

## **Appendix B Data Register**

## Appendix B – Data Register

Document ID	Title	Format	Provided by
9T6121_001	Planning for Water in Worcestershire – Draft (February 2008)	Report – digital	WFDC
9T6121_002	Flood Watch Areas	Shapefiles – digital	EA (Paul Flynn)
9T6121_003	Mastermap Tiles	CD x 1	WFDC
9T6121_004	Pictometry	CD x 4	WFDC
9T6121_005	LiDAR	CD x 1	EA (Mike Plant)
9T6121_006	Stour & Severn Models	CD x 1	EA (Pete Restorick)
9T6121_007	Source Protection Zones	PDF	EA (Paul Flynn)
9T6121_008	Groundwater Protection Zones	PDF	EA (Paul Flynn)
9T6121_009	Sewer Network Schematic	Printed Screen Dump	STW (Matt Foster)
9T6121_010	Wastewater Treatment Infrastructure	Printed Screen Dump	STW (Matt Foster)
9T6121_011	Water Supply Network Schematic	Printed Screen Dump	STW (Matt Foster)
9T6121_012	Water Supply Infrastructure	Printed Screen Dump	STW (Matt Foster)
9T6121_013	Ordnance Survey Mapping (10K, 25K and 50K)	TIFF tiles	WFDC (Jon Elmer)
9T6121_014	Wyre Forest District Adopted Local Plan, January 2004	Report	WFDC
9T6121_015	Wyre Forest District Local Development Framework, Core Strategy Issues and Options Paper, January 2008	PDF	WFDC (Website)
9T6121_016	Potential Development Sites	Shapefiles	WFDC
9T6121_017	Updates to Development Sites	Shapefiles	WFDC
9T6121_018	NFCDD data	Shapefiles	EA
9T6121_019	River Quality Data (GQA)	Excel Spreadsheet	EA (Website)
9T6121_020	River Quality Data (RQO)	Scanned table	EA (Dawn Karle)
9T6121_021	River Severn CFMP	PDF	EA (Website)

Document ID	Title	Format	Provided by
9T6121_022	Employment Land Availability Assessment, April 2008	PDF	WFDC (Website)
9T6121_023	Residential Land Availability Assessment, April 2008	PDF	WFDC (Website)
9T6121_024	Severn Trent Water, Draft Water Resource Management Plan and Non-Technical Summary	PDF and Report	STW (Website and Andrew Marsh)
9T6121_025	Severn Trent Water, Strategic Direction Statement – Focus on Water	PDF Report	STW (Website)
9T6121_026	The Potential Impacts of Climate Change in the West Midlands	PDF	Internet
9T6121_027	The Worcestershire Middle Severn Catchment Abstraction Management Strategy, December 2006	PDF	EA (Website)
9T6121_028	Severn Corridor Catchment Abstraction Management Strategy (CAMS)	PDF	EA (Website)
9T6121_029	A Sustainable Future for the West Midlands – A Regional Sustainable Development Framework, Version Two, July 2006	PDF	Internet
9T6121_030	Wilden Marsh and Meadows SSSI Restoration – <i>Environment Agency Scoping Report, February 2007</i>	Report	EA via WFDC
9T6121_031	Drought Plan for the Midlands Region Upper Severn Area	PDF	EA (Website)
9T6121_032	West Midlands Regional Flood Risk Appraisal, Final Report, October 2007	PDF	WMRA (Website)
9T6121_033	West Midlands Regional Spatial Strategy Phase Two Revision – Draft, Preferred Option, December 2007	PDF	WMRA (Website)
9T6121_034	Wilden Marshes and Meadows SSSI Restoration: Environmental Scoping Report, February 2007	Report	EA (Website)
9T6121_035	Worcestershire County Plan, 2005	Report	Internet
9T6121_036	Worcestershire County Emergency Flood Plan, 2005	PDF	Internet
9T6121_037	Regional Spatial Strategy for the West Midlands, January 2008	PDF	WMRA (Website)
9T6121_038	Environment Agency High Level Target 3: Emergency Exercises and Emergency Plans' Report to DEFRA April 2005	PDF	Internet
9T6121_039	SHLAA Sites	Shapefiles	WFDC (Jon Elmer)
9T6121_040	Greywater: an information guide	PDF	EA (Website)
9T6121_041	Harvesting rainwater for domestic uses: an information guide	PDF	EA (Website)
9T6121_042	Water Efficient Solutions: The Practical Guide for Industry, Commerce and the Public Sector, 2008	PDF	Waterwise (Website)

