The History of the Wrotham and Borough Green Sewage System

1.0 Origins of the Sewer Network

1.1 The system was planned and implemented by the Wrotham Urban District Council (WUDC) and was completed in 1932.

> *"We understand this ran from the west of Borough Green, following the A25 as far as the Maidstone Rd pumping station opposite the Recreation Ground, where it went north and followed the railway as far as Platt Industrial Estate where it rejoined the A25 at Whatcote Cottages, following it to Wrotham Heath and onward to Ham Hill Sewage Works. Wrotham was connected via a main following the A227 to Borough Green where it connected to the east/west main, probably at Western Rd.*
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> *The pipe used was 18" spun concrete, probably produced by Milton Pipes in Sittingbourne, but was made from Ordinary Portland Cement (OPC) being the days before Sulphate Resisting Cement (SRC) was developed. As a consequence, it is vulnerable to sulphate attack from the effluent gases. Hydrogen Sulphides produce Sulphuric Acid when mixed with water, which dissolves both concrete and the reinforcing mesh.*
> ***REF: WUDC Sewage System 1929 - 1932 copied from original WUDC/MUDC maps***

1.2 The following is a graphical representation of the system, denoted in black as originally installed. Copied from the original large-scale mapping. The system served only Wrotham, Borough Green, and Platt, and at the time the three villages had approximately 1071 houses.

