

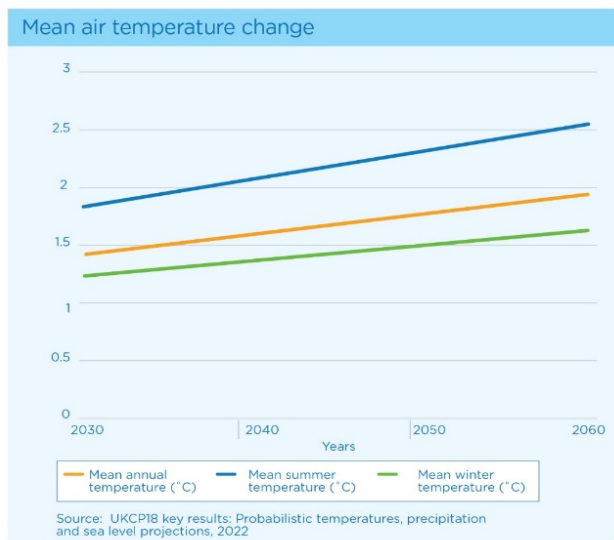
Future Trend: Air Temperatures

Trend definition and relevance to DWMP

Climate change is expected to increase air temperatures all-year round, leading to milder winters and hotter summers. While warmer conditions may improve the efficiency of some wastewater treatment processes, they can also increase river temperatures, potentially reducing water quality and placing greater pressure on aquatic ecosystems. Higher air temperatures can also increase the risk of odour generation and the formation of corrosive hydrogen sulphide (H_2S) gas within wastewater networks. Elevated temperatures may also affect the performance and reliability of electrical control panels, increasing the risk of equipment overheating, ventilation challenges, and unplanned operational failures. Higher temperatures can also accelerate asset deterioration, reduce asset health and increase the risk of operational and service performance issues.

Within the DWMP, responding to this trend is likely to require increased investment in the resilience of wastewater treatment works and sewer network assets to manage the effects of higher temperatures, protect asset health and maintain long-term operational performance.

Trend description, uncertainty and potential impact on our region



- The Representative Concentration Pathways (RCPs) are greenhouse gas emissions scenarios used to project future climate change and its effects on key environmental variables, including air temperature¹.
- As illustrated in the Figure, under the RCP8.5 scenario, the central estimates of mean winter, annual, and summer air temperatures in the Thames River Basin are projected to increase by 1.6°C, 1.9°C and 2.5°C, respectively, by 2055. Warming is expected to continue through to 2100, when mean annual temperatures are projected to be around 4.3°C higher than the baseline².
- Under the RCP4.5 scenario, the 50th percentile mean winter, annual, and summer air temperatures in the Thames River Basin are projected to increase by 1.2°C, 1.4°C and 1.9°C, respectively, by 2055. By 2100, mean annual temperatures are projected to be around 2.6°C above the baseline, reflecting a more moderate warming pathway².

Stage of DWMP used	
Risk assessment	✓
Plan development	✓
Impact/Importance	
Short term (2035)	Low
Medium term (2045)	Low
Long term (2055)	Low
Example PIs affected by this trend	
	Good ecological and/or chemical status: Urban and transport (shared responsibility)
	Good ecological and/or chemical status: Public sewerage
	Treatment works compliance (numeric)



References

- 1 UKCP18 Guidance: Representative Concentration Pathways. UK Climate Projections (UKCP18). Met Office (2018). Available at: [UKCP18 Guidance – Representative Concentration Pathways](#).
- 2 UKCP18 Key Results 2022, Met Office (2022). Graph produced from Probabilistic Air temperature and Sea Level Projections [Excel spreadsheet]. Available at: [Met Office UKCP summaries and headline findings](#) (Accessed: March 2025).

