

APPENDIX 6.2
ASPIRATIONAL TARGETS FOR QUALITY
OBJECTIVES

Objective	Assessment Criteria	Indicators	Targets (statutory/desirable)	Derived from
1.0 Water Supply and Resources				
1.1 To seek to ensure new development does not have a direct impact on the quantity and quantity of water available from ground water and surface water resources.	Does the strategy include measures to avoid deterioration on surface and ground water resources	Surface and groundwater quality	(a) Application of treated sewage sludge to land to be in accordance with the requirements of the Nitrate Directive and Groundwater Regulations	Nitrate Directive Groundwater Regulations
		Water resource balance	(b) Reduce licenced groundwater abstractions in Chart Leacon GWMU to 60% of 2003 levels by 2010	Enhanced from Kentish Stour LEAP 2000 Issue 3
1.2 To ensure a sufficient and sustainable water supply, commensurate with the scale of development proposed addressing over-abstraction and licensing issues where necessary	Does the strategy include measures to ensure adequate water supply?	Deployable output of sources	(a) As set out in Mid Kent Water's Water Resource Plan detailing their 25 year supply demand balance and included in their AMP4 business plan	SEA
		Security of Supply Index	(b) Water companies achieve rating of 100 for OFWAT security of supply index (SoSI) ¹ by 2015	Adapted from Water UK sustainability indicator A1
1.3 To promote sustainable water usage by domestic and non-domestic consumers, with an aim of reducing average household water usage in Ashford by 30%	The strategy will promote reduced water use and water-saving technology?	Household water consumption	(a) Household water demand in new developments (post 2006) to be reduced from 2003 MKW average PCC by 20% by 2010 and by 30% by 2020	Adapted from Ashford's Future Overarching Report
		Mean volume/per person or business using	(b) Increase water efficiency by non-domestic mains and non-mains consumers	n/a
		Water saving technology Retrofitting of existing development (for example with meters and water saving technology)	(c) All new development post 2006 to include water saving technologies (e.g. the provision of rainwater re-use	Adapted from SEA
			(d) Post 2006, all new development to allow for retrofitting of grey water recycling. All development post-2010 to include provision for grey water recycling.	Adapted from SEA
			(e) 100% existing social housing and public buildings to be retrofitted with water saving technology, to achieve reductions in consumption of 30% by 2020	Adapted from Handbook for Change?
2.0 Water Quality				
2.1 To improve summer water flows in the River Stour in a way that maintains and enhances its nature	The strategy will improve and maintain flows in the river Stour	River flows during dry summer periods. Frequency of Emergency	(a) Establish an environmentally acceptable flow regime for the G Stour through Ashford and identify options and implement measures for low flow alleviation. (Agency to suggest target summer Q95 river flow rate?)	Kentish Stour LEAP 2000 Issue 9

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conservation status as a chalk river		Drought Orders	(b) No depletion from long-term average river base flows in upper Stour ² .	SEA
2.2 To prevent any negative impact on water quality in the River Stour and any other receiving water courses arising from surface water runoff from new development	The strategy will minimise water pollution by adopting measures to reduce surface water runoff.	Proportion of new development that is directed into SUDS	(a) 75% of new paved areas and roads to be served by SUDS from 2006, 100% from 2010	Adapted from Handbook for Change?
	The strategy will include measures to limit pollution from stormwater runoff	Reported condition of water quality in the River Stour	(b) No adverse impacts on water quality to arise from development or associated works.	Good practice
2.3 To maintain and improve groundwater quality	The Strategy will include measures to maintain and improve groundwater quality	Pollution incidents to groundwater	(a) New development to comply with “Policy and Practise for the Protection of Groundwater”	Environment Agency policy and development controls
		Stress on groundwater resources	(b) Reduction in groundwater abstraction in Upper Stour GWMUs which, according to the Stour CAMS (May 2003) are over abstracted or over licensed	PR04 Driver G5
			(c) Increase groundwater reserves to historic levels	Kent BAP 1997
2.4 To introduce wastewater treatment measures to attain a discharge standard in accordance with directives and standards that ensures receiving waters and flow are protected and improved	The strategy will introduce a range of measures for wastewater treatment	River quality objectives	(a) Achieve the required reliability of compliance with the 1997 RQOs and forestall future risk of failure Address RE failures ³	River Ecosystem Classification Regs 1994SI1994/1057
		Level of sewage treatment	(b) Appropriate treatment for discharges to freshwater should be achieved by 31December 2005 ⁴	UWWTD (DEFRA raising the standard guidance)
			(c) Sewage treatment shall achieve UWWTD standards for Great Stour south of Ashford to Canterbury, which is designated as a sensitive area ⁵ .	Urban Wastewater Treatment Regulations 1994