Document ID	Title	Format	Provided by
9T6121_043	Source Protection Zones	GIS Shapefiles	EA (Liane Auliffe)
9T6121_044	NFCDD Defence Data with Condition	Excel Spreadsheets x3	EA (Yolande Jones)
9T6121_045	GQO assessment locations	Excel Spreadsheet	EA (Dawn Karle)
9T6121_046	Greenfield/Brownfield classifications for SFRA sites	Excel Spreadsheet	WFDC (Jon Elmer)
9T6121_047	Regionally Important Geological Sites (RIGS)	Shapefile and Excel Spreadsheet	WFDC (Jon Elmer)
9T6121_048	Sites of Special Scientific Interest (SSSIs)	Shapefile	WFDC (Jon Elmer)
9T6121_049	Landscape Protection Areas (LPAs) - no longer in use by Final publication of report.	Shapefile	WFDC (Jon Elmer)
9T6121_050	Areas of Great Landscape Value	Shapefile	WFDC (Jon Elmer)
9T6121_051	National Nature Reserves (NNR)	Shapefile	WFDC (Jon Elmer)
9T6121_052	Local Nature Reserves (LNR)	Shapefile	WFDC (Jon Elmer)
9T6121_053	Special Wildlife Sites (SWS)	Shapefile	WFDC (Jon Elmer)
9T6121_054	Flood Watch Area 103	Shapefile	EA (Paul Flynn)
9T6121_055	ISIS files for Severn	.DAT files	EA (Dan Trewin)
9T6121_056	Node locations - Kidderminster	MapInfo Files (Some)	EA (Pete Restorick)
9T6121_057	Node Locations - Kidderminster	Map Info files (Some)	EA (Rhys McCarthy)
9T6121_058	Node Locations - Kidderminster	Map Info files (Some)	EA (Pete Restorick)
9T6121_059	Wolverley FRA	PDF	EA (Sally Avard)
9T6121_060	Node Locations and water levels through Kidderminster (old model with incorrect embankment heights)	.csv .shp	EA (Pete Restorick)
9T6121_061	ISIS files for Wolverley Project	.dat and .ief files	EA (Pete Restorick)
9T6121_062	Data on river flows, sewage works and dilution – summary table	Email	EA (Dawn Karle)
9T6121_063	STW Waterlines	Shapefile	STW (Dawn Williams)
9T6121_064	STW Sewerlines	Shapefile	STW (Dawn Williams)

