

## **Introduction**

This report is written as representing Stoney Stanton Parish Council regarding the flooding that occurred between 29<sup>th</sup> December 2023 and 2<sup>nd</sup> January 2024.

Between the dates significant amounts of effort were required by the residents and well as authorities to prevent water entering residential properties. During the same period the amount of rainfall was not significant to factor as an X in 100 year storm and was levels of rainfall that are routinely seen annually (Source. Env Agency & Village Weather Stations). On the 29<sup>th</sup> December and the 2<sup>nd</sup> January, 25mm of rainfall was measured, this however fell on completely saturated ground and on one specific system, water was not able to flow due to an apparent collapse of the pipework, first noted in 2020.

In both events the water system that flows under Station Road at the national speed limit signs was in full flow but did not back up or overflow into the road or cottages which was a significant contributor to the events previously 1<sup>st</sup> October 2019.

Both of the events detailed in this report were near misses, however without the significant actions of the residents and Parish Council the homes would have flooded and significant damage and distress caused.

## **Rainfall Data**

Analysis of the rainfall data that was measured for the preceding 12 months was used and analysis and comparison between the data from this period and other known flooding instances was referenced. The 3 months preceding this event was very similar to the rainfall patterns ahead of the 1<sup>st</sup> October 2019 and other flooding events. The following observations can be noted from the data:

1. The 3-month cumulative rainfall figures are 394mm, a high total.
2. Rainfall above 20mm fell on the 30<sup>th</sup> of December and the 2<sup>nd</sup> of January, requiring emergency measures to prevent Mountsorrel Cottages from flooding.
3. Rainfall above 20mm falling on saturated land constitutes a high flood risk. I compared the 3-month rainfall figures with a much larger dataset after the October 2019 floods. The 3-month statistics are consistent with this analysis.
4. There were two days in October when over 40mm of rain fell. If 40mm of rain had fallen on the 2nd of January, I believe Godfrey Close would have been underwater.

## **Stoney Stanton Flooding 2<sup>nd</sup> January 2024**

In addition to the previous incident on the 30<sup>th</sup> December 2023, further flooding to more significant water level and volume took place on 2<sup>nd</sup> January 2024. At the start of the day, the water levels running through the drainage systems around Station Road were all at a normal level (Pic. 2), running at around 120mm of depth with the exception to the manhole located on the chevrons adjacent to SJ Car Sales. This manhole was running to mid-height of the 450mm overflow pipe, indicating a depth of around 8', and confirming concerns regarding the lack of flow from the 300mm main pipe from the rainfall on 30<sup>th</sup> December 2023.

The floodplain of the rear of the Godfrey Close development was in flood and covering the footpath through the development. The sound attenuation fencing was approx. 750mm in depth at the far corner. At the same time the drive into the Foxbank Industrial Site was flooded adjacent to the

entrance into the Stressline complex, this was approx. 350mm deep at worst and vehicles were able to navigate with ease.

An inspection of the restrictor plate found the device to be free flowing, there was no water coming over the top and through the grate at the commencement of the rain indicating the water was being held back in the Godfrey Close floodplain

by the restrictor plate which was running at full flow. The grate to the top of the restrictor plate was heavily blocked with hardcore and mud, this was cleared to ensure as the water rose it could work as it was intended.

The rainfall commenced around 10am with around 0.8mm/hr and increasing to around 4mm/hr by 13:00 when the water level began to rise to the rear of 1 Station Road and the manholes and pipework became backed up and surface flow commenced (Pic. 3 manhole 3 & Pic.4 manhole 5). At the same time the overflow from the manhole adjacent to SJ Cars on the chevrons was flowing with significant volumes of water, and the drains on the entrance to Foxbank Industrial Site became overwhelmed and stopped accepting water, this resulted in the water level on the entry road becoming deeper. At this point the garage adjacent to 1 Station Road as well as that to the rear of 6 Station Road to a level of approximately 150mm occurred and remained flooded until the water receded around 19:30.