Objective	Assessment Criteria	Indicators	Targets (statutory/desirable)	Derived from
		Quantities of effluent produced & amount of nutrients & organic matter discharged in effluent.	(d) Any new sewage treatment plant serving a p.e. of >10,000 discharging into a 'sensitive area' must meet threshold level of 1 mg/l of Total Reactive Phosphorous set to avoid eutrophication. ⁶	Urban Wastewater Treatment Regulations 1994
2.5 To ensure that the wastewater infrastructure capacity is commensurate with the rate of growth and location of new development	The strategy will ensure that the rate of growth is commensurate with wastewater infrastructure capacity	Capacity of wastewater infrastructure relative to the forecast flows	(a) Wastewater infrastructure capacity is never a constraint on planned rate of development	SEA
2.6 To meet ecological, chemical and quantitative status objectives assigned for surface waters, ground waters and protected areas. To achieve "good surface water status" and "good groundwater status" by December 2015	The strategy will be compatible with achieving good quality status	Length of river of 'good' or 'fair' chemical and biological water quality	(a) Meets the government target to increase River Quality Objectives (RQO) in England and Wales Improve water quality down stream of Lenham, Charing and Sellinge STW (current GQA - Grade C) and Bybrook STW - Wye (current GQA – Grade D)..	Target: Regional quality of life, 2002 (SEA)
			(b) Prevent deterioration in the quality of waters classified as "good" ⁷ in the current LEAP.	Water Framework Directive
			(c) Achieve good ecological status in all water bodies by 2015	
3.0 Flood risk management				
3.1 To ensure that new development does not increase flood risk and protect the capacity and integrity of current flood storage areas unless acceptable alternative areas are agreed.	The Strategy will avoid increased flood risk and protect the capacity of floodplain	Flow and level at key locations. Flood extent	(a) No new development on previously undeveloped land in floodplain unless proved to have no adverse impact or a comprehensive compensatory package is provided	SEA PPG25 Defra high level target 12
3.2 To ensure that the standard of service for flood defence is maintained at a level appropriate for the current and	The Strategy will ensure the standard of defence is	Standard of service in existing urban/rural areas Number of properties at risk	(a) Maintain standard of service (i.e. allow no increase in flood risk) to existing settlements/developments, excepting impact of climate change.	SEA Defra FCDPAG3

Objective	Assessment Criteria	Indicators	Targets (statutory/desirable)	Derived from
future landuse	maintained for existing and new developments	from flooding (1% or greater)	(b) Where economic, strategy would also maintain standard of service for existing settlements/developments, mitigating the impact of climate change.	EA Kentish Stour LEAP 2000 Issue 12
3.3 To limit / reduce run-off effects of development for all zones and control where possible through the use of sustainable drainage systems	The Strategy will seek to avoid development that would increase run off	Area of new development incorporating SUDS Flow and level at key locations	(a) All new developments to incorporate SUDS technology to limit runoff to greenfield values for 100% of newly paved areas.	Adapted from SEA
3.4 To provide economically, technically and environmentally sound and sustainable flood defence measures	The strategy will include measures for the sensitive management of river catchments,	Quantity of river and floodplain enhanced or restored compared with quantity modified for development.	(a) No loss of existing floodplain or of existing semi-natural habitats within or associated with the floodplain.	None specific
			(b) Any loss of existing semi-natural habitats within or associated with the floodplain, to be replaced by at least twice the area of recreated habitat.	None specific
4.0 Biodiversity and the Water Environment				
4.1 To maintain and enhance Ashford's biodiversity interest, particularly where this will deliver the objectives of the UK and Kent Biodiversity Action Plans	The strategy will include measures to ensure that negative impacts on biodiversity are avoided?	Area of those habitats which are of conservation concern ⁸ .	(a) Ensure no net loss to habitats covered by Biodiversity Action Plans (i.e. Grazing Marsh, Reedbed and Open Water). (b) Conserve and enhance existing wildlife habitats in both urban and rural areas;	Kentish Stour LEAP 2000 Issue 6 Kent BAP 1997 FCDPAG5 High level target 9 RPG9 - Policy E2
		Quantity of new wildlife habitat created or improved as a result of strategy	(c) Contribute to meeting targets for creation of wetland habitats under relevant Habitat Action Plans ⁹	
	The strategy will enable the creation and the establishment of connectivity between wildlife corridor(s)	Length of continuous Green Corridors	(d) Contribute to implementation of Green Corridor Action Plan improvements.	SEA
		Extent of wildlife corridors linking aquatic habitats	(e) River maintenance to manage riverside habitat through Ashford sympathetically (including specific measures to enhance Green Corridors). (f) No net loss of linear wildlife features (ditches, hedgerows, river channels) and extend where possible to create links between isolated fragments	

