

STAFFORD BOROUGH LOCAL DEVELOPMENT FRAMEWORK

MEETING WITH THE ENVIRONMENT AGENCY & STAFFORD BOROUGH COUNCIL

DATE OF MEETING - 13 SEPTEMBER 2007

Officers in Attendance:-

John Beckett	-	Environment Agency
Laura Dawson	-	Environment Agency
Jane Field	-	Environment Agency
Alex Yendole	-	Stafford Borough Council
Naomi Perry	-	Stafford Borough Council

INTRODUCTION

1. John Beckett is a technical flooding specialist in Development Control as well as Development Plans / Local Development Frameworks with responsibility for Planning Policy Statement 25 and Strategic Flood Risk Assessments for the Environment Agency. He has extensive experience of the River Trent catchment area. Laura Dawson is a Development Control specialist and deals with planning applications in areas of flood risk. Jane Field is the planning liaison officer for the Environment Agency covering the Stafford Borough Council area as well as Newcastle-under-Lyme Borough and Cannock Chase. She deals with all Development Control and Local Development Framework / Local Plan issues and Agency responses.

WATER RESOURCES

2. There are relatively limited abstractions in the Stafford Borough area for development purposes. Although there are no major problems in the levels of abstraction Severn Trent Water's infrastructure may need to be extended. Abstraction currently takes place from groundwater and river levels. One issue to be monitored is the low flow levels on the River Penk caused by a combination of water extraction, canal topping up and water transfer out of the river to the surrounding areas. However there is a major problem with abstraction levels affecting the Meir Hills area to the north of Stafford Borough but the Environment Agency does not consider this issue to directly impact on the area because of its location on the edge of Stafford Borough Council. The catchment area flows into Newcastle-under-Lyme Borough. Abstraction licences have a 3 year time limit where previously the abstraction licences were unlimited. The Environment Agency holds details regarding abstraction licences and key figures can be provided when requested. The detailed information on water abstraction licences, points and levels are abstraction are held by the Environment Agency's regional office at Solihull. The key contact for water resource management is Gill Rowe.

3. Water cycle studies may be required in terms of the level of new development coming forward through the Regional Spatial Strategy and Stafford being identified as an Area of Significant Development. It is important to make sure that high levels of water quality are achieved together with appropriate abstraction levels. AY asked for advice in terms of delivering a water cycle study. It is likely that this work would be carried out by consultants. Water cycle studies need to be managed and delivered for whole catchment areas. Although Stafford Borough does not have any direct restrictions on catchment areas it is important to manage changes to the infrastructure correctly.
4. Source Protection Zones have been mapped across all areas including Stafford Borough Council and identify where development is and is not acceptable. Source Protection Zones are categorised into Zone 1 - 3. In Zone 1 no discharge of foul sewage is permitted from any development because of the impact on water resources. In Zone 2 development can take place but mitigation measures must be deployed to reduce impact on water quality. Zone 3 is less sensitive in terms of development locations. Sue Hornby is the key contact and can provide information and maps on Source Protection Zones. Furthermore the Environment Agency has ecological maps and culverting information which can be made available.
5. The Environment Agency monitors the number of abstractions both from ground water areas and from rivers. If abstractions were to stop from rivers there is the possibility that ground water levels would increase, thus leading to increased risks of flooding and putting property at risk. However if abstraction levels increase there may be loss of water flow in certain rivers such as the River Penk. Gill Rowe has full details about abstraction levels across the area but there are no other significant issues for Stafford Borough. The Spittle Brook in Stafford has an aluminium discharge but this is not a major pollution issue. Building Regulations have an impact on water release from new developments, as well as impacting on the location of recycling facilities. The Environment Agency wishes to achieve as much as possible through the Code for Sustainable Housing and Green Standards. Existing movements and spare capacity from water resources needs to be investigated further for the Stafford Borough Council area. The Environment Agency suggested a further meeting be arranged to discuss these issues.

FLOODING

6. The worst area for watercourse flooding in the Stafford Borough Council area is the Sandyford / Marston Brook catchment to the north of Stafford. This is a complex water system creating a number of flooding problems. The flooding is caused by water in the catchment flowing into a narrow and gently sloping brook course. The Environment Agency has commissioned a water model for the Sandyford Brook area to be completed by consultants looking at the detailed hydrological study of the watercourse and the flood plain outputs / levels. It is anticipated that this study will be completed by the end of 2007 / early 2008. Sandyford Brook flows into the River Sow. The water course flows under the Sandon Road to Crooked Bridge Road before flowing to the A513 Weston Road. This is the section of the water course which creates problems

as there is no free outlet. The culverts next to Stafford prison are not big enough to take high volumes of flow, the brook course is too flat and subsidence from the salt mines in the area all contribute to the problems.