The rain fell steadily throughout the day at a peak level of around 6.8mm/hr. By 14:02 the water had risen the level where it was flowing over the top of the restrictor plate and through the grate (Pic 9 & 10). When this starts to happen it puts increasing pressure on the systems that protect the Meadow Close development and a visit to the residents there showed the water level increasing, although the systems were coping and running around 85% peak flow through the twin bore pipes (Severn Trent Location 9106). The same was confirmed by residents and Blaby District Council by viewing the outfall from these pipes in the Manor Brook (Severn Trent Location 0106). The systems continued to be monitored throughout the day to ensure they were not becoming overwhelmed.

Water levels rose and breached the brook to the rear of Station Road flooding the road and rear gardens of the properties as seen in Pic. 14, the water was also spilling from the headwall which is indicated as point 1 in Pic. 1. We believe that this is exasperated by the inability of water to flow from the rear of the properties and away. Still in place is the 300mm pipe that connects to the rear of all of the properties, this comes to a manhole in the pavement adjacent to 12 Station Road. This pipe then continues across the road in 300mm diameter. Originally this pipe fed directly into the field without restriction prior to the building of Godfrey Close. During the building the pipe was capped in a chamber with a manhole and is now directed at 90 degrees through a 4" plastic U/G pipe, it is the belief that this pipe terminates approximately 20m to along the grass bank with no outflow. This has been raised in 2019 as a concern as there is nothing apparent in the planning documentation or water plans for the building of the Godfrey Close development.

By 15:20 the water level had begun to fall in the Manor Brook and the Twin Bore pipes however the rest of the system was continuing to rise indicating that the grate that forms the overflow from the restrictor plate was again blocked. At this point however the road had become unpassable on foot and in most vehicles and the businesses had stopped operating for the day.

In order to alleviate as best as possible, the rising flood waters, sand banks were employed around the properties of 1 – 4 Station Road. At the same time the water was encroaching on the rear of 1 Station Road directly from the culvert to the rear of the property, this was then flowing down the side of the property overwhelming the drainage systems in place for roof run off and domestic

kitchen systems. The water then flowed around the front face of the property and began to accumulate around the front entrance to 2 Station Road which is a step down from number 1 and also to the road, meaning that water needed to be bucketed out of the area as well as using 2 different pumps. This meant that the flood water did not enter the property, although it was above the level of the air bricks under the front window.

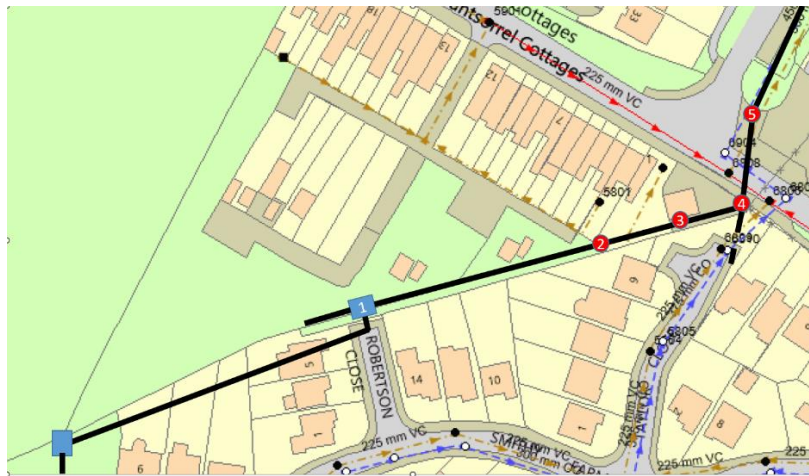
From 13:45 2 pumps were operational in manhole, these were a petrol powered 3" pump and a high volume electric one. There were initially pumping the water into the road drain system, however as concerns were raised by all parties regarding the capacity of the system, this then changed to pumping down the Foxbank Industrial Estate and into the road storm sewer into manhole XX on the Severn Trent system.

During periods where the rain elevated between 16:30 and 17:00 the water level was seen to significantly recede but within 18 mins of the rain starting at 17:00 the level was seen to start to rise again.