Objective	Assessment Criteria	Indicators	Targets (statutory/desirable)	Derived from
4.2 To maintain and enhance the nature conservation status of the Stour and its tributaries, and promote a healthy fishery and in particular of populations of migratory species including salmonids	The strategy will adopt measures that improve the river habitats for salmonid and cyprinid fisheries	Compliance with directives / standards	(a) Correct marginal / significant failures or the risk of future failure (against Imperative Standards) for river designated under the Freshwater Fish Directive ¹⁰	Freshwater Fish Directive Regulations 2003 SI 2003/1053
		Naturalness of river channel and health of fisheries	(b) All flood defence schemes to consider fisheries issues	EA Kentish Stour LEAP Issue 7
			(c) Improve the recruitment of salmonids through location and enhancement of spawning areas.	
			(d) One reach of the Great Stour developed as a self sustaining native brown trout fishery as part of overall strategy	
4.3 To Maintain and enhance the conservation status of those species and habitats of national or international importance, which are dependent upon the water environment	The strategy will avoid adverse impacts to water – related sites of high ecological value	Designated areas affected by development in favourable and unfavourable condition Number and hectares designated as a SSSI, SAC, SNCI, LNR affected by water-related development issues	(a) No significant direct, indirect or cumulative adverse impacts on designated sites including those down stream sites outside study area.	Conservation (Natural Habitats &c) Regulations 1994 CRoW Act 2002 Local Planning Policy
			(b) No new development on sites which support Protected, rare, scarce or locally important habitats and species, unless shown to be unavoidable.	SEA
			(c) Where habitat loss can not be avoided, provide replacement habitat of equivalent or better value	None specific

NOTES TO TABLE

¹ The Office of Water Services (OFWAT) has introduced a security of supply indicator (SoSI) to measure at company level the size of any deficit in headroom in a water resource zone and the proportion of customers exposed to that deficit. Thus a company with no water would have an index of 0 whilst one with sufficient resources to meet all demands in all zones would rate 100. Companies with less than 100 would need to improve supplies

² May 2003 CAMS Technical document gives long term average monthly river flows at Wye and Horton gauging stations. River flows range from 0.9M³/S in the summer – 4.1 M³/S in the winter. Flow conditions and availability for the principal gauging points between 1980 and 2001 are given below. Source Stour CAMS Technical Document (June 2003)

Gauge	River	Period which data available	Average Flow MI/d		Q95 Flow (1980 -2001) MI/d	
			1980 -2001	duration of record	1980 -2001	duration of record
Vauxhall	Stour	4/84-4/00	276	N/a	82	N/a
Horton	Stour	10/64 - present	273	280	82	88
Wye	Stour	10/62 - present	205	196	47	46
Chart Leacon	Stour	1/80 -present	51	N/a	8.5	N/a
South Willesborough	Stour	12/75 - present	64	65	6.0	5.0

³ River Quality Objectives (RQOs) are based on River Ecosystem (RE) Classification for long term targets reflecting chemical water quality (based on GQA) used as targets for water quality. They are used to set conditions in all licences. 7 measures are used as indicators of the health of the rivers and have been grouped into the River Ecosystem Classification.

⁴ Appropriate Treatment. The EA considers appropriate treatment for discharges to freshwater (inland waters and groundwaters) to be dependent upon the size of the discharge relative to the receiving watercourse or aquifer. The treatment will typically be one of the following: septic tank, rotating biological contactor (RBC), trickling filter, activated sludge plant, reed bed or equivalent system. For discharges to estuarine and coastal waters, given the dilution and dispersive characteristics of such waters, a minimum requirement will normally be screening or equivalent to retain aesthetically objectionable solids. Depending on location of the discharge, higher levels of treatment may be required to meet statutory quality objectives. The EA is in the process of determining what constitutes appropriate treatment on the basis of local environmental needs. Water companies' scheme by scheme costs will need to reflect the Agency's requirements and investment will need to be programmed so as to ensure that the statutory deadline of 31 December 2005 is met.

⁵ The Urban Waste Water Treatment Directive requires Member States to review designations of eutrophic sensitive areas every four years. Once an area has been identified, sewage treatment works greater than 10,000 pe discharging into the designated areas are required to meet the Directive's treatment standards for nutrient removal, unless it can be demonstrated that the removal will have no effect on the level of nitrification. In the case of new and extended designations, nutrient removal will have to be installed by the end of 2004.