7. Following completion of the model it may be necessary to produce a feasibility study before consideration can be given to housing development north of Stafford. The worst flooding problem took place in 2000. Although a series of balancing ponds have been installed this does not prevent the problems experienced by properties on Sandon Road. Flood relief has been improved but further work is required. Nevertheless in comparison, following the 2007 flooding of the River Penk and the River Sow there were no major problems on the Sandyford Brook.
8. Short term analysis shows that the 2007 floods were a 300 year flooding event on the River Penk, although this needs to be confirmed. The River Penk saw a 400 mm water level above the 100 year maximum which would indicate a 300 year event. The River Sow saw a 100 year event, to be confirmed. At Silkmore Lane, the road outside the Co-op supermarket was flooded because of water flowing through Rising Brook and the Silkmore drain. The River Penk was flooded so this meant that the road outside the Co-op supermarket at Silkmore Lane was under water because the water from Rising Brook backed up and could not enter the River Penk. In theory this issue could be solved by raising the road level of Silkmore Lane but this would cause a loss of flood plain storage which would have to be replaced in another location. The Environment Agency's approach is not to build in the flood plain. However if building does take place then additional areas of flood plain need to be created as compensation work by purchasing other land for flood plain when events take place.
9. The problems on Sandyford Brook may not be solved by building a large balancing pond north of Stafford or diverting the water-course around the A513 Weston Road. There are 3 options to assist this situation; 1. A new balancing pool created in order to support water flows within the Sandyford Brook; 2. Channel improvements are carried out; 3. A process of managed retreat by selected housing demolition in the area.
10. Following completion of the hydrological model for Sandyford Brook it is important that the feasibility study is cost effective to pay for improvements to the brook course if new development is brought forward. JBA Consulting are producing the model. The Environment Agency would suggest Atkins, as framework consultants, to deliver the feasibility study, costing £20,000 - £50,000. The option of a cross catchment transfer would move water from the north of Stafford across to Creswell but this would still flow into the River Sow, although this would avoid the Sandyford Brook area.
11. The Environment Agency would require an impact assessment to be carried out on the other catchments if this was to be considered. Clearly disposal of surface water at source needs to be achieved through the new development to improve the situation in this catchment area. By achieving a low level of infiltration rate from housing can be similar to Greenfield infiltration rates. The

12. Jane Field agreed to update the Local Plan tables provided by Naomi Perry.
13. Hixon has poor water drainage in the fields between Hixon and the A51 road as part of the catchment area to Pasturefields Brook due to the topography. Further ground water investigation work need to be carried out in order to establish where the high water table is located. Construction of a balancing pond would not solve the drainage problems because it would simply identify the existing ground water level at the surface. The Environment Agency consider that the area south east of Hixon is best for new development in terms of water drainage and ground water issues. Hixon airfield is potential a good area for new development in terms of ground water and drainage, with the airfield draining into Amerton Brook rather than Pasturefields Brook. However attenuation / balancing waterflows would still be required in this development scenario.
14. There should be no direct discharge from housing development into watercourses because of the resulting impact on flow increases and potential for flooding downstream. All new development should be drained in a sustainable way through the use of soak-aways and on-site balancing ponds. Stafford Borough Council should consider this as a policy objective in the new local development framework across all new developments but especially on larger housing developments. There is a need to use solutions such as Sustainable Urban Drainage Systems in order to achieve equivalent water run-off rates as green field areas, this being a maximum of 4 - 5 litres per second. However it is possible to achieve lower run-off rates through new housing developments where appropriate sustainable urban drainage systems are implemented. Increased run-off rates from development should not occur, natural flow rates should be replicated if at all possible.
15. Provided that new development does not interfere with Flood Zone 3 areas then the Environment Agency are generally content. Sustainable urban drainage systems should be achieved through new development together with the preservation of existing watercourses through Green corridors delivered by an 8 metre wide buffer zone on either side of main rivers, and less distance next to smaller watercourses. Feasibility studies to establish watercourse preservation should be guided by the Environment Agency. If development takes place in Flood Zone 1 it is important that the natural water balance is maintained. All floodplain areas next to watercourses should be avoided in terms of new development. The majority of smaller rivers and streams have a 1 in 1 or 1 in 3 flood flow but nowhere near a 100 year flood scenario evidence in some of the main rivers. The Environment Agency is content with development south and east of Stafford in terms of flood plain impact.

