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Technical note

Project	Basingstoke WCS Phase 2	**Date**	30 March 2010
Note	Final River Basin Management Plan report update	**Ref**	WUWCSB fRBMP
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1 WFD Classification

1.1 In June 2009 the Environment Agency concluded the consultation period for the draft River Basin Management Plan for the Thames River Basin Management Plan. The draft plan recorded the current state of the water environment in the south west river basin, with classification of water bodies undertaken in accordance with the new methodology of the Water Framework Directive.

1.2 Following the consultation of the dRBMP, they were adopted as the first RBMP in December 2009, with the aim of meeting the main environmental objectives by December 2015. RBMPs will now be reviewed and updated every six years (i.e. 2021, 2027). The Environment Agency expects spatial planning to take the RBMP's into account through Sustainability Appraisals by incorporating evidence from the RBMP studies into the assessment.

1.3 The WFD classifications for watercourses within the final issued Basingstoke WCS Phase 2 Report are no longer consistent with the final River Basin management Plan, and this technical note has been provided to summarise the changes and provide the most up to date information. This information has been obtained from the published RBMP available on the Environment Agency's website.

1.4 The WFD watercourse classifications found in Table 1-1 and Table 1-2 have been taken from:

- The Environment Agency's website: What's in Your Backyard, Water Framework Directive – River Basin Management Plans – Rivers Datasearch, 2010[1].

1 http://maps.environment-agency.gov.uk/wiyby/dataSearchController?lang=_e&textonly=off&topic=wfd_rivers

- The Environment Agency's publication: River Basin Management Plan – Thames River Basin District, Appendix B – Water Body Status Objectives, 2009[2].

1.5 A comparison between these classifications and those within the final report can be found in Table 1-3, Table 1-4 and Table 1-5.

2 http://wfdconsultation.environment-agency.gov.uk/wfdcms/en/thames/Intro.aspx

Waterbody Name	Water Body ID	Overall Physiochemical Status (EcoGen)	Overall Biological Status (EcoBio)	Overall HM Status (EcoHM)	Overall Ecological Status (EcoClass)	Typology Description	Ecological Status Objective (EcoObj)
Vyne Stream	GB106039017110	●	●	●	●	Low, Small, Calcareous	Good Ecological Potential by 2027
Bow Brook d/s Vyne Stream	GB106039017140	●	○	●	●	Low, Small, Calcareous	Good Ecological Status by 2027
Bow Brook u/s Vyne Stream	GB106039017160	●	●	●	●	Low, Small, Calcareous	Good Ecological Status by 2027
Lyde	GB106039017100	●	●	●	●	Low, Small, Calcareous	Good Ecological Status by 2015
Loddon Containing Basingstoke STW	GB106039017080	●	●	●	●	Low, Small, Calcareous	Good Ecological Potential by 2027
Loddon Confluence with Lyde to Confluence with Bow Brook	GB106039017150	●	●	●	●	Low, Small, Calcareous	Good Ecological Potential by 2027
Loddon Bow Brook Confluence to Blackwater Confluence	GB106039017330	●	●	●	●	Low, Medium, Calcareous	Good Ecological Status by 2027
Loddon d/s Blackwater	GB106039023160	●	●	●	●	Low, Medium, Calcareous	Good Ecological Status by 2027

Table 1-1: WFD Overall Classification from final River Basin management Plan

Symbol	Status
	High
	Not High
	Good
	Moderate
	Poor
	Bad
	Not yet assessed
	Other

		Biological				Physio-Chemical			
Waterbody Name	**Water Body ID**	**Diatoms**	**Macrophytes**	**Macro-Invertebrates**	**Fish**	**Dissolved Oxygen**	**pH**	**Phosphate**	**Ammonia**
Vyne Stream	GB106039017110			●		●	●	●	●
Bow Brook d/s Vyne Stream	GB106039017140					●	●	●	●
Bow Brook u/s Vyne Stream	GB106039017160				●	●	●	●	●
Lyde	GB106039017100			●		●	●	●	●
Loddon Containing Basingstoke STW	GB106039017080	●		●	●	●	●	●	●
Loddon Confuence with Lyde to Confulence with Bow Brook	GB106039017150	●				●		●	●
Loddon Bow Brook Confluence to Blackwater Confluence	GB106039017330	●		●	●	●	●	●	●
Loddon d/s Blackwater	GB106039023160			●	●	●	●	●	●

Table 1-2: Biological and Physico-Chemical Water Body Classifications from final River Basin Management Plan

