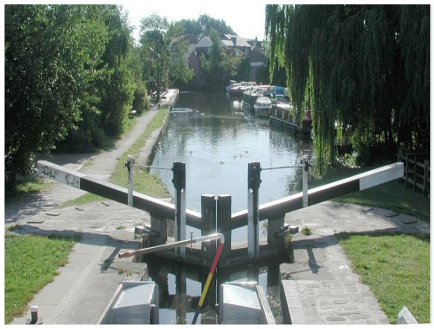
Bassetlaw District Council

Bassetlaw Outline Water Cycle Study

Severn Trent Wastewater Network Assessment

January 2011

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Severn Trent Wastewater Network Assessment

Bassetlaw DC Outline Water Cycle Study (Revised Growth Projections)

Potential impact of proposed developments on sewerage infrastructure assets

Original assessment made 29 January 2010. Revised 14 September 2010 following revised growth projections.

Note: These are desktop assessments using readily available information and have not been subjected to detailed hydraulic modelling

Site Ref	Site Name	Revised Dwellings (Aug 2010)	Revised Employment (Aug 2010)	Sewage Treatment Works Catchment	Sewerage Comment	Potential impact on sewerage infrastructure
Worksop						
	East of Worksop	2000	36	Worksop-Manton	This site is located directly to the north of Worksop STW and so is likely to drain directly to the sewage works.	Low
	North of Mansfield Road				Although there are no known sewer flooding problems immediately downstream of these development sites there are known sewer flooding problems further downstream. Further hydraulic modelling would be required to assess the potential impact on capacity but localised capacity improvements may be required.	Low - subject to hydraulic modelling
	East of Mary Street					
	South west of Haggonfield School					
	Shireoaks Common/Wood End Farm					
	North of Claylands Avenue					
	Gateford Hill Area				This site is located on the northern edge of the Worksop sewerage system and is likely to drain via a small sewage pumping station off Ashes Park Avenue. Further hydraulic modelling and pumping station capacity checks would be required once details on proposed development size is available.	Low - subject to hydraulic modelling
	East of Carlton Road				Subject to detailed hydraulic modelling this development is not expected to have any capacity issues.	Low - subject to hydraulic modelling
	Area around Thievesdale House (North east Worksop)				This site is located on the north eastern edge of the Worksop sewerage system and is likely to drain via a small sewage pumping station off Thievesdale Lane. Further hydraulic modelling and pumping station capacity checks would be required once details on proposed development size is available.	Low - subject to hydraulic modelling
Harworth Bircotes						
	East of Bircotes	1750	28	Harworth	This is potentially a large development site which due to the topography may need to be pumped to connect to the existing sewerage system. In relation to the sewage treatment works this site is located on the opposite side of Harworth. There is a known isolated external flooding problem in the immediate vicinity of the development but as the site is likely to require pumping this is not expected to have a detrimental impact on the current flooding but detailed hydraulic modelling would be required to confirm hydraulic capacity as there are further known capacity issues in the vicinity of Snipe Wood Park/Brookside Road. There are existing surface water sewers crossing the indicative development area but additional storm flows will require attenuation to avoid flooding to receiving watercourses.	Medium (site likely to require pumping but due to location of site in relation to Harworth STW further hydraulic modelling is required)
	Playing fields north of 'North Border Comprehensive School'				There are known sewer flooding problems immediately downstream of this small indicative development location and so subject to detailed hydraulic modelling this development is not expected to have any capacity issues. There are no surface water sewers in the immediate vicinity of the site.	Medium - Known capacity issues
	Snipe Park Wood				There are known sewer flooding problems immediately downstream of this small indicative development location and so subject to detailed hydraulic modelling this development is not expected to have any capacity issues. Both foul and surface water sewers currently cross this site.	Medium - Known capacity issues
	North of Harworth				This is potentially a large development site but is located close to Harworth STW. The western part of the site is directly opposite Harworth STW and so will be able to drain by gravity but localised upsizing may be required to the existing 225mm diameter foul sewer crossing this part of the site. The eastern part of the development would drain via an alternative sub catchment before draining to Harworth STW. There is a known highway flooding problem in Beech Road which (subject to detailed hydraulic modelling) may need localised upsizing. There are existing surface water sewers in the adjoining developments and whilst hydraulic modelling would be required to assess spare capacity it is unlikely that there is sufficient capacity to accept a development of this size without use of SUDS or other measures to reduce surface water run-off.	Low (subject to hydraulic modelling)