The rain ceased falling around 19:00 and within 45 minutes of this happening the water levels had begun to recede and by 20:30 the pumping was able to stop and the water level no longer posed a risk to the residential properties. At around 19:00 a suitable vehicle was found that could drive through the flood water to inspect the restrictor plate (Pic. 6 & 7) and understand what was happening. This inspection showed that there was very little overflow from the restrictor indicating that it was indeed blocked or on minimal flow. An inspection of the outfall from the culvert under the Stressline complex appeared to confirm this with limited flow aligned with levels of water where flow was just through the restrictor, this was also observed at the twin culverts ahead of Meadow Close (Pic. 8).

On the 3<sup>rd</sup> January 2024 the water levels had begun to recede although significantly lower than what would have been expected adding further evidence that the overflow to the restrictor had become blocked. With the correct PPE an employee from Foxbank Industrial Estate entered the flood water and began to clear a small section of the overflow grate, as this was started the water flow increased downstream significantly, confirming that the blockage of the overflow plate was holding the water volume in the Godfrey Close floodplain. Once a section of the overflow plate was clear the water level reduced back to normal level in around 7 hours with the road to the Foxbank Industrial Estate and Godfrey Close floodplain back to normal operation with the remaining water flowing through the restrictor plate as intended.

Pictures and References



Pic. 1 - Watercourse overview to the rear of Station Road.



Pic. 2 – Flow through manhole 3 at 8:47 2<sup>nd</sup> January 2024.





Pic. 3 Flow through manhole 3 at 12:50 2<sup>nd</sup> January 2024



Pic.4 Manhole 5 at 13:02 2<sup>nd</sup> January 2024



Pic.5 High water level at the entrance to Foxbank Industrial Estate 19:26 2<sup>nd</sup> January 2024



Pic. 6 High Level at the restrictor plate 19:29 2<sup>nd</sup> January 2024





Pic. 7 High Level at Godfrey Close Floodplain 19:24 2<sup>nd</sup> January 2024



Pic. 8 Water Flow through Twin Culverts 19:47 2<sup>nd</sup> January 2024– Point 9106 Severn Trent Water Locations



Pic. 9 Water Flowing into the restrictor plate overflow 14:02 2<sup>nd</sup> January 2024



Pic.10 Water Flowing from the Godfrey Close Floodplain towards the restrictor 14:04 2<sup>nd</sup> January 2024



Pic. 11 Restrictor Overflow Grate post cleaning and water level receding.





Pic. 12 Flooding to front of 2 Station Road 13:50 2<sup>nd</sup> January 2024



Pic. 13 Residents pumping and bucketing water from the front garden of 2 Station Road 16:20 2<sup>nd</sup> January 2024



Pic. 14 Water accumulating to the rear of Station Road homes overspilling the bank of the brook and pooling in gardens 14:21 2<sup>nd</sup> January 2024

