

APPENDIX 4.1
ANALYSIS OF THE RESULTS OF THE
'BLUE SKY' WORKSHOPS

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Key Issues or themes to come out of the "Blue Sky" workshops in respect of (i) the water environment, (ii) water supply and demand, (iii) wastewater treatment, and (iv) flood risk management are given below. In the main part, the themes noted below highlight the range of component measures and interventions that were identified during the workshops, however in the case of the water environment the themes noted refer to environmental aspirations.

The measures and interventions identified below are cross-referenced (in parentheses) to the Key Issues identified in Phase 1 of the study (those listed in Section 2 of this report). The aim of this is to demonstrate which issues are addressed by which measures and interventions, to identify how options identified for each of the four facets of the water environment may overlap and help to address Key Issues in other areas and also to highlight where options do not address Key Issues.

Key Environmental Issues

The identified aspirations that are required to address environmental concerns in relation to the water environment fall within five main themes as follows:

- a) **Incorporate the floodplain / open spaces in design**
 - Design the urban area with a view to enhancing the water environment for biodiversity.
 - Use the flood plain and green belt to create a wetland feature
 - Encourage multi-functional systems / open spaces to deliver biodiversity gain
 - Maintain 'green' links from Green belt into Ashford town centre
 - Maintain existing aquatic wildlife corridors wherever possible
 - Minimise loss of green space
 - Ensure that there is no net loss of flood plain or other wetlands

- b) **Improve water quality**
 - Increase effort to decrease point source pollution inputs
 - Encourage agro-environmental schemes / reinstatement of riparian buffer strips to reduce diffuse pollution inputs (especially from agriculture)
 - Increase surface water attenuation in upper catchment
 - Maintain ground and surface water quality and wherever possible enhance
 - Treat sewage effluents to the highest possible standards
 - Encourage use of natural systems / habitats to form part of water treatment processes
 - Decrease temperature of effluent discharges - use landscape design (retention ponds / wet woodlands) to cool sewage effluent and river water
 - Incorporate runoff retention in urban areas
 - Reduce sedimentation of river channel. Consider implications of surface water runoff in all developments

- c) **Increase summer flows to aid biodiversity and increase dilution capacity**
 - Augment summer flows in both Great and East River Stour and / or River Beult
 - Maintain groundwater reserves required for downstream recharge of chalk river
 - Protect natural river features
 - Encourage growth of bankside and river edge vegetation to increase flows
 - Consider some form of water re-circulation
 - Increase, where possible, the amount of water in the system

- d) **Minimise impacts of development on biodiversity**
 - Encourage education and increase public understanding of value of water resources
 - Avoid, where possible, areas / habitats / sites that are currently designated for conservation value or wildlife potential

- e) **Consider impacts of Climate Change in design**
- Consider likely seasonal variation and knock on effects on habitats in design.

Key water resource and supply issues

Key Issues or themes to come out of the "Blue Sky" workshops in respect of water resources and supply may conveniently be grouped into water resources issues in the one hand, and the management of water demand on the other:

a) **Water Resources**

Potential water resource measures and interventions included:

- (i) **Consider extensive conjunctive use of water (Key Issue W1), e.g.**
- Change abstraction patterns
 - Limit ground water abstraction to enhance river flows
 - Reuse high quality effluent to improve water quality, Stour and Beult
 - Flood plain/winter storage
 - New strategic storage to relieve ground water sources in summer
- (ii) **Reduce demand on sources through water reuse (W2, W3)**
- Higher standard effluent discharged into Stour and re-abtract downstream (new water supply treatment works, Plucks Gutter or into future new (Broad Oak?) reservoir)
 - Re-circulate effluent to upper catchment of Stour and abstract downstream (new water supply treatment works, Plucks Gutter or into future new (Broad Oak?) reservoir)
 - Higher standard effluent into Beult (SSSI) and re-abtract from Medway to enhance Bewl transfer scheme
 - Treat effluent to potable standard and reuse
 - Grey water system(s) and rainwater harvesting
- (iii) **Enhance sources (W1)**
- Groundwater recharge with high standard effluent
 - Groundwater recharge through SUDS (soakaways)
- (iv) **Consider new sources within study area (W1)**
- Reuse
 - Local storage reservoir or upstream/winter storage
 - Military Canal
 - Utilise minor resources in E. Kent (Petham, Little Stour)
- (v) **Consider new sources outside study area (W1)**
- Enhanced Bewl reservoir
 - Broad Oak reservoir
 - Desalination from Thames estuary or south coast
 - Thames basin
 - France
- (vi) **Change "ownership" of sources and introduce whole cost pricing, including environmental costs (W5)**

b) **Water Demand Management**

Views expressed on ways to manage water demand included:

- (i) **Maintain economic level of leakage (W1)**

- (ii) Compulsory metering and differential tariffs to reflect true cost of water, including environmental costs (W2)**
- (iii) Water conservation and efficiency codes/legislation – Government backed (W2)**
 - Water saving devices in all new building
 - Restrict supply flow/pressures
 - Realism on demand management
 - Local incentives/grants/taxes
 - Realistic and agreed environmental costs to allow selection of best value options
- (iv) Efficient local services (W2)**
 - Laundry
 - Car washes
- (v) Compulsory water audits on mid- to large sized industrial water users and compulsory retro-fit water saving devices (W2)**
- (vi) Incentives to retro-fit water saving devices in homes (W2)**
- (vii) Educate consumers (W2)**
- (viii) Change agriculture to eliminate irrigation (W2)**

Key wastewater management issues

Views expressed on ways to deal with issues related to wastewater management were not always fully supported by all of the participants. The identified measures and interventions that received fairly widespread support were:

- Use of water minimisation technology to reduce the generation of domestic wastewater. This covers a host of individual techniques from grey water re-use, rainwater harvesting, etc. However, there was some concern about the potential cost of some techniques (W1, S1, S2).
- Use of Sustainable Urban Drainage Systems (SUDS) to manage the quantity, rate and quality of stormwater runoff and to help groundwater recharge (W1, F3).
- Use of "soft" controls, such as riparian buffer strips and agri-environmental schemes to manage the quantity and quality of diffuse agricultural/rural runoff (E1, E3).
- Use of "green" treatment technology, e.g. reed beds, combined with the need to cool the final effluent before discharge to the River Stour (S1, S2, E2).
- Need to maintain or improve low river flow rates in the River Stour to support bio-diversity and provide dilution capacity (E3, S3).
- Need to retain treated effluent discharges in the Stour/Beult catchments to maintain river flows and aid water resources (links to preceding item) (W1, E1).
- Wastewater to be regarded as an asset rather than a problem (W1).

Suggested interventions on which there was a wide diversity of opinion were:

- Centralised or dispersed sewage treatment facilities. Strong views expressed in favor of both alternatives (S1).
- Effluent re-use. Liked the idea, but concerns about public acceptance depending on immediacy of re-use following discharge (W1, E1).
- Conflict between desire for compact footprint for the development as a whole and the need for space to implement many wastewater treatment options (S2, E3).

Key flooding issues

Key Issues, suggested measures and interventions that came out of the "Blue Sky" workshops in respect of the flood management were as follows:

- a) **Use of the floodplain (F1)**
- Critical issue – maintain, replace or extend the floodplain.
 - Urban planning considerations may favour development within the floodplain in central Ashford to limit the urban footprint. Re-provision of the floodplain will be essential and the new floodplain areas must give similar or improved habitat.
- b) **Use of storage (F1, F2)**
- Increase size of existing upstream flood detention reservoirs.
 - Provide new flood storage on- or off- line, perhaps on tributaries or upstream of the existing reservoirs.
 - If this storage is within the urban area, then it should be designed to meet planning and environmental needs.
- c) **Use of SUDS/land use change (F3)**
- All uses of SUDS drainage to be encouraged to maximize source control of additional urban run-off, but include long term maintenance as design issue.
 - Encourage/enforce buffer strips to all watercourses in both urban and agricultural areas for control of sediment and pollution.
 - Explore innovative SUDS options, such as green roofs.
 - Explore upstream land use options. This should consider potential landscape changes due to climate change.
- d) **Use of conveyance/diversion (F1)**
- Hard engineering options, such as improved channels or flood embankments and walls are unlikely to be economic or effective, and incompatible with environmental needs.
 - However, planning concepts that use water as an urban feature, such as ‘canal districts’ and ‘lake districts’ may also provide additional flood conveyance through Ashford.
 - Diversion of flood peaks into other catchments may be technically attractive, but will widen the impact of Ashford outside the Stour catchment.