⁶ Water Quality - Sewage Treatment in the UK: Sensitive Areas July 2003 (Defra website)

Sensitive Areas - Water bodies can be identified as Sensitive Areas on three grounds:

- (a) Where they are found to be eutrophic [1] or where they may become eutrophic in the near future if protective action is not taken.
- (b) Where they exceed or could exceed a specified concentration of nitrate - to protect water supply sources and/or the environment.
- (c) Where discharges affecting them are subject to more than secondary treatment to comply with the standards of other Directives.

Where required, more stringent treatment than secondary (tertiary) treatment is applied to sewage to protect Sensitive Areas. Tertiary treatment can be a variety of different types of treatment, as explained below. Sewage treatment service providers and the environmental regulators work together to assess what improvements and funding is needed.

Water quality standards stipulated under the UWWTD for water coming out of sewage treatment works:

Determinant	Pop>10,000	Pop>100,000	Minimum reduction
BOD (95%ile)	25 mg/l ⁻¹		70-90%
COD (95%ile)	125 mg/l ⁻¹		75%
Total Nitrogen (rolling averages)	15 mg/l ⁻¹	10 mg/l ⁻¹	
Total Phosphorus (rolling averages)	2 mg/l ⁻¹	1 mg/l ⁻¹	

Sensitive Areas identified under criteria (a) and/or (b)

Where Sensitive Areas are identified under criteria (a) and/or (b) additional treatment is required where they are affected by discharges from sewage works serving communities with populations greater than 10,000. The additional treatment involves reducing levels of nitrogen and/or phosphorus in discharges to standards set in the Urban Waste Water Treatment Directive within seven years of identification of these Sensitive Areas.

Waters are reviewed every four years (the last review was in 2001) to confirm the status of existing Sensitive Areas and to determine if further water bodies conforming to the criteria should be identified as Sensitive Areas. Reviews are conducted by the environmental regulators: for England and Wales the Environment Agency; for Scotland the Scottish Environment Protection Agency; and for Northern Ireland the Environment and Heritage Service of the Department of the Environment. From the finding of these reviews recommendations are made to Ministers who make identifications of Sensitive Areas.

Sensitive Areas identified under criterion (c)

Where Sensitive Areas are identified under criterion (c) the water bodies will have been previously designated for the purposes of other Directives and a requirement for more than secondary treatment already established through a need to meet the standards of the other Directives. The timing required for tertiary treatment will vary according to the provisions set in the individual Directives and the type of additional treatment will depend on the particular pollutants the other Directives are guarding against. For example, where necessary, disinfection will be applied to discharges affecting waters identified under the Bathing Waters or Shellfish Waters Directives

⁷ Until definitions of good ecological and chemical status under the Water Framework Directive are available, the prevention of deterioration will need to be based on the current status of biological and chemical quality.

⁸ Based on Habitats subject to Habitat Action Plans in the Kent BAP, including: woodland and scrub, wood pasture & historic parkland, old orchards, hedgerows, lowland farm, urban habitats, acid grassland, neutral and marshy grassland, chalk grassland, heathland and mire, grazing marsh, reedbeds, rivers and streams, and standing water.

⁹ Biodiversity Action Plans require a range of national and local authorities to reduce threats and impacts to sites and species. Water management has been identified as the third most significant threat facing BAP species and habitats, after agriculture and inappropriate habitat management.

¹⁰ Directive 78/659 on the quality of fresh water supporting fish life. This Directive sets quality standards for two categories of water: suitable for salmonids (salmon, trout) and suitable for cyprinids (coarse fish). An annex sets out parameters which are either imperative (I) or guide (G) values for each type of water. Member states must set standards no less stringent than the I values and must endeavour to comply with the G values. The values are to be found in the Surface Waters (Fishlife) (Classification) Regulations 1997 (SI 1997/1331). The parameters are as follows:

temperature
dissolved oxygen
pH
suspended solids

biochemical oxygen demand
total phosphorus
nitrates
phenolic compounds
petroleum hydrocarbons
non-ionised ammonia
total ammonium
total residual chlorine
total zinc
dissolved copper

The appraisal of intervention options against this criterion is limited due to the fact that this project only has the SIMCAT model available as a tool to predict impacts upon water quality. The SIMCAT model measures BOD, Ammonia and Phosphorous only (standard sewage effluent parameters), while the Freshwater Fish Directive sets out a wider list of parameters with Imperative and guideline standards. Whilst it may be possible to infer impacts of development options on water quality and whilst it is important to ensure compliance over the study period, any modelling against standards set out by the Freshwater Fish Directive Regulations is beyond the scope of this project.