

**Arun Flood Forum
Questions and Answers
Meeting held on Monday 26 February – Southern Water presenting.**

Questions submitted prior to the meeting

Item No	Raised by	Question	Answer
1	MOS Parish Council	<p>Impact of climate change on the extent of high flood risk 3 area in Middleton Parish ADC's strategic flood risk assessment in 2016 shows a much greater high flood risk 3 area in Middleton Parish in 2111 due to climate change.</p> <p>Q1. When will more up-to-date information be available?</p> <p>Q2. Is the extent of the forecast high flood risk 3 area based on the central probability from the forecasting method?</p> <p>Q3. What are the 95th percentile confidence limits around this central probability? In other words, is it possible that the forecast area could be significantly greater than the central probability?</p>	<p>Response from ADC</p> <p>Q1. Arun District Council are in the process of updating the Strategic Flood Risk Assessment (SFRA) which will incorporate the latest available data. We expect to finish the initial climate change uplift work by Summer-Autumn 24. A more comprehensive update is expected in autumn 2025.</p> <p>Q2. The 2016 SFRA utilised the "Higher Central" allowances as the foundation for the assessment. This was in line with the latest guidance for Climate Change for Flood Risk Assessments (FRA's) and Strategic Flood Risk Assessments (SFRA's). For the sake of convenience I have copied forward the text from our 2016 SFRA</p> <p><i>"Hydraulic modelling was completed as part of this SFRA to provide updated climate change flood mapping in the Arun District for Flood Zone 3a. This modelling followed the latest guidance for climate change in FRAs/SFRAs released by the Environment Agency in February 2016 (and updated in April 2016). Climate change for fluvial events was based on the Higher Central estimates for the</i></p>

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			<p>years 2031, 2061 and 2111. Present day flood risk information is available for comparison. Arun District is within the South East River Basin District and therefore allowance are:</p> <ul style="list-style-type: none"> - 2031 = +15% flows - 2061 = +30% flows - 2111 = +45% flows <p>For tidal/coastal models, undefended case still water levels and defended case still water levels with wave overtopping simulations have been completed to inform future flood risk within the Arun District. Again, climate change allowance predictions are for the years 2031, 2061 and 2111, with present day outputs for comparison.”</p> <p>Q3. A percentile describes the proportion of possible scenarios that fall below an allowance level. For example; The Central allowance is based on the 50th percentile, the Higher Central allowance is based on the 70th percentile and the Upper End allowance is based on the 95th percentile. In all of these models there are projections that exceed the range. They are 50%,30% and 5% respectively.</p> <p>Data that is used to predict the impacts of climate change is constantly changing and the most up to date information will be used at the time of commission.</p> <p>Further information about climate change allowances can be found on the Gov.uk website here : - https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances</p>

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2	MOS Parish Council	<p>Sewage flooding from the sewerage network in Middleton Parish (Lidsey WTW catchment)</p> <p>Sewage flooding occurs regularly during rainfall at five or more locations in Middleton, to the extent that road tankers have had to be deployed. Sewage flooding affects people’s homes, roads and green spaces.</p> <p>But, Southern Water’s Clean Rivers and Seas Plan only recognises a single sewage flooding location (Ancton Lane) but this is regarded as “not in scope” and no corrective action is planned.</p> <p>Q4. What are the criteria for remedial action and are these criteria adequate?</p> <p>Q5. Untreated sewage contains pathogenic bacteria, viruses and parasites – what advice should the Parish Council give to residents to ensure their safety?</p>	<p>Response from Southern Water</p> <p>Answer to Q4</p> <p>The government’s Storm Overflows Discharge Reduction Plan was published in August 2022 and sets clear and specific targets for water companies, regulators and the government to work towards the long-term ambition of eliminating harm from storm overflows.</p> <p>The key targets are:</p> <ul style="list-style-type: none"> • By 2035, water companies will have improved all overflows discharging into or near every designated bathing water, and improved 75% of overflows discharging to high priority sites. • By 2050, no storm overflows will be permitted to operate outside of unusually heavy rainfall or to cause any adverse ecological harm. • Water companies will only be permitted to discharge from a storm overflow where they can show that there is no local adverse ecological impact. • Water companies must significantly reduce harmful pathogens, such as bacteria, from storm overflows discharging into and near designated bathing waters, by disinfection or reducing the frequency of discharges to meet EA spill standards by 2035. • Storm overflows will not be permitted to discharge above an average of 10 rainfall events per year by 2050. • Water companies will be required to ensure all storm overflows have screening controls. <p>For further details on how the plan was created, we have FAQs on our map and on the website which explain how the plan was created: FAQ's - Southern Water: Water for</p>