Date	Rainfall Daily mm	Date	Rainfall Daily mm	Date	Rainfall Daily mm	Date	Rainfall Daily mm
01-Oct	0	01-Nov	4.32	01-Dec	0	01-Jan	14.22
02-Oct	21.08	02-Nov	19.05	02-Dec	0	02-Jan	25.91
03-Oct	1.02	03-Nov	0	03-Dec	13.46	03-Jan	1.52
04-Oct	0	04-Nov	7.37	04-Dec	14.99	04-Jan	
05-Oct	0	05-Nov	0.76	05-Dec	9.4	05-Jan	
06-Oct	0	06-Nov	0	06-Dec	12.19	06-Jan	
07-Oct	0	07-Nov	0.25	07-Dec	0	07-Jan	
08-Oct	0	08-Nov	3.56	08-Dec	0	08-Jan	
09-Oct	0	09-Nov	0.76	09-Dec	7.11	09-Jan	
10-Oct	0	10-Nov	0	10-Dec	8.38	10-Jan	
11-Oct	5.08	11-Nov	0	11-Dec	0	11-Jan	
12-Oct	1.78	12-Nov	4.32	12-Dec	5.08	12-Jan	
13-Oct	40.39	13-Nov	7.11	13-Dec	0.76	13-Jan	
14-Oct	0.76	14-Nov	0	14-Dec	1.02	14-Jan	
15-Oct	0	15-Nov	0.25	15-Dec	0	15-Jan	
16-Oct	0	16-Nov	0.25	16-Dec	0	16-Jan	
17-Oct	0	17-Nov	0.76	17-Dec	0	17-Jan	
18-Oct	15.75	18-Nov	8.64	18-Dec	2.79	18-Jan	
19-Oct	7.87	19-Nov	0	19-Dec	9.4	19-Jan	
20-Oct	41.15	20-Nov	22.86	20-Dec	0	20-Jan	
21-Oct	1.78	21-Nov	0.25	21-Dec	0	21-Jan	
22-Oct	0.25	22-Nov	0	22-Dec	3.05	22-Jan	
23-Oct	0	23-Nov	0.25	23-Dec	1.02	23-Jan	
24-Oct	0.25	24-Nov	0	24-Dec	0.25	24-Jan	
25-Oct	0	25-Nov	0	25-Dec	4.32	25-Jan	
26-Oct	2.79	26-Nov	2.79	26-Dec	0	26-Jan	
27-Oct	0	27-Nov	8.38	27-Dec	12.19	27-Jan	
28-Oct	9.91	28-Nov	0	28-Dec	5.09	28-Jan	
29-Oct	0.25	29-Nov	0	29-Dec	2.29	29-Jan	
30-Oct	0	30-Nov	0.25	30-Dec	24.64	30-Jan	
31-Oct	6.35			31-Dec	7.87	31-Jan	
SUM=	156.46		92.18		145.3		

Pic. 15 Rainfall Data collected via Davis Weather Rainfall Gauge located on Meadow Close



Pic. 16 Garage adjacent to 1 Station Road, water level peaked at 175mm 16:48 2<sup>nd</sup> January 2024.

### **Stoney Stanton Flooding 30<sup>th</sup> / 31<sup>st</sup> December 2023**

Water levels rose behind the Station Road cottages from around 19:00 after prolonged rainfall, averaging 0.6mm / hour since 27<sup>th</sup> December (total rainfall 32.6mm 27<sup>th</sup> – 31<sup>st</sup> December).

The water levels rose and flooded the garage adjacent to 1 Station Road to around 110mm in depth. The adjacent properties at the time of the call were approximately 50mm below the rear thresholds of properties 1, 2 & 3, in the case of 2 Station Road the air bricks were underwater. The water was rising from the brook to the rear of the cottage in what appeared to be backing up of the system on first sight as there was no indicated flow through the system.

The rest of the water network around the cottages was handling the water well and whilst running at what looked like capacity was discharging the water well.

The head wall adjacent to Roberston Close (Point 1 on Pic. 1) was overflowing and water was flowing down the central driveway to the road. The manholes were lifted to the rear of the garage adjacent to 1 Station Road (Points 2, 3 & 4 on pic. 1) where they were full with no indication of movement of water. The same situation was present in the manhole located on the chevrons adjacent to SJ car sales Point 5 on pic.1) . This is the manhole that houses the large bore interceptor and has the outfalls through a 300mm low level pipe that runs via 2 further manholes to the restrictor plate in Stressline, and also has a high level 450mm overflow pipe that should send water down the Stressline drive and into what was the field.

It immediately became clear that there was no water flowing from the manhole adjacent to SJ Car Sales through the bottom main pipe, this was verified by opening the manhole to the rear of parking bay 7 on the Stressline drive (Point 6 on Pic. 2 and Pic 6) and seeing no flow coming from the outfall of the pipe, the pipe from the manhole to take water away was completely empty. In the photos you will note there are significant sections of broken up vitrified clay pipe in and around the manhole. No flow through this pipe led to the system backing up. At this point the water should have been able to flow from the overflow 450mm pipe (Pic. 8), however at this point the pipe and its outfall are significantly below the height of surrounding ground meaning the water is unable to flow from here



and away. With both routes blocked the water was only able to back up and the level overflow into the rear gardens of the properties and garage.