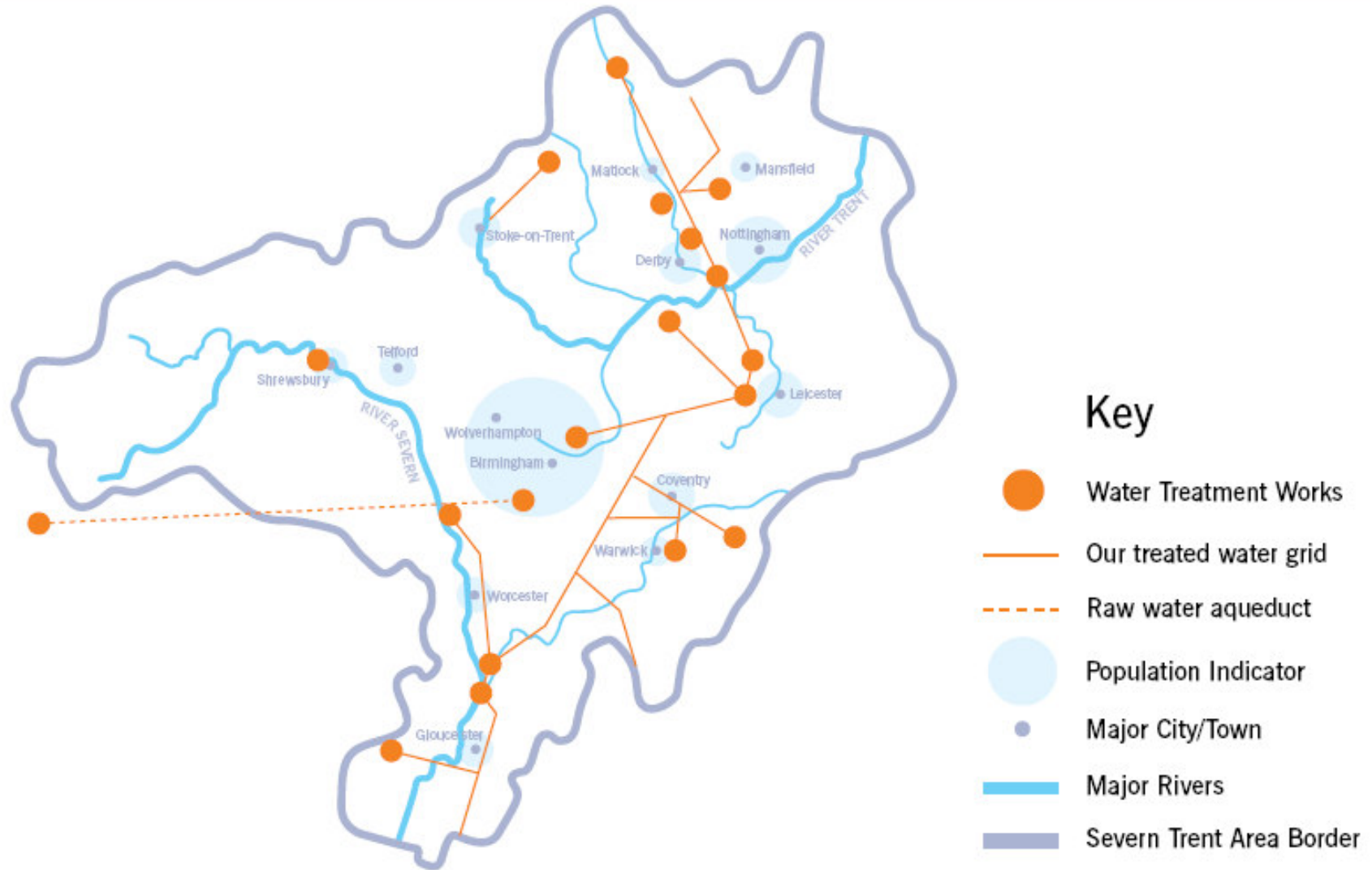
<b>Document ID</b>	<b>Title</b>	<b>Format</b>	<b>Provided by</b>
9T6121_065	DWF Flow Data	Excel	STW (Dawn Williams)
9T6121_066	Epop JR08 Data	Excel	STW (Dawn Williams)
9T6121_067	Additional Epop and DWF Data	Excel	STW (Dawn Williams)
9T6121_068	AIMS Postcodes (capital schemes)	MapInfo	STW (Tim Smith)
9T6121_069	STW DAP Areas	MapInfo	STW (Tim Smith)
9T6121_070	STW DAP Model Availability	Excel	STW (Tim Smith)
9T6121_071	FLOODS2 Database	Excel	STW (Tim Smith)
9T6121_072	AIMS Postcodes (capital schemes) - updated	MapInfo	STW (Tim Smith)
9T6121_073	Capital Schemes Process Map	PDF	STW (Tim Smith)
9T6121_074	DAP report notes	Word	RH (Rachel Ranger)
9T6121_075	STW Wastewater Comments	Excel	STW (Tim Smith)