	South of Common Lane (West Harworth)				This small site is located adjacent to a small sewage pumping station which pumps to a small sewerage network draining to a pumping station/combined sewer overflow off Church Walk, known as Church Entrance SAPS. This then pumps flows to the outfall sewer upstream of Harworth STW. Hydraulic modelling/pumping capacity checks would be required to ensure the additional developments do not have a detrimental impact on the pumping station or sewer overflow performance.	Low (subject to hydraulic modelling)
	Styrrup Road (West Harworth)				This small site is located adjacent upstream of Church Entrance sewage pumping station/combined sewer overflow, located off Church Walk. This then pumps flows to the outfall sewer upstream of Harworth STW. Hydraulic modelling/pumping capacity checks would be required to ensure the additional developments do not have a detrimental impact on the pumping station or sewer overflow performance.	Low (subject to hydraulic modelling)
	Former Colliery Site (West)				This small site is located adjacent upstream of Church Entrance sewage pumping station/combined sewer overflow located off Church Walk. This then pumps flows to the outfall sewer upstream of Harworth STW. Hydraulic modelling undertaken as part of a recent developer enquiry indicated there may be capacity issues associated with this development but detailed hydraulic analysis would be required to determine the extent of any capacity improvements.	Medium - Potential capacity issues
	Former Colliery Site (East)				This site is likely to drain via an existing sewerage system along Shrewsbury Road which eventually drains via Snipe Wood Park and Brookside Road and on to Harworth STW (all by gravity). There are known sewer flooding problems downstream of this development and hydraulic modelling undertaken as part of a recent developer enquiry confirmed there are capacity issues associated with this development. Further detailed hydraulic analysis would be required to determine the extent of any capacity improvements.	Medium - Known capacity issues

Retford

	East of Wisker Hill	1500	16	Retford	There are known external flooding problems downstream of this development location. Further hydraulic analysis would be required to assess capacity availability for all developments to the south of the railway.	Medium - Known internal flooding downstream
	South of Retford				There are known internal and external flooding problems downstream of this development location. The internal flooding problem is currently being assessed as part of our sewer flooding capital investment programme. Further hydraulic analysis would be required to assess capacity availability for all developments to the south of the railway.	Medium - Known internal/external flooding downstream
	East of Bolham Lane				This site is located opposite Bolham Lane sewage pumping station which pumps most of Retford across the river directly to Retford STW. The rising main from Clarborough Hayton crosses this site. Although there are no known sewer flooding problems in the vicinity of the site, there is a storm sewer overflow on Bolham Lane which would need to be assessed to ensure its performance is not unduly affected. However subject to hydraulic modelling it is not envisaged that this development would have any major capacity implications.	Low - subject to hydraulic modelling
	West of North Road				This site located close to Retford STW although flows are pumped to the sewage works via a small sewage pumping station off Radnall Way. There are no known sewer flooding problems downstream of the site and subject to hydraulic modelling no capacity issues are envisaged.	Low - subject to hydraulic modelling

Carlton-in-Lindrick

	South west	300	0	Hodstock	There are several known internal flooding problems on Doncaster Road which would be affected by this development. These flooding problems are remote from the development but any increase in base flows will exacerbate flooding. Part of the development is expected to drain via a sewage overflow on Doncaster Road. Further hydraulic modelling will be required to assess the capacity issues and identify the scope of any improvements.	Medium - Known internal flooding immediately upstream of the development site
	Rear of Ingham Bungalows				There are several known internal flooding problems on Doncaster Road which are immediately upstream of this development. Hydraulic modelling would be required to assess the impact of this development.	Medium - Known internal flooding immediately upstream of the development site
	North west				Site located immediately upstream of the main outfall sewer to Hodstock STW. There are no known sewer flooding problems downstream of the development site	Low
	Ghest Villas				Site located immediately upstream of the main outfall sewer to Hodstock STW. There are no known sewer flooding problems downstream of the development site	Low