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			<p>life, Water and wastewater services for Kent, Sussex, Hampshire and the Isle of Wight</p> <p>Q5 – SW cannot answer</p>
3	Cllr Keir Greenway	In respect to the flooding events from early November, what is Southern Water’s view on the causes of this flooding? And to what extent is climate change, overdevelopment and maintenance of assets a feature?	<p>Response from Southern Water Sewer flooding is a complex issue. A combination of factors are at play. The original design of the system, most of Southern Water’s assets are separate systems. This means that domestic foul waste is conveyed in one piped system and rainwater in another system. However, there are some systems which are designed as combined systems with one system conveying both domestic foul waste and rainwater in the same pipe. Bognor has both separate and combined systems in the urban area. Over time more rainwater connections have been made to foul only systems causing these to become overloaded. The design criteria for foul systems is based on water consumption and not rainfall and as such the sewers are smaller diameter and will become overloaded by rainfall quicker than combined systems. In 2023 we suffered prolonged periods of wet weather which caused the soil to become saturated over time and this leads to a pervious area acting like an impermeable surface with rainwater running off the surface rather than soaking to ground. This increased runoff would in some locations find its way into the sewerage system and overload it. As soils and sub-soil becomes saturated there is a greater potential for water to seep into pipes below ground through leaking pipe joints. As occurrences of wet ground increase due to climate change there is a greater potential for pipe movement which may cause joints to move apart and further increase the potential for</p>

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			infiltration. Activities that increase the impervious area will increase flood risk, for example the paving over of front gardens to create off-road parking, the development of buildings on greenfield sites and the removal of natural land drainage to make space for development all increase the potential for flooding and for that flood water to impact the sewerage system. Increased storminess which is predicted to be an emerging pattern with climate change will increase flood risk. It is possible that recent events may become the more typical into the future.
4	Cllr Keir Greenway	To what extent has Climate Change impacted on Southern Water's ability to ensure we have a working wastewater system?	Response from Southern Water Climate change has a significant impact on the volume and speed of which surface and groundwater enters the sewer network. More intense rainfall events, as well as hotter drier summers turning permeable surfaces (e.g. fields) into hard surfaces for water to run off, all contribute. We need to re-green communities and use nature-based solutions to help live with the impacts of climate change, which will help to prevent flooding and storm overflow releases.
5	Cllr Keir Greenway	Do you agree that Southern Water need to improve their Communication during flood events? And do you also agree that, working collaboratively Communications could be more effective?	Response from Southern Water During flood events, and other incidents, we do our best to keep customers and stakeholders informed as the incidents progress. There is always room for improvement. Where incidents concern multiple agencies, collaboration on communications would be welcomed, and effective.
6	Cllr Keir Greenway	Across the flood affected wards represented on this forum, we had sewage overspilling into residents' homes, gardens, roads and watercourse. What are Southern Water's plans to resolve this in Arun and	Response from Southern Water There are 22 overflows in the Arun District, 11 require investment/work to achieve Govt. targets by 2050. Of these 11, 7 are planned for

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		how long can residents expect to start seeing improvements?	2025-2030 (subject to regulatory approval). These are outlined in Clean Rivers and Seas Plan
7	Cllr Keir Greenway	Shripney was particularly impacted by sewage overflows, what were the causes of this? When will Shripney see any upgrades? And what discussions have been ongoing with Southern Water and “Saltbox” to investigate their pumping station activity?	<p>Response from Southern Water The primary main cause of sewerage overflow is surface/ground water inundation. The highways drains and surrounding rife are clogged, the water table is high and water is unable to get away from the area when there is high rainfall. When surface/ground water builds-up it infiltrates the sewerage network (which is designed for foul-only flows) via the following pathways:</p> <ul style="list-style-type: none"> A) Through cracks or misconnections in the pipework B) Through Manholes C) Illegal or historical connections from domestic properties (roof drains etc.) D) Poorly constructed private networks discharging ground/surface water into foul network <p>We are conducting a project now (projected end of November completion) to address these pathways including:</p> <ul style="list-style-type: none"> A) ElectroScan Surveys to detect pipe ingress and re-lining (if required) B) Manhole surveys and sealing C) Connectivity survey to identify residential connections and mitigation D) Monitoring and confronting any non-foul flows coming from private networks (e.g. saltbox) <p>We are in contact with Saltbox and are making attempts to access their WPS, although this is private property. Our Network Enforcement team is looking into the possibility of gaining access. As of this week (w/c19/02/24) we are monitoring the flows from Saltbox into the Shripney</p>