# Appendix C

## Water Supply Schematics

## Severn Trent Water - Strategic Treated Water Grid

Providing safe, clean drinking water to 7.4 million customers



## **Appendix D Guidance**



## GUIDANCE NOTE: DEALING WITH SURFACE WATER

### 1. Requirements of PPS25 regarding surface water management

Urban developments can have a big effect on the quantity and speed of surface water runoff. By replacing vegetated ground with buildings and paved areas the amount of water being absorbed into the ground is severely reduced, therefore increasing the amount of surface water present. This additional surface water increases the demand on drainage systems in built up areas. Traditional drainage systems are designed to get rid of the water as quickly as possible to prevent flooding in the built up area. This can cause problems, particularly downstream, by altering the natural flow patterns of the catchment. In addition, water quality can be affected due to pollutants from the built up areas being washed into the watercourse due to the lack of treatment of the water. One technique which can reduce this problem is the use of Sustainable Drainage Systems (SUDS).

### 2. What are SUDS?

Sustainable Drainage Systems (SUDS) are techniques designed to control surface water runoff before it enters the watercourse. They are designed to mimic natural drainage processes, along with treating the water to reduce the amount of pollutants getting into the watercourse. They can be located as close as possible to where the rainwater falls and provide varying degrees of treatment for the surface water, using the natural processes of sedimentation, filtration, adsorption and biological degradation.

### 3. The Purpose of SUDS

SUDS are more sustainable than traditional methods because they can:

- Manage the speed of the runoff
- Protect or enhance the water quality
- Reduce the environmental impact of developments
- Provide a habitat for wildlife
- Encourage natural groundwater recharge.

In addition, they can be used to create more imaginative and attractive developments and are designed so that less damage is done, than conventional systems, if their capacity is exceeded.

### 4. Where are SUDS appropriate?

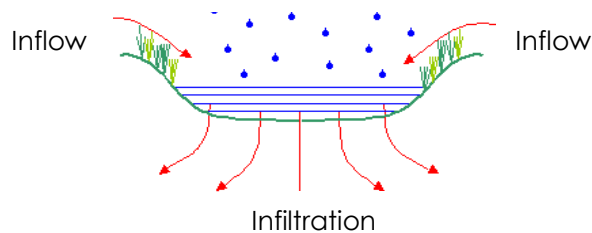
Surface water management using SUDS can be implemented at all scales and in most urban settings, ranging from hard-surfaced areas to soft landscaped features, even if there is limited space. Most techniques use infiltration but even if the area has little or no infiltration SUDS can still be used in the form of green roofs, permeable surfaces, swales and ponds.

## 5. The different types of measures

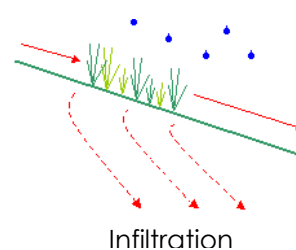
SUDS are made up of one or more structures built to manage surface water runoff, and used in conjunction with good site management. There are five general methods, listed below. These are shown in hierarchical order in terms of the 'management train', described in the CIRIA SUDS Manual, 2007 (Prevention → Source Control → Site Control → Regional Control). The techniques that are higher in the hierarchy are preferred to those further down so that prevention and control of water at source should always be considered before site or regional controls, such as balancing ponds and wetlands.

- i. **Prevention** – this can involve minimizing paved areas, replacing tarmac with gravel, rainwater recycling, cleaning and sweeping, careful disposal of pollutants, and general maintenance.
- ii. **Filter strips and swales** – these are vegetated surface features that drain water evenly off impermeable areas. Swales (figure 1) are long shallow channels whilst filter strips (figure 2) are gently sloping areas of ground. Both of these mimic natural drainage by allowing rainwater to run in sheets through vegetation, slowing and filtering the flow.