Misterton

	North of Carr Lane	250	0	Walkeringham	These three sites would drain to Cornley Road sewage pumping station. There are no known sewer flooding problems in this sub-catchment nor any current capacity issues at Cornley Road SAPS. Flows are then pumped to Station Street any then by gravity to the terminal pumping station at Marsh Lane which pumps all of Misterton to the sewage works at Walkeringham. There is a known highway flooding problem off March Lane and so hydraulic modelling would be required to ensure this problem is not unduly exacerbated. Due to the increase in the proposed number of dwellings being proposed in the village there it is envisaged that some capacity improvements may be required at the sewage pumping stations depending on the location of the development sites. However provided surface water is managed sustainably and is not connected to the foul/combined sewers then this impact will be reduced.	Low/Medium - Potential impact on sewage pumping station capacity
	East of Gringley Road					
	South of Ashdown Way					
	North of Gravelholes Lane				All three sites would drain to a sewer serving the south of the village which drain by gravity to the terminal pumping station at Marsh Lane which pumps all of Misterton to the sewage works at Walkeringham. There are no known sewer flooding problems on this 225mm diameter sewer but due to the increase in the proposed number of dwellings being proposed in the village there it is envisaged that some capacity improvements may be required at the sewage pumping stations depending on the location of the development sites. However provided surface water is managed sustainably and is not connected to the foul/combined sewers then this impact will be reduced.	Low/Medium - Potential impact on sewage pumping station capacity
	South of Gravelholes Lane					
	North of Fox Covert Lane					
	South west of Station Street				There is a known highway flooding problem off March Lane and so hydraulic modelling would be required to ensure this problem is not unduly exacerbated. Due to the increase in the proposed number of dwellings being proposed in the village there it is envisaged that some capacity improvements may be required at the sewage pumping stations depending on the location of the development sites. However provided surface water is managed sustainably and is not connected to the foul/combined sewers then this impact will be reduced.	Low/Medium - Potential impact on sewage pumping station capacity

Langold

	East	60	0	Hodstock	Site located immediately upstream of the main outfall sewer to Hodstock STW. There are no known sewer flooding problems downstream of the development site	Low (but minor flooding problem downstream)
	West				Site located immediately upstream of the main outfall sewer to Hodstock STW but there is a no known external flooding problems downstream which many need localised upsizing to provide additional capacity to ensure the flooding does not deteriorate.	Low

Tuxford

	3 sites to south of Tuxford	250	0	East Markham	These three sites are located on a sub-catchment which drains to a small sewage pumping station at Ashvale Road. There are no known sewer flooding problems in the catchment and so subject to hydraulic modelling no capacity issues are envisaged provided surface water is managed sustainably and not connected to the foul/combined sewer.	Low - subject to hydraulic modelling
	2 sites to west of B1164 (Eldon Street)				These two site drain by gravity directly to East Markham STW (located to the east of the village). There are no known sewer flooding problems downstream of the development sites and subject to hydraulic modelling no capacity issues are expected provided surface water is managed sustainably and not connected to the foul/combined sewer.	Low - subject to hydraulic modelling

Blyth

	North	60	0	Hodstock	This village drains north to a small sewage pumping station off Bawtry Road which then pumps flows via a 200mm diameter 3.2km rising main directly to Hodstock STW. There is a known garden flooding problem downstream off all three development sites which may need some localised upsizing works although acceptance of an additional 60 properties in the village is not expected to be have any capacity issues provide storm water is not connected to the foul sewers. There are some limited surface water sewers located to the south of the village.	Low - Although there is a known external flooding problem in the village
	South					
	West					

Elkesley

	Coalpit Lane	60	0	Elkesley	Located immediately upstream of Elkesley STW. An existing 150mm diameter outfall sewer currently crossing this indicative development site. There are no known capacity issues with this sewer.	Low
	Cedar Tree Road/Elkesley Primary School				Subject to the exact location of this site it would either drain west by gravity to Elkesley STW or east to a small sewage pumping station which then pumps flows a gravity sewer in Lawnwood Ave and then by gravity to Elkesley STW. There are no known capacity issues with the 150mm diameter sewers to the west, although hydraulic modelling would be required to confirm capacity availability. There are no known problems with Brough Lane SAPS although there is a known highway flooding problem upstream of Brough Lane SAPS. Further hydraulic assessment would be required to confirm capacity availability.	Low
	North of Brough Lane				This site would drain to Brough Lane SAPS. There are no known problems with Brough Lane SAPS although there is a known highway flooding problem upstream of Brough Lane SAPS. Further hydraulic assessment would be required to confirm capacity availability.	Low