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			Network to understand whether they are abiding by the terms of their discharge agreement. If we find flows in excess of their agreed rate, then we will begin a formal process.
8	Cllr Keir Greenway	What more could be done in Southern Water's view to improve the surface water drainage in these affected areas, which ends up in the Rife systems (Aldingbourne, Lidsey, Barnham etc.) or Southern Water's sewers.	Observation from WSCC: Not all the flooded areas have positive highway drainage (i.e., pipes and road gullies). Where roads have positive drainage, the systems often drain into the adjacent rife system. This winter, the rife systems have been so full of water that highway systems have not been able to drain. This water sitting in the pipes and road gullies results in additional silting of the system, which requires additional maintenance.
9	Cllr Keir Greenway	What additional support does Southern Water offer to build resilience in these previously unthreatened communities?	Response to follow from Southern Water, the Q&A's will be recirculated via the Arun Flood Forum.
10	Cllr Keir Greenway	Are Southern Water doing everything they can to manage new development and the new connections to the existing systems? Could this be improved?	Response from Southern Water Water companies are not statutory consultees on individual applications. This means that Southern Water often does not have the opportunity to provide information on known risks or risks arising from the proposed development, furthermore, LPAs and developers are not required to follow our recommendations. However, when we are consulted on an application, we will review all submitted information and respond accordingly on the individual aspects of the proposal. Furthermore, new connections for water and wastewater are reviewed via an application process and are not approved until we are satisfied with the proposals that have been submitted.

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11	East Preston PC	What can we do as a community to prevent future floods?	Agenda item for the second meeting.
12	East Preston PC	Who do we contact in the event of a flood, as accountability is an issue?	<p>Response from WSCC If flooding is causing a risk to life or property, then West Sussex Fire and Rescue Service (WSFRS) should be called. West Sussex CC has a role to investigate surface water flooding, Southern Water will investigate flooding from the foul sewer network and the EA will investigate coastal and main river flooding.</p> <p>Response from Southern Water All calls to SW need to go via the call centre so they are properly logged on 03303030368.</p> <p>Response from EA – All flooding from main river should be logged with the Environment Agency Incident Hotline on 0800 807060</p>
13	East Preston PC	What are the contingency plans?	Response from WSCC WSCC (both West Sussex Fire & Rescue Service and WSCC as the Lead Local Flood Authority (LLFA)) are happy to work with residents, flood action groups and parish councils to develop contingency plans.
14	East Preston PC	Is there anything we should do as a Parish?	Response from WSCC As above, WSCC are happy to work with residents, flood action groups and parish councils to map and understand local flood risk area and develop contingency plans.
15	East Preston PC	How do we pull all the information together from the National Flood Forum, Southern Water, Environment Agency, Arun Flood Forum	Actions from meeting held on 26 February items 4.2-4.4

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16	Cllr Carol Birch	There is a clear need to separate rainwater drainage from sewage water. If there a plan to do so in Arun? And how can this be achieved?	Response from Southern Water Yes, we have plans for this in Arun. Our Clean Rivers and Seas Plan sets out our proposed investment, solutions and timings to reduce rainwater into the combined sewer network; the plan has all our overflows including those in the Arun District. This will be a combination of separating surface water and/or slowing the flow of it down; not all rainwater needs to be removed but through natural solutions e.g. raingardens, wetlands, tree pits, swales etc. as well as rainwater harvesting e.g. slow-drain water butts, raingarden planters etc., this can be achieved. We have several Pathfinder projects testing these solutions between now and March 2025.
17	Cllr Carol Birch	Currently there are many releases of untreated water into the waterways and sea at times of high rainfall. Could storage for this excess be built/rented quickly to be stored until a low rainfall time when it could be treated? This would help smooth over the demand for treatment for wastewater at treatment works.	Response from Southern Water We currently have storm tanks on many of our assets and/or within the network, but due to the volume of surface water in the system during heavy rain, these may only prevent storm releases by 30-60minutes. This is the industry's default solution but is a very carbon intensive solution, both in the build of them but also the pumping of water around network. We're currently trialling nurse tanks at several sites however, which are temporary, mobile storage units. We'll share the results once the trial is complete. Unfortunately, for many storm overflows across our region, the land required to build the necessary storage to hold back the volume of rainfall, far exceeds the land availability and/or ownership on/near sites. Instead, the best way to prevent overflows is to slow down or prevent rainwater/groundwater entering the network at source.
18	Cllr Carol Birch	The current Local Plan has been around since 2018 and being prepared before this time. How had Southern Water developed its plan to meet the	Response from Southern Water Southern Water plans for investment in strategic infrastructure through the water industry's five yearly price review. Included in this review is