To ensure the water did not come into the rear of the properties a decision was made to deploy the emergency pumps and pump water from the manhole adjacent to SJ Car Sales into the flood plain before the restrictor plate. The pumping took 4 hours and took the water level down by around 8" reducing the risk significantly. Further pumping was completed on 31<sup>st</sup> December for 5 hours further reducing the level of the water. Spoil was also removed from the mouth of the overflow pipe to ensure this could flow albeit very limited from what should have been possible.

The issues with both of these pipes was originally raised in March 2020 with Leicestershire County Council and the flooding cohort of agencies that were formed. It was further identified during surveys by LCC that the 300mm pipe had collapsed and this was verified when video footage was obtained by Pete 'Boyle'? on behalf of LCC. The overflow is indicated on the plans of the development as a ditch that originally ran to the bottom of the drive and onto the land which is now occupied by Bellway Homes Godfrey Close development.

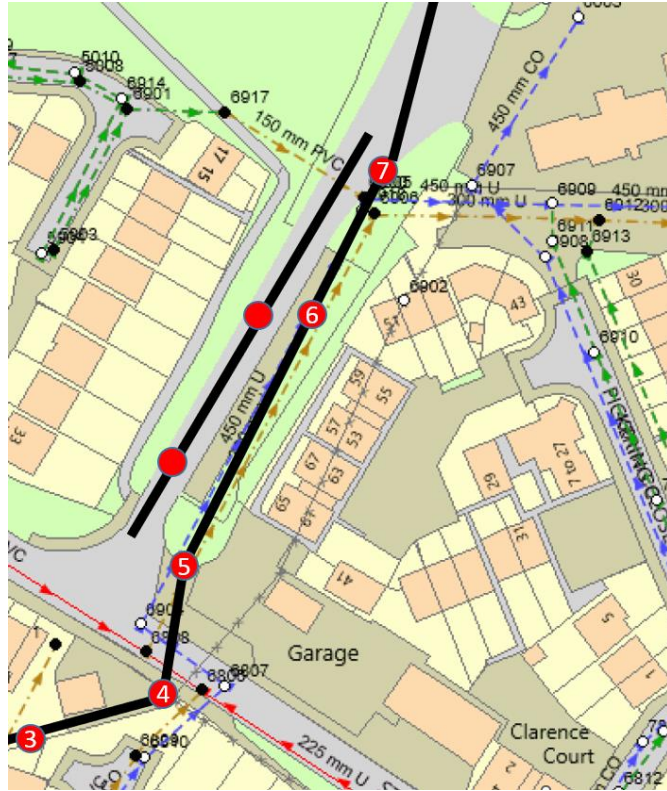
In order to mitigate the issues with this watercourse it is the opinion of the residents that the 300mm main feed pipe must be surveyed and replaced without delay to allow the ordinary flow of water from the systems, the overflow must be put back to as designed to ensure in the event of extreme water flow the water is able to run off and be managed by the restrictor plate and the flood plain. As always we are happy to engage and would like to understand how firm actions can quickly be put in place.

There are multiple videos that can also be shared but would need a DropBox or similar link to send them due to size limitations.

### Pictures and References



Pic. 1 – Watercourse overview to the rear of Station Road.



Pic.2 – Manholes and pipework to the Stressline Drive



Pic. 3 Flooding of garage adjacent to 1 Station Road



Pic. 4 Rear of 1 Station Road





Pic. 5 Location 2 water level



Pic. 6 Manhole 6 with no water flowing through (Note the multiple pieces of broken pipework)



Pic. 7 Manhole 4 full with no indicated water flow



Pic. 8 Overflow from manhole 5 with no where for the water to go.



Pic. 9 Flooding to rear of Godfrey Close (Pic taken 31<sup>st</sup> December @ 9am