North Wheatley

	East	60	0	North Wheatley	This site is located close to North Wheatley STW and subject to hydraulic confirmation a development of 60 dwellings in this location is not expected to have any capacity issues.	Low
	South				There is a known garden flooding problem downstream of this development and so further hydraulic analysis would be required to assess the impact of this development on the flooding problem.	Medium - Known garden flooding downstream
	West				There is a known garden flooding problem downstream of this development and so further hydraulic analysis would be required to assess the impact of this development on the flooding problem.	Medium - Known garden flooding downstream

Beckingham

	North east of Station Road	60	0	Walkeringham	Both these sites are upstream of Station Road SAPS which also has a combined sewer overflow. This pumping station then pumps flows to Low Street. There are known internal flooding on Low Street which is currently being assessed as part of our sewer flooding investment programme. All flows from Beckingham are pumped directly to Walkerington STW.	Medium - Known internal flooding downstream
	South of Station Road					
	West of A631				Subject to the location of this development drainage from this site would drain directly to the sewers in Low Street or via the pumping station in Station Road. Either way flows would affect the known internal flooding problem on Low Street.	Medium - Known internal flooding downstream
	Beecher Lane				This site would drain to sewers upstream of the known sewer flooding problems in Low Street and so additional flows are likely to have negligible impact on the current flooding	Low

Misson

	North	60	0	Misson	This small village drains to a small sewage pumping station located to the south west of the village with access off High Street. This then pumps via a 920m 100mm diameter rising main to Misson STW located to the north east of the village located on Top Road. There are no known sewer flooding problems in the village and so subject to hydraulic modelling an additional 60 dwellings is not expected to have a detrimental impact on capacity.	Low - subject to hydraulic modelling
	East					
	West					

North Leverton

	All sites	60	0	West Burton	All three indicative sites are upstream of a known low frequency internal flooding problem on Main Street (in the vicinity of Southgore Lane). The additional flows from a further 60 dwellings in not expected to have a major impact on this flooding problem but detailed hydraulic modelling would be require to confirm if any localised capacity improvements are required. All flows in North Leverton are pumped to West Burton SAPS but there are no capacity issues at this pumping station.	Low - subject to hydraulic modelling

Rampton

	All sites	60	0	Rampton	Both sites drain to a terminal sewage pumping station off The Pastures which pumps all flows from the village directly to Rampton STW. There are known internal flooding problems in the vicinity of the pumping station but these are currently being assessed as part of our sewer flooding investment programme. Subject to completion of these sewer flooding improvements we do not envisage any capacity issues associated with an additional 60 dwellings in the village	Medium - Known internal flooding downstream

Clarborough Hayton

	All sites	60	0	Retford	There are three isolated external flooding locations across the village indicating limited capacity. Further hydraulic modelling would be required to assess spare capacity and any improvement needs. All flows in the village drain to a terminal sewage pumping station on Smeath Lane which pumps flows to Retford.	Medium - Known external flooding in the village

Nether Langwith

	All sites	60	0	Nether Langwith	There are no known sewer flooding problems in Nether Langwith and so subject to hydraulic modelling no capacity issues are expected to cater for an additional 60 dwellings in the catchment.	Low - subject to hydraulic modelling

Cuckney

General	All sites	60	0	Norton	All flows in the village drain to a terminal sewage pumping station which pumps flows to Norton sewage treatment works. There is a known isolated external sewer flooding problem located at the top of the catchment (south-west of the village) indicating localised capacity constraints. Further hydraulic modelling would be required to assess spare capacity and any improvement needs but provided surface water is managed sustainably and not connected to the foul/combined sewer then (subject to hydraulic confirmation) capacity improvements are not envisaged to be significant to accommodate foul only flows from 60 properties.	Low - subject to hydraulic modelling

Dunham

General	All sites	60	0	Rampton	All flows in the village drain to a terminal sewage pumping station which pumps flows to the village of Laneham where flows are then pumped on to Rampton sewage treatment works. There is a known infrequent internal and external sewer flooding problem located at the top of the catchment (south-west of the village) indicating localised capacity constraints. Further hydraulic modelling would be required to assess spare capacity and any improvement needs but provided surface water is managed sustainably and not connected to the foul/combined sewer then (subject to hydraulic confirmation) capacity improvements are not envisaged to be significant to accommodate foul only flows from 60 properties.	Low - subject to hydraulic modelling