**Figure 1 - Cross-section of a Swale**

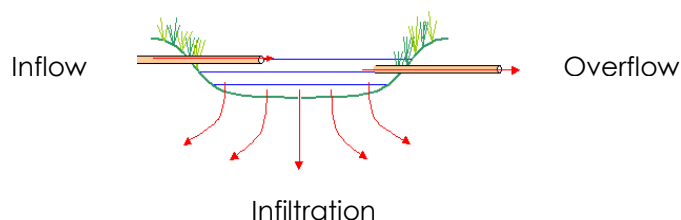


**Figure 2 - Cross-section of a Filter Strip**

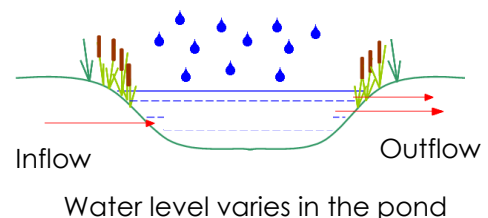


- iii. **Permeable surfaces and filter drains** – these are devices that have a volume of permeable material below ground to store surface water. Runoff flows to this storage area via a permeable surface.
- iv. **Infiltration devices** – these enhance the natural capacity of the ground to store and drain water. They include soakaways, infiltration trenches and infiltration basins. See figure 3.
- v. **Basins and ponds** – these are areas for storage of surface runoff e.g. floodplains, wetlands, and flood storage reservoirs. They can be designed to control flows by storing water then releasing it slowly once the risk of flooding has passed. See fig 4.

**Figure 3 Cross-section through an Infiltration Basin**



**Figure 4 - Cross-section of a Pond**



## 6. References

Information taken from:

- *Planning Policy Statement 25 – Development and Flood Risk*, December 2006
- [www.ciria.org/suds](http://www.ciria.org/suds)
- *The SUDS Manual, 2007 (CIRIA C697)*

## **Appendix E Additional Data**

## River Severn final RBMP summary

Waterbody Name	Current Overall Potential	Overall Status Objective	Protected Area Designation	Catchment (RBMP Map Code)
<b>RIVERS</b>				
River Severn (confluence of River Worfe to confluence of River Stour)	Moderate	Good by 2027	Drinking Water Protected Area, Freshwater Fish Directive, Nitrates Directive	Worcestershire Middle Severn (R4)
River Stour (confluence of Smestow Brook to confluence River Severn)	Poor	Good by 2027	Freshwater Fish Directive, Nitrates Directive, Urban Waste Water Treatment Directive	Worcestershire Middle Severn (R25)
Drakelow Brook (source to confluence with River Stour)	Good	Good by 2015	Nitrates Directive	Worcestershire Middle Severn (R43)
Blakedown Brook (source to confluence with River Stour)	Moderate	Good by 2027	Freshwater Fish Directive, Nitrates Directive	Worcestershire Middle Severn (R45)
Hartlebury Brook (source to confluence with River Severn)	Moderate	Good by 2027	Nitrates Directive	Worcestershire Middle Severn (R19)
Hoo Brook (source to confluence with River Stour)	Moderate	Good by 2027	Nitrates Directive	Worcestershire Middle Severn (R20)
Dowles Brook (source to confluence with River Severn)	Poor	Good by 2027	Freshwater Fish Directive, Nitrates Directive	Worcestershire Middle Severn (R21)
<b>CANALS</b>				
Staffordshire & Worcester Canal, Stourbridge Canal to River Severn	Moderate	Good by 2027	Nitrates Directive	Staffordshire & Worcester Canal, Stourbridge Canal to River Severn (Ca5)
<b>GROUNDWATER</b>				
<p>Please refer to Appendix B of the final River Severn RBMP  (<a href="http://wfdconsultation.environment-agency.gov.uk/wfdcms/en/severn/Intro.aspx">http://wfdconsultation.environment-agency.gov.uk/wfdcms/en/severn/Intro.aspx</a>)</p>				

