To: Kent Flood Risk Management Committee

From: Alan Turner, Water Resources Manager, Kent County Council

Subject: Flood and Water Management (FWM) Team activities and projects to deliver improved water management

Classification: Unrestricted

Introduction

1 This paper outlines some of the activities that KCC undertakes to promote sustainable water use in the county and support the water companies and other key partners to work effectively together.

The Water for Sustainable Growth (WfSG) Study

2 The Kent and Medway Growth and Infrastructure Framework (GIF) sets out the scale of development growth up to 2031, the demographic implications of this growth and the wide range of infrastructure needed to support it; from schools and hospitals to highways and utilities, including water utilities. This demographic information is provided to the water supply and wastewater companies to ensure a consistent basis for the assessment of infrastructure requirements and costs across the Kent and Medway area.

3 Kent has five companies that provide water supply services and two that provide wastewater services. Their areas of operation do not align with the local government administrative boundaries and, added to this, their planning cycles does not align with the timing of the GIF. Furthermore, there is currently no long-term planning document covering wastewater management. This makes it difficult for local authorities to interpret the water company plans and to ascertain whether sufficient water management measures will be in place to accommodate local growth and development. It also makes it difficult to provide clarity over the infrastructure requirements and costs that need to form part of the GIF.

4 To help overcome this, KCC commissioned the Water for Sustainable Growth (WfSG) study, in partnership with water companies, the Environment Agency and planning authorities in Kent. The study was completed in October 2017 (A copy of the report is available on request).

5 The WfSG study addressed two key issues:

- whether wastewater treatment works could accommodate the increased wastewater load from the planned housing growth and whether the discharges (effluent) from these works could be still be treated to a high enough quality to help deliver the environmental water quality objectives of the receiving water bodies, set by the River Basin Management Plans. And,
- the water demand implications of new growth, beyond what was considered in the 2014 Water Resources Management Plans (WRMPs), and the

feasibility of balancing additional water demand by improving water use efficiency within existing homes.

6 The conclusions of the WfSG study were that:

- There are number of inland wastewater treatment works where it is expected that the additional wastewater flows arising from growth will mean that the effluent quality would have to improve to avoid any additional impact on the environment. At some locations within the River Medway catchment this will require effluent quality standards that are at the limits of what can be achieved with current treatment technology. Fortunately, water treatment technologies are improving steadily, and it appears that this may be sufficient to allow the relevant deadlines to be met for achieving the River Basin Management Plan objectives. Elsewhere, there are no potential, fundamental constraints and the problem is one of timely investment and provision of infrastructure.
- Across most of Kent, the level of housing growth that was accommodated within the current (2015) WRMPs falls significantly short of the growth targets that local planning authorities now have. KCC will use the information provided by this study to ensure that new growth targets are fully accounted for in new WRMPs for the period from 2020.
- High levels of water efficiency in new homes combined with retrofitting water efficient devices into 5% of existing homes could make a useful contribution to balancing future supply and demand, especially for Medway, Ashford, Canterbury and Thanet. KCC is encouraging Kent planning authorities to adopt the higher 'optional' level of water efficiency provided through the Building Regulations and is working with water companies to provide evidence to support this. Experience shows that public sector efforts to retrofit water efficiency into existing homes can work best if it is combined with energy efficiency as part of a high-profile programme. National home energy efficiency programmes have changed in recent years and clarity on future programmes will be needed before further public sector work can be developed to take this forward.

