

STAFFORD BOROUGH LOCAL DEVELOPMENT FRAMEWORK
MEETING WITH SEVERN TRENT WATER (FOUL WATER AND SEWAGE)

DATE OF MEETING - 27 NOVEMBER 2007

Name of Attendees:-

Paul Hurscombe - Senior Asset Strategist, Severn Trent Water
Alex Yendole - Principal Planning Officer, Stafford Borough Council

- AY explained the context regarding the Local Development Framework and the new development figures being proposed through the Regional Spatial Strategy, specifically 10,300 houses for Stafford Borough with 7,000 new homes at the County Town of Stafford. Severn Trent Water provided a printed map of Stafford Town identifying the main sewerage pipes and the rising main link to the Branscote sewage works near Baswich. Severn Trent Water use a similar model to Synergy to assess the Drainage Area Catchment Zones in terms of capacity levels and potential infrastructure needs in the future; the model is called InfoWorks.
- There are four Drainage Area Catchment Zones in Stafford Borough which are used to transfer sewerage to the sewage treatment works; one for the majority of Stafford town which feeds into the Lammascote pumping station, a second Drainage Area Catchment Zone transferring waste water to a smaller pumping station at Baswich to deal with the Weeping Cross and Baswich areas, a third zone for Stone and the fourth Drainage Area Catchment Zone provides for the remainder of the rural area for Stafford Borough.
- The majority of sewers transfer the foul water through a gravity system flowing downhill but in particular locations pumping stations are required where uphill flows are necessary because of local topography. Therefore this may require the construction of new pumping stations if new development occurs in certain locations. The Lammascote pumping station deals with large flows of waste water and transfers this quantity to the sewage treatment works at Bramscote. The rural area Drainage Area Catchment Zone deals with the foul waste water from Milford and Brocton areas.
- A key issue for waste water is the capacity of gravity sewers to deal with the sewerage flows through the system as well as the ability of the pumping station to cope with the quantity of water within the system. The most significant issues arise with major rainfall events when the foul water and the rainfall water combine in the system putting significant pressure on the distribution network and the sewage treatment plant. The system has been designed to cope with significant flows of water but hydrological pressures need to be taken into account in order to ensure an efficient system.

- By identifying all development proposals by location the flows and sewage systems can be modelled in order to assess future pinch points and problems. The sewerage distribution model is called InfoWorks and can be used to:
 - (a) identify where the existing capacity is within the sewage systems; and
 - (b) identify where problems and significant improvements might be required as a result of new development.
- As previously stated the majority of problems occur with significant rainfall which enters the foul sewerage system because the two systems are linked together. In future the ideal situation is to achieve separate foul sewerage systems and rainfall flow systems. Surface water should be dealt with through Sustainable Urban Drainage Systems or retained in a controlled environment, such as at a pumping station, and released into the system when the spike event has passed and the system is able to cope with the quantity of water. It is crucial to avoid development in flood plains because of overflow problems and gravity issues.
- Improvements to the sewage treatment works at Bramscote is information held by Paul Hodgson who is to be consulted in terms of new infrastructure provision for this facility. In terms of the impact of new development on the capacity of the Bramscote sewage treatment works this can be assessed relatively easily related to water quantity, abstraction flows, consistency of the sewage and the discharge consent quality requirements from the Environment Agency. The more complex assessment involves the waste water distribution network which transports the water to the sewage treatment works to ensure there is sufficient capacity in the system.
- The rising main in Stafford could be a significant infrastructure issue, which works under pressure pumping the waste water through the sewerage system and does reach capacity during certain events. For example a 1000 litres of sewerage per second passing through a rising main where the capacity is 800 litres per second would need to be dealt with by either restricting the amount of sewerage entering the system or increasing the capacity of the rising main. There is the possibility that sewerage could be stored at pumping stations and then allowed through the system when capacity permitted and the rising main is under less pressure.
- Sewerage and foul water systems are fundamentally based on the approach of supply and demand. A profile for Stafford will be prepared to assess future capacity and new infrastructure requirements. Stone is a key problem in Stafford Borough area and particularly the sewer capacities in the town centre, which flood during rainfall events. A feasibility study for Stone is to be carried out in order to assess the problems and provide some future infrastructure solutions. Ofwat have a specific target which must be met by water companies; the target being that no property should experience internal flooding as a result of sewerage systems more than once every 10 years. If this situation does occur the water companies must take action to resolve the issue.