	Draft RBMP		Final RBMP	
Waterbody Name	**Overall Physiochemical Status (EcoGen)**	**Overall Biological Status (EcoBio)**	**Overall Physiochemical Status (EcoGen)**	**Overall Biological Status (EcoBio)**
Vyne Stream	●	●	●	●
Bow Brook d/s Vyne Stream	●		●	
Bow Brook u/s Vyne Stream	●		●	●
Lyde	●	●	●	●
Loddon Containing Basingstoke STW	●	●	●	●
Loddon Confluence with Lyde to Confluence with Bow Brook	●		●	●
Loddon Bow Brook Confluence to Blackwater Confluence	●	●	●	●
Loddon d/s Blackwater	●	●	●	●

Table 1-3: Overall Status Classification Comparison

	Draft RBMP				Final RBMP			
Waterbody Name	**Diatoms**	**Macrophytes**	**Macro-Invertebrates**	**Fish**	**Diatoms**	**Macrophytes**	**Macro-Invertebrates**	**Fish**
Vyne Stream			●				●	
Bow Brook d/s Vyne Stream								
Bow Brook u/s Vyne Stream								●
Lyde			●				●	
Loddon Containing Basingstoke STW			●	●	●		●	●
Loddon Confluence with Lyde to Confluence with Bow Brook					●			
Loddon Bow Brook Confluence to Blackwater Confluence			●	●	●		●	●
Loddon d/s Blackwater			●	●			●	●

Table 1-4: Biological Classification Comparison

	Draft RBMP				Final RBMP			
Waterbody Name	**Dissolved Oxygen**	**pH**	**Phosphate**	**Ammonia**	**Dissolved Oxygen**	**pH**	**Phosphate**	**Ammonia**
Vyne Stream	●	●	●	●	●	●	●	●
Bow Brook d/s Vyne Stream	●	●	●	●	●	●	●	●
Bow Brook u/s Vyne Stream	●	●	●	●	●	●	●	●
Lyde	●	●	●	●	●	●	●	●
Loddon Containing Basingstoke STW	●	●	●	●	●	●	●	●
Loddon Confuence with Lyde to Confulence with Bow Brook	●	●	●	●	●		●	●
Loddon Bow Brook Confluence to Blackwater Confluence	●	●	●	●	●	●	●	●
Loddon d/s Blackwater	●	●	●	●	●	●	●	●

Table 1-5: Physico-Chemical Classification Comparison

1.6 Conclusions

- The physico-chemical classification (Biochemical Oxygen Demand, Ammonia, phosphate and dissolved oxygen) of the waterbodies in the study area have not changed between the draft RBMP and the final RBMP. Therefore the conclusions of the report that refer to no deterioration of physico-chemical water quality, and achieving good ecological status for physico-chemical water quality remain unaltered.

- The biological status of three reaches of the River Loddon from the Lyde confluence to the Blackwater confluence (Loddon containing Basingstoke STW, Loddon Confluence with Lyde to Confluence with Bow Brook and Loddon Bow Brook Confluence to Blackwater Confluence) have been reported to be poor following the inclusion of diatom survey results, which has resulted in the overall ecological status for two of these reaches (Loddon Confluence with Lyde to confluence with Bow Brook, and Loddon Bow Brook to Blackwater Confluence) being downgraded from Moderate to Poor (Loddon containing Basingstoke STW was already reported as being poor because of a poor reported fisheries status.

- The changes confirm the original report conclusions with respect to sewage treatment and water quality, as repeated below, and add further emphasis to the requirement for ongoing monitoring and risk assessment of water quality and ecology.

  The WCS has principally assessed whether growth would cause deterioration of the current water quality and ecology in the River Loddon catchment. The water quality assessment has concluded that the change in pollutant load due to population growth is unlikely to put significant additional stress on achieving good status, and none of the growth scenarios examined would cause a deterioration in WFD physicochemical class[3]. The study has identified a small, but unquantifiable risk that minor deterioration in phosphate levels due to growth may cause a deterioration in diatom quality and lead to a subsequent deterioration in biological classification. Despite the extensive survey and modelling work undertaken over the last three years, it is impossible to quantify this risk with modelling, and an ongoing risk assessment and monitoring procedure is recommended to manage this risk. Based on this assessment, the WCS has shown that planned growth of between 14,800 and 18,900 dwellings can be accommodated without causing significant additional pressure on Water Framework Directive status, but that there are residual risks that need to be managed through the planning process.

  To manage the residual risks we recommend ongoing ecological surveys to monitor the impact of the development over time and create a long term (10-year) record to allow correlation of ecology, water quality and hydrology. Annual surveys for macrophytes (Mean Trophic Rank, Mean Flow Rank and

3 There may be deterioration in numerical water quality, but there will not be deterioration of class

Loddon Pondweed), aquatic macroinvertebrates (BMWP, ASPT and LIFE (F)) and diatoms are recommended.