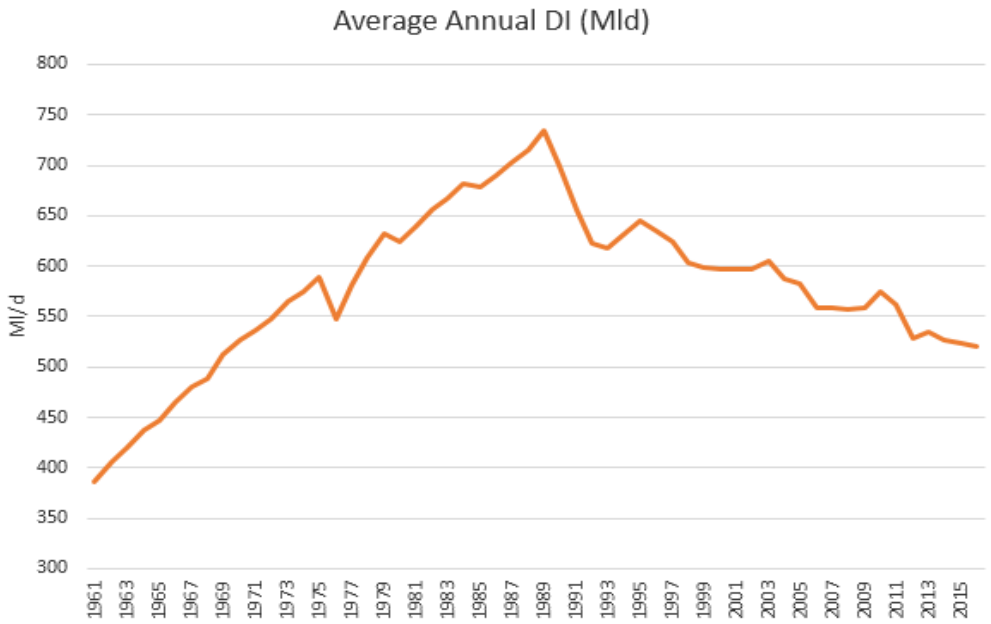
Integrated water management for new developments

7 Over the 29 years since privatisation of the water industry, some water companies have been able to reduce the amount of water they take from the environment at the same time as accommodating housing growth. For example, Southern Water put nearly 30% less water into its supply network in 2015 than it did in 1989 (see Figure 1 below). This has largely been achieved through declining industrial demand coupled with leakage reduction, metering programmes and water use efficiency improvements.

8 Although some of these demand reductions still continue, the pace of population growth is such that new measures are constantly needed to help balance supply and demand. For example, improvements in water treatment technology mean that reusing water is becoming more feasible and, for major new housing developments, this opens up the possibility of a more integrated approach to water management whereby surface water runoff and even sewage water can be treated and safely reused on site for non-potable demands such as garden watering and toilet flushing.

9 KCC is promoting this approach and supporting Shepway District Council in the inclusion of integrated water management within the Otterpool Park development. Appropriate aspirations have been included in the Charter for Otterpool Park. This can be found at: https://www.shepway.gov.uk/more-homes/more-jobs/otterpool-park

Figure 1. Long-term Trend in Distribution Input for Southern Water



Source: Southern Water Services

Water management for horticulture

10 The Kent Water Task Group is a partnership between KCC, NIAB EMR (formerly East Malling Research), the Environment Agency, the National Farmers Union, South East Water and others. It is chaired by KCC and is helping Kent horticultural businesses to improve the efficiency of their irrigation and water collection systems.

11 As part of this partnership, NIAB EMR has established a new national Water Efficient Technology (WET) Centre at East Malling for research and demonstration of high performance irrigation systems for horticultural crop production. The Centre is supported by six commercial businesses, each of which is providing its equipment to form part of the demonstration facility as well as providing funds for its ongoing operation. The Centre is developing commercial packages of technology that will be marketed widely. The first package is for the precision irrigation of strawberries and it is already developing international interest. Further information about the WET Centre can be found here: http://www.emr.ac.uk/resource-efficiency-for-crop-production/current-projects/wet-centre/

12 KCC is using its leadership of the Water Task Group to develop and promote systems to reduce the risk of runoff water from polytunnels causing muddy

floodwater that can find its way onto roads and pollute rivers. A rainwater harvesting system has been put in place at NIAB EMR which is being used to intercept rainwater from polytunnels and to store it as a valuable, additional source of water for irrigation. The performance of the system is being monitored and the results will be used in a guidance document that will be made available to applicants for Planning Permission for new polytunnel developments.

Contact Officer: Alan Turner, Water Resources Manager, 03000 417187
alan.turner@kent.gov.uk