- In Stone the area east of the River Trent in Stone would exacerbate problems during flood events because of capacity restrictions if new development took place in this location. There is a sewage pumping station at Walton which has spare capacity and therefore new development should take place on the western side of Stone and link into this treatment works. Development in this location would have less impact than new housing on the eastern side of the town. Significant development should be avoided in the flood plains or adjoining low lying areas because of the flooding threat and difficulties likely in terms of the sewerage system and treatment processes, such as near Aston-by-Stone.
- Severn Trent Water have a flooding register which identifies flooding that has taken place at individual properties both internal and external. There is a much more significant flooding problem in Stone and the rural areas than in Stafford. The key settlements effected by flooding in the rural areas are:
 - Barlaston - problem has a simple solution and can be resolved
 - Gnosall - local matters to be resolved
 - Haughton
 - Little Haywood
 - Eccleshall
- AY provided some development rates that could take place in the Stafford Borough area in order to guide the InfoWorks modelling exercise of the sewerage system. 7,000 houses for Stafford, 1,000 – 1,500 at Stone, 500 houses each for Eccleshall, Hixon and Gnosall and 250 houses each for the Haywoods, Weston and Haughton. Further details were provided in terms of the phasing of development around Stafford and Stone as well as the nature of employment sites, which are likely to involve types of employment with higher number of workers in the future, such as B1 and B2 uses rather than the more recent focus on large-scale B8 warehouse distribution uses.
- The Water Resources Plan must be submitted to Offwat in March 2009 to comply with the regulatory timescale. Severn Trent Water have an internal deadline of February 2008 to complete the Water Resources Plan, which sets out future investment priorities over the next 5 – 10 years in £millions. Specific examples of new development and implications on infrastructure are used to provide estimates which are then aggregated for the rest of the region. Stafford Borough will be used as a case study within the Water Resources Plan to identify how new infrastructure will be required for significant development and how the infrastructure will be delivered. Stafford Borough Council will be provided with feedback and a report concerning preferences and infrastructure investment implications, including ball part costs by the middle of February 2008.
- Severn Trent Water have been considering the Regional Spatial Strategy and its development levels based on the population profiles per area to be linked to existing infrastructure and potential spare capacities in the system. Drainage area studies are based on a 25 year strategy for the area in order to

guide future investment needs. The majority of the documents prepared by Severn Trent Water are for internal use only, relating to accurate sewage records and rainfall gauges. There is a certain level of knowledge regarding flooding in certain areas, which will be exacerbated by climate change events in the future.

- In rural villages the waste water is transferred to a pumping station and subsequently to the sewage treatment works, with different locations having varying levels of capacity based on the number of dwellings served. For example a village of 500 houses could be up to capacity and therefore a further 10 homes would exceed the system and the sewage treatment works. This issue will be considered when sites are progressed through the Allocations and Site-specific document in due course. The solution may be either a completely new treatment work or an alternative process deployed in order to meet the new demands.
- Glenegan's Planning Consultants work primarily for Severn Trent Water. AY to provide an electronic copy of 'Land for New Homes' to PH, to be forwarded to the planning consultants regarding future residential commitments. Severn Trent Water are aiming to produce headroom maps in the future which are colour coded to show where spare capacity is within the systems.
- Date of Next Meeting at Derby - week commencing 7th or 14th January 2008

Note prepared by Alex Yendole

Date last revised: 08/01/2009

Forward Planning Section, Stafford Borough Council