**Adapted from Appendix B of the final River Severn RBMP, December 2009**

## **Appendix F EA Sign Off Letter**

Mr Jonathan Elmer  
Wyre Forest District Council  
Planning Policy  
Duke House  
Clensmore Street  
Kidderminster  
DY10 2JX

**Our ref:** SV/2010/103971/OR-  
01/PO1-L03  
**Your ref:**  
**Date:** 15 March 2010

Dear Sir

### **Water Cycle Strategy - Final Report March 2010**

We are of the view that the Water Cycle Strategy (WCS) as revised and amended in March 2010, provides a useful part of the evidence base relating to water infrastructure. It highlights the constraints and opportunities that arise from the proposed scale and broad location of growth within the District and provides a basis for progressing the formation of policies and guidance constituting the Local Development Framework (LDF).

The Core Strategy (CS), which will provide the local planning authority's (LPA) overarching strategy, should have regard to these recommendations and include policies or references (hooks) to ensure the timely provision of the necessary water related infrastructure. Policies must therefore be carefully designed and worded to ensure that they achieve this, while being deliverable and enforceable.

We understand that due to recent build and extant permissions, water related infrastructure capacity is not anticipated to be an issue of concern for at least the first 5 years of the LDF. This should be made explicit within the CS as part of the justification for deliverability of the CS.

We note that overall, water resources and water supply are not envisaged by STWL to be a constraint to development. However, due to the fact that the Report states that water resources are generally under pressure, it is essential that the LPA carefully monitors the situation to ensure that STWL mitigation measures are effective. To help facilitate such effectiveness, policies including challenging targets for water efficiency could be included in the LDF documents and adopted as soon as possible to ensure that implementation of the CS is not compromised.

Close communication with STWL is essential for the delivery of infrastructure to accommodate growth at the appropriate time without adverse impact on the environment, amenity, and the implementation of the Council's vision for the district.

Environment Agency  
Hafren House, Welshpool Road, Shelton, Shrewsbury, Shropshire, SY3 8BB.  
Customer services line: 08708 506 506  
Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

Cont/d..

The issue of the current lack of capacity and associated environmental risk at the rural WwTW's (eg Upper Arley, Chaddesley Corbett, Blakedown and Roundhill) needs to be addressed by the LPA in the CS and subsequent LDF documents, to ensure adequate lead-in times for infrastructure and development.

Likewise, sites affected by foul sewer flooding will need to be addressed in an implementation strategy to ensure that infrastructure is available prior to new development being constructed and occupied. The CS should recognise that such sites are unlikely to be available in the first 5 years of the CS.

In the three main urban areas generally proposed for growth, the performance of the Oldington WwTW at Kidderminster is critical. We note that STWL has identified that it has sufficient capacity for the predicted housing growth for the plan period with current consent standards. A point to note as part of further work on implementation is that changes in legislation and policy may affect the consents to discharge and thus impact on available capacity.

Phasing of sites in relation to available infrastructure capacity therefore needs to be addressed within the LDF process, including the imminent CS, so that development and the environment are not adversely affected.

We support the recommendation "Until upgrade or improvement works are carried out, no development should take place in areas served by sewage treatment works or sewer networks that have been identified as currently operating at, or above, current capacity." The LPA should ensure that this is taken into account in subsequent LDF documents on infrastructure implementation, including the Site Allocations Document and is addressed via appropriate policies.

We support the Recommendation that high level costings should be carried out, as this will contribute to ensuring that the CS, Sites Allocation and Development Control policies can be effectively implemented at the appropriate time without compromising environmental requirements and quality.

We appreciate the difficulties encountered in trying to get detailed information from infrastructure suppliers, however in the absence of such detailed costings, a criteria based policy on infrastructure provision may be an effective tool to aid appropriate delivery. An indication of the policies to address infrastructure constraints as identified in the WCS should also be included in the CS prior to other DPD's being produced.

Yours faithfully

**Mrs Hilary Berry**  
**Senior Planning Officer**

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