16. The Internal Drainage Board is active in the Stafford Borough area. The principal role of the Internal Drainage Board is to manage the draining of farmland into the River Sow and the River Penk. Development or use of farmland in these river corridors are controlled through the Internal Drainage Board. Farmers and landowners pay additional drainage rates for the Internal Drainage Board to ensure maintenance of such river flows by the farmers. The Internal Drainage Board also deals with discharge rates from new developments into the rivers and watercourses. It is important to include the Internal Drainage Board in the Strategic Flood Risk Assessment work. Contact Halcrow to establish a link with the Internal Drainage Board.
17. The Internal Drainage Board has issues with the Forebridge drain which manages water from the Castlefield's estate near Stafford Castle into the River Sow. The water system at Castlefields is complex. Substantial new housing development can take place at Castlefields so long as the development includes Sustainable Urban Drainage Systems system. For example at the moment the existing housing has water running into a balancing pond which then links to the River Sow. If an extra 1,000 – 2,000 new houses are built at Castlefields there will be the need for additional balancing ponds to be built to address the soakaway implications to the River Sow. Soakaways from roof water flows is essential into the ground in such developments. For the Castlefields area it is important to check the Source Protection Zones using Environment Agency information and further work through hydrological consultants if necessary. Furthermore rainwater flowing onto roads needs to drain into separate ponds in order to solve pollution issues using oil interceptors and other alternative solutions. The Castlefields area requires a detailed hydrological analysis prior to further new housing development but this will depend on funding sources. If a Source Protection Zone Level 1 is identified then new development can take place because of infiltration problems and therefore there is need for a balancing pond. All potential impacts of new development must be taken into account. New drainage outfalls from the Castlefields area will flow into the River Sow near to Victoria Park via the Forebridge drain but this can not take place at a rate any greater than 400 litres per second. It is not possible to increase the flow south of the existing balancing pond because of drainage structure restrictions.
18. Currently there are no flood defences on the River Penk. Flood defences on the River Sow have been constructed for 100 year flood events including through Victoria Park. However it is important to design flood alleviation points. Freeboard is an allowance in new developments for flooding above the 100 year level. Therefore the flood defence work has been established to sustain a 100 year flood event along the river but in addition to these schemes new development then has 'freeboard' added to deal with climate change scenarios. Houses near Silkmore Lane have a freeboard of 1 metre and the flood in 2007 used 400 mm of the 600 mm freeboard so therefore there was no chance of the buildings flooding. New development should provide level for level flood alleviation schemes as well as at least 1 metre freeboard provision.
19. There are IPPC licences in Stafford Borough at Hixon and two in Stafford.

20. Eccleshall has surface water drainage problems flowing into the town centre from farmland to the south. In effect overland flows have increased in severity because of hedgerows being removed. The sewers in the town centre are inadequate and therefore this issue should be addressed by upgrading the size of the sewers and dealing with attention flows via soakaways. It is important to discuss potential new housing development in Eccleshall with Severn Trent Water.
21. Great and Little Haywood has a water surface problem south of Great Haywood where water flows from surrounding farmland under the A51 road through the housing area to the railway and the canal. Further details are available from Severn Trent Water regarding the engineering solution such as a new sewer into the river. However in reality this cannot be achieved because of the financial costs. JMP Consulting have further information in the Westbury View area and its soakaways. A new drainage system into the canal and diverting flows would cost £½+ million, together with the necessary hydrological analysis and modelling required.
22. Although Weston appears to be surrounded by Flood Zone 2 and 3, in reality it is possible to access the village using the A51 road in all flooding scenarios because the road is above the floodplain. Therefore new development could take place to the south and east of Weston, if required.
23. There are drainage problems at Church Eaton, which have been identified through the Environment Agency analysis. There are no flooding problems at Haughton or Great Bridgeford. Gnosall has no flooding problems away from the main Flood Zone 2 and 3 areas which divide Gnosall and Gnosall Heath.
24. Stone has small watercourses flowing from the surrounding hillsides into the River Trent. The Environment Agency advise not building on the head waters of these streams as this could cause problems with water flowing into the River Trent, if blockages occur. The volume and rates of water run-off into the river needs to be restricted and this might not be achievable by building on the head waters. It is better to build new houses where any discharge can flow directly into the River Trent rather than through existing built up areas. Stone has no major issues in terms of river flooding.
25. The Environment Agency suggested a meeting with Jill Rowe and Wilson Hull to discuss Source Protection Zones and abstractions licences. Jane Field to set up a meeting in October 2007 and feedback comments in the interim. Stafford Borough Council to discuss water surface, sewers and water supply with Severn Trent Water.

Note prepared by Alex Yendole
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Stafford Borough Council