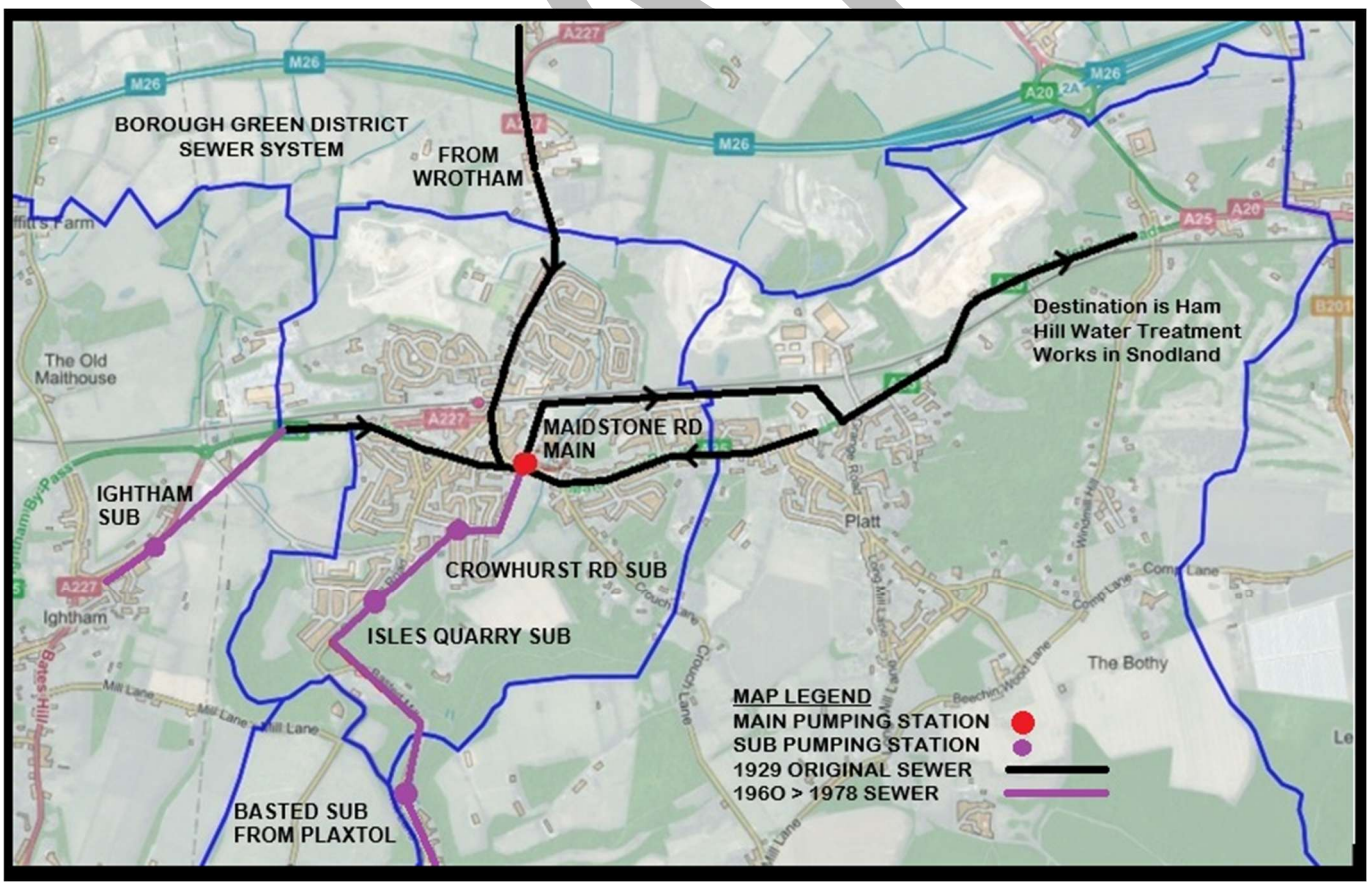


Figure 1: Graphical representation of the Borough Green District Sewer System (from WUDC Maps)

1.3 Basted Pumping Station was connected to the network in 1967 to provide a sewage connection for the new housing development that replaced the paper mill.

1.4 There is a new sub-pumping station on Crowhurst Road that serves the new Woodlands and Valley View Estates.

1.5 Shortly after this, a new pumping station was installed near the Spoute Recreation Ground in Plaxtol, collecting sewage also from Shipbourne and Dunks Green, and sending it up a new pipe installed on the banks of the Bourne River to join the Basted Pumping Station, and thence to Borough Green.

1.6 At a similar time the whole of Ightham and Ivy Hatch were put on main drainage and connected through a new Ightham pumping station on Borough Green Rd. From there, a new sewer crossed Darkhill Farm, joined the original 1929 sewer on Sevenoaks Rd, which connects to the Maidstone Rd Main Pumping Station.

1.7 By the late seventies, the Borough Green Sewer System had expanded, with all the purple sewer connections shown in the network in Figure 1. Villages such as Ightham, Plaxtol and Shipbourne had been linked in, as had numerous new housing estates.

2.0 The Consequences of Unbridled Sewer Expansion

2.1 By the late 1970s, a further 1481 houses were added from the newly connected villages, but with no investment in the 1929 sewer backbone.

2.2 New developments continue to be added to the network by adding a further sub-pumping station and a new feeder sewer to the Maidstone Road Main Pump Station. Isles Quarry West added circa 171 houses around 2013.

2.3 In the 21st century, sewage failures occur regularly in the network and are patched up as they occur. Some examples follow.

1. In the 1970's a large sinkhole opened up near The Crossroads, caused by a "washout" when the sewage main burst some 15m below ground.
2. In the 1990s, the Maidstone Rd Recreation Ground manhole burst in the car park, flooding the Rec, which had to be closed for several weeks for decontamination. Sewage flowed down the River Bourne into Basted Millpond, and a 2002 Basted Millpond survey found high levels of sewage residue in the pond silt and banks.
3. In about 2008 the sewer from Basted blew out in Thong Lane, and sewage flooded back down the hill into the Bourne and Basted Mill Lake.
4. In 2008, a small sinkhole opened up above the sewer line at the Maidstone Rd junction with Hillview.
5. Between 2012 and 2015, there were multiple breaches adjacent to Church View, Sevenoaks Road due to sewage bursts at a manhole, which flooded multiple properties.
6. In 2013, the Rock Road connection into the main sewer was blocked, causing flooding across Sevenoaks Road.
7. In late December 2013, the Maidstone Rd Pump House power failed, and the backup generator failed to start. The subsequent flood inundated gardens and properties in Hillview Close and Maidstone Rd. Subsequently, the Main Pump House failed in 2014 and 2015, causing further sewage floods.
8. In 2014, 51 Maidstone Rd, also adjacent to the main pumping station, flooded on several occasions with sewage backwash and is now fitted with sealed manholes.
9. There were multiple blowouts of manholes on the sewer from Plaxtol when the Basted Pump Station failed. This floods a resident's garden before flowing directly into the Bourne River.

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10. Hillview Close is the lowest point adjacent to the Maidstone Road Main Pump, which results in those properties being inundated with sewage when the pump failed, along with 51 Maidstone Road. This happened in 2013, 2014 and 2015. All of these properties have had to be fitted with non-return valves to keep the sewage contained when the pump fails.
11. In 2020, the failure of the Maidstone Road Pumps caused a pressure build-up in the sewer from the sub-pumping stations that feed the main pump station. Sewage burst through the tarmac and flooded the recreation ground. This was repeated in 2021.
12. In 2020, part of the original sewer blew out in Borough Green Road, just south of the M26.
13. In 2021, Southern Water gave up on the 100-year-old pumps in the Maidstone Road Pump House and replaced them along with all the control gear.



Figure 2: Recreation Ground flooded by sewage

When the new pumps were started, the pressure was too much for the ancient sewer, and it blew in Sandy Ridge, flooding the Rec and River Bourne. Multiple repairs and trials followed, and at least 5 more breaches.