East Markham

General	All sites	60	0	East Markham	There is a known isolated external sewer flooding problem in the village indicating localised capacity constraints. Further hydraulic modelling would be required to assess spare capacity and any improvement needs but provided surface water is managed sustainably and not connected to the foul/combined sewer then (subject to hydraulic confirmation) capacity improvements are not envisaged to be significant to accommodate foul only flows from 60 properties.	Low - subject to hydraulic modelling

Everton

General	All sites	60	0	Mattersey Thorpe	This village is served by two pumping station. The first pumps the east of the village to the sewerage system serving the west whereby all flows are then pumped directly to the sewage treatment works. There is a known infrequent internal sewer flooding problem in the village indicating localised capacity constraints. Further hydraulic modelling would be required to assess spare capacity and any improvement needs but provided surface water is managed sustainably and not connected to the foul/combined sewer then (subject to hydraulic confirmation) capacity improvements are not envisaged to be significant to accommodate foul only flows from 60 properties. Any development to the east of the village would be less preferable due to potential capacity issues on the small sewage pumping station and the known flooding.	Low - subject to hydraulic modelling

Gamston

General	All sites	60	0	Gamston	There are no known sewer flooding problems in the village which is served by a small 225mm diameter foul sewerage system draining to a small sewage pumping station pumping to Gamston sewage treatment works. Provided surface water is managed sustainably and not connected to the foul/combined sewer then (subject to hydraulic confirmation) capacity improvements are not envisaged to be significant to accommodate foul only flows from 60 properties.	Low - subject to hydraulic modelling

Gringley-on-the-Hill

General	All sites	60	0	Gringley-on-the-Hill	There are no known sewer flooding problems in the village and so provided surface water is managed sustainably and not connected to the foul/combined sewer then (subject to hydraulic confirmation) capacity improvements are not envisaged to be significant to accommodate foul only flows from 60 properties.	Low - subject to hydraulic modelling

Lound

General	All sites	60	0	Lound	There are several external flooding problems in the centre of the village which would be exacerbated by any development to the south or east of the village. Consequently depending on the location of development localised capacity improvements are envisaged although further hydraulic modelling will be required to confirm the extent of capacity improvements.	Low/Medium - Several external flooding locations

Mattersey

General	All sites	60	0	Mattersey Thorpe	There are no known sewer flooding problems in the village and so provided surface water is managed sustainably and not connected to the foul/combined sewer then (subject to hydraulic confirmation) capacity improvements are not envisaged to be significant to accommodate foul only flows from 60 properties.	Low - subject to hydraulic modelling

Ranskill

General	All sites	60	0	Ranskill	There are no known sewer flooding problems in the village and so provided surface water is managed sustainably and not connected to the foul/combined sewer then (subject to hydraulic confirmation) capacity improvements are not envisaged to be significant to accommodate foul only flows from 60 properties.	Low - subject to hydraulic modelling

Sturton-le-Steeple

General	All sites	60	0	West Burton	All flows in the village drain to a terminal sewage pumping station which pumps flows to West Burton sewage treatment works. There is a known isolated external sewer flooding problem located at the top of the catchment (north of the village) indicating localised capacity constraints. Further hydraulic modelling would be required to assess spare capacity and any improvement needs but provided surface water is managed sustainably and not connected to the foul/combined sewer then (subject to hydraulic confirmation) capacity improvements are not envisaged to be significant to accommodate foul only flows from 60 properties.	Low - subject to hydraulic modelling

Sutton (Cum Lound)

General	All sites	60	0	Lound	This village is pumped to the village of Lound where there are known external sewer flooding problems. The discharge point from the rising main is upstream of the flooding problems in the centre of the village which would be exacerbated by any development in Sutton which could increase pumping rates. Consequently depending on the location of development localised capacity improvements are envisaged although further hydraulic modelling will be required to confirm the extent of capacity improvements.	Low/Medium - Several external flooding locations downstream in Lound village

Walkeringham

General	All sites	60	0	Walkeringham	All flows in the village drain to a terminal sewage pumping station which pumps flows to Walkerington sewage treatment works. There is an isolated external sewer flooding problem located near to this pumping station indicating localised capacity constraints. Further hydraulic modelling would be required to assess spare capacity and any improvement needs but provided surface water is managed sustainably and not connected to the foul/combined sewer then (subject to hydraulic confirmation) capacity improvements are not envisaged to be significant to accommodate foul only flows from 60 properties.	Low - subject to hydraulic modelling