptions for the Brett WRZ and adequately accounted for.

This means the WRMP conclusions of both AWS and Affinity Water can be relied upon as evidence that water supply to meet domestic supply is planned for in the long-term and not a constraint to the number of dwellings allocated. Additionally, the WRMP is subject to various statutory environmental assessments[5], including Strategic Environmental Assessment, Water Framework Directive Assessment and Habitat Regulations Assessment, further demonstrating that an environmentally sustainable water supply is likely to be available to meet this level of demand.

[5] Available at: https://www.anglianwater.co.uk/corporate/strategies-and-plans/water-resources-management-plan/ (Accessed 30/01/2025)

4.2.3 Non-domestic supply

Although both water companies will provide residential development with potable water, AWS will not routinely meet potable water demand for non-domestic development (i.e. process water for non-residential sites) where there is no legislative requirement to do so. This is in keeping with the Government's Integrated Plan for Water[6] and Environment Improvement Plan[7] which together set out actions for securing resilient water supplies driven by the needs of the Environment Act 2021[8]. These plans include actions such as the development of a "Roadmap to Water Efficiency", of which a key requirement is to reduce non-household water demand by 9%.

AWS will require all new requests for non-domestic water connection which require greater than 20 m^3/d to be subject to a Water Resource Assessment before they will confirm whether this demand can be met. This assessment will require promoters of non-household development (who require water for non-domestic purpose) to demonstrate that they have considered water efficiency measures, sources of local supply and potential for water neutrality.

Using information from the Environment Agency's Abstraction Licencing Strategy (ALS) covering the CCC area, the WCS has identified that local water sources are generally restricted from further abstraction licences. No abstraction permitted in the majority of CCC's area when river flows are low, and limited volumes when flows are average or higher. Only small areas south and north east of the CCC area would have water available for licencing at higher flows.

AWS has developed a joint protocol with partners; the Environment Agency, Natural England and Cambridge Water, which provides advice to Local Planning Authorities on how to consider policies to reduce demand (both domestic, and non-domestic). The detailed WCS will report on how these policies can be supported practically, with advice particularly for non-domestic development on water efficiency, and to provide evidenced policies in this area.

[6] https://www.gov.uk/government/publications/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water#chapter-3-securing-a-plentiful-supply-of-water
[7] https://www.gov.uk/government/publications/environmental-improvement-plan
[8] https://www.legislation.gov.uk/ukpga/2021/30/contents

5 Policy recommendations

5.1 Introduction

Based on the assessments completed, the following policy recommendations were put forward to CCC for consideration as part of the WCS development.

5.1.1 Per capita consumption – domestic

The wastewater assessment has shown that proposed dwellings in most allocations being restricted to a water use of 80 l/p/d would significantly improve the available capacity at WRCs across the CCC area, and in some cases, removing the need for an improvement scheme to be implemented in the plan period.

Additionally, the CCC area is classified as water stressed by the Environment Agency, and the AWS supply zone within which CCC is located, is predicted to have a deficit of supply (demand exceeds supply) from 2050, without water resource management intervention. Whilst Anglian Water have identified demand management measures, and new (or changed) water supply options to manage this deficit in the long term, this will require significant investment with uncertainties in the timescale for delivery. Therefore, there is strong evidence that a stricter PCC policy for new development would significantly contribute to managing and maintaining a surplus of supply within the CCC area. This is in keeping with Government plans to address water scarcity in response to the Environment Act 2021.

It is recommended that a policy requiring all dwellings within allocated sites within the Local Plan to meet a PCC target of 80l/h/d.

5.1.2 Confirmation of WRC capacity in key locations

There is no baseline wastewater treatment capacity in some WRCs, for which some have no improvement plans proposed in the next 5-year water company investment period (AMP8 – from 2025 to 2030). Development within WRC drainage catchments which have this constraint should be subject to a policy whereby developers must demonstrate they have confirmed with AWS that treatment capacity is available to serve the development at the point of anticipated connection, until such time as a WRC improvement plan is in place. This is to enable AWS to serve developments once occupied without breaching WRC discharge permit conditions and hence protect downstream water quality and connected water dependent habitats.

The WCS recommends this is implemented for development in the following WRC drainage catchments:

- Dedham;
- Fingringhoe;
- Great Tey;
- Langham; and
- West Bergholt.

5.1.3 Management of surface water discharge to the sewer system

In some locations, allocated sites would connect to sewer systems which have known existing capacity issues, resulting in sewer flooding risk or sewer overflow spill frequencies which would fail to meet future targets. Additional surface water into these sewer networks could exacerbate either of these issues.

Colchester WRC has a partially combined system; therefore, it is recommended that a policy be implemented whereby developers in this WRC drainage catchments must discharge attenuated surface water to a receiving waterbody and not to the combined sewer network, unless it can be demonstrated that there is no other option.

The following WRC drainage catchments have separated sewer systems (separate foul and surface water sewers). For these WRCs, it is recommended that a policy be implemented whereby developers in these WRC drainage catchments must not be permitted to discharge surface water to the foul sewer network:

- Copford;
- Tiptree; and
- West Bergholt.