14. In the same year, an overnight BT crew discovered sewage in their telecoms manhole. Further investigation revealed a sinkhole under the A25, as big as a Transit van. Southern Water CCTV'd the pipe and found a major blockage caused by pipe rot and earth collapsing into the pipe. That earth washed away, leaving the sinkhole. The A25 was closed, and traffic had to be diverted up the A20 and down the A227, causing traffic chaos on the Primary Road Network in surrounding villages.



Figure 3: Sewage pipes diverting the flow around the sewer failure

15. The A25 remained closed for months while Southern Water investigated the state of the 100-year-old sewer. Eventually, a 10m section of pipe was replaced, and a fibreglass liner was inserted over a large section. A pipe liner insert is an effective repair, but it decreases the pipe's capacity to move sewage. The A25 was reopened after 3 months.
16. In 2022, there was another breach on the original sewer outside 121 Maidstone Road.
17. In 2024, there was a failure of the original sewer on Wrotham Road, adjacent to Tolsey Mead.
18. In 2025, a section of the 1929 pipe had to be replaced outside Whatcote Cottages on Maidstone Road due to concrete disintegration.

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3.0 Conclusions on the Borough Green Network of Sewers

3.1 In 2006, Southern Water stated in their consultation response to TMBC's Local Development Framework that the Borough Green Region Sewer System was 'at capacity'. As a result of that Local Plan, an additional 171 houses were added to the network via a sub-pump station at Isle Quarry West.

3.2 Having to repair some of the 100-year-old system by inserting a fibreglass liner results in reduced capacity overall.

3.3 The sewer backbone has suffered decades of underinvestment and is now unfit for purpose. The multiple sewage spills are a testament to a failing system and are potentially a serious risk to public health.

3.4 The system was originally designed to service around 1071 dwellings. It is now pumping sewage from approximately 4,721 dwellings.

3.5 Surge storage tanks in the system are required to increase resilience.

3.6 The multiple failures resulting in sewage spills would indicate a lack of telemetry between the sub-pump network and the main pumping station in Maidstone Road. That is a serious control and fail-safe failure: downstream or upstream pump stations are operating without receiving a reliable "stop," "high level," "station unavailable," or "rising main failure" signal from Maidstone Road. If one station stops while others continue pumping, the resulting overpressure or uncontrolled inflow can cause a sewer burst, flooding, pollution, and potentially a public-health incident.

3.8 The immediate engineering controls should include:

- A hardwired or independently networked interlock so stations stop or switch to a safe mode when Maidstone Road is unavailable.
- High-level, pump-failure, power-loss, communications-loss, and overflow alarms transmitted to a continuously staffed control room.
- Fail-safe communications logic: loss of telemetry should not be treated as "everything is operating normally."
- Flow and pressure monitoring on the connected rising main, with automatic shutdown for abnormal pressure, flow, or emptying-time changes.
- Adequate emergency storage and standby power at affected stations.
- A tested escalation procedure, including automatic callouts and manual confirmation that downstream stations have stopped.
- A full cause-and-effect review and functional test, not merely an inspection of individual telemetry panels.

4.0 Conclusions on the Implications of Policy BG1 of the TMBC Local Plan

4.1 This allocation would deliver a major urban extension to Borough Green and Platt, comprising approximately 2,000 homes and around 33,200 sqm of employment floorspace.

4.2 Development would need to start in the west simply because the eastern quarries have years of quarrying outstanding.

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4.3 There is no capacity in the existing Borough Green Sewer Network, which utilises the Maidstone Road Main Pumping Station and remains connected to a 100-year-old sewer on the A227 and the A25, to convey waste from development arising under Policy BG1.

4.4 If the Policy results in attempts to divert waste effluent into a hundred-year-old system rife with raw sewage outages that frequently contaminate the public realm, then public health would be seriously at risk.

4.5 The BG1 Policy includes an end-to-end Relief Road running from Ightham to Nepicar on the A20. The Policy must also include its own independent sewer infrastructure to carry all waste arising from development at all stages of the BG1 allocation.

4.6 Full connectivity to the Ham Hill Sewage Treatment Works near Snodland will be required before any development is occupied, in order for the policy to be deliverable.

4.7 Given the current stage of quarrying across multiple quarries, it seems very unlikely that such a sewer network can be established to take the waste arising from development within the policy. The easy option is to further overload existing infrastructure and given the potential risks to public health, this would not be acceptable.

4.8 This further demonstrates that the BG1 Policy is premature and currently unfeasible. It should be brought forward in a future plan when the restoration of the quarries nears completion.

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