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		demand from the population increase this obviously would lead to? What had been planned and when would it be delivered? Clearly this is needed and with an increase in population Southern Water are collecting money from this increase in properties.	forecast population growth in each wastewater catchment across its region, which is evaluated against existing treatment capacity. Where demand is forecast to outstrip capacity within the 5 year time frame, investment is set aside for the necessary upgrades. Within Arun district there are 3 wastewater catchments: Ford, Lidsey and Pagham. In the current investment period (AMP 7 2020-2025) upgrades are being carried out to Lidsey and Pagham WTW to increase capacity to accommodate increases in population. At the time that the AMP7 investment plan was being prepared, upgrades were not needed to cater for growth at Ford. For the next investment plan, it has been determined that based on growth projections, upgrades to Ford WTW will not be required until 2029.
19	Cllr Carol Birch	Following on from the last question, as Arun are now reviewing our Local Plan how can we ensure that the demand for sewage treatment is met, or would Southern Water give us a strong response that would allow Arun to say that there need to be restrictions on number of properties that are given permission each year?	<p>Response from Southern Water Southern Water has a statutory duty to serve new development, and to object to development would contradict this duty. Southern Water operates its WTWs in accordance with environmental permits issued and enforced by the Environment Agency. The permits set the maximum volume of treated wastewater that the company is permitted to recycle to the environment (in terms of Dry Weather Flow , DWF). They also define the standards of treatment that must be met in order to protect water quality objectives.</p> <p>If the future release of treated wastewater at a WTW is anticipated to exceed the maximum allowed by the environmental permit (as a result of new development), Southern Water could apply to the Environment Agency for a new or amended permit. This would increase the volumetric permit headroom above that which is currently available. The Environment Agency would normally permit</p>

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			<p>increased flows provided the treatment standards are tightened so that the total load to the environment is not increased. This is in line with the "no deterioration" principle.</p> <p>It would therefore be inappropriate to use existing wastewater treatment capacity to determine the spatial strategy for Arun District, because additional capacity beyond existing permits could be provided that would mitigate the impact of new development. An amended permit might require investment at WTWs, but this is business-as-usual for Southern Water and not a "showstopper" to new development.</p>
20	Cllr Carol Birch	How much has the paving over of front lawns and other areas of garden impacted on the flow of rainwater into the drainage system making it even more difficult to manage the amounts of water that Southern Water are managing?	<p>Response from Southern Water Urbanisation (i.e. more hard surfaces in communities from roads, paved gardens, extensions, etc.) has had a significant impact on the volume of wastewater treated. This is because rainwater runs off these hard surfaces and enters the combined sewer network, risking it being overwhelmed and leading to a storm overflow release. Since water companies were privatised, there has been a c.30% increase in impermeable area in communities. The solution is to re-green gardens, install sustainable drainage systems (SuDS) along highways and in towns/cities, as well as encourage building inspectors to ensure that new driveways and extensions have separate surface water drainage.</p>
21	Cllr Steve Goodheart	The River Rife is the largest river in this area, over the last 20 years plus cutbacks of maintenance is now having a significant effect on the river. The reed-banks need cutting back & the sediment on the riverbed have not been dredge over the same amount of time. Both the reed off cuts and the	<p>Response from EA:</p> <p>The EA have a maintenance plan each year for the Aldingbourne and Lidsey Rife, and have done for many decades. A copy of the interactive maintenance plan can be found online here:</p>

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		<p>sediment waste need to be removed from the river edge.</p> <p>A local empty sand-pit facility is within a 5-mile radius is available with some arrangement this could be a good location for all the sediment to be stored.</p> <p>The river needs to be dredged from the Felpham/ Butlins bridge to the land on the northern side of the A259 ring road.</p> <p>My question is how much of a priority is the reinstatement of a maintenance schedule for the river?</p> <p>And who will be responsible for overseeing the maintenance?</p> <p>Please bring to the table a copy of the maintenance schedule.</p>	<p>https://environment.data.gov.uk/asset-management/index.html .</p> <p>The maintenance to main river we carry out each year includes cutting banks and weed control in channel, which we do with a combination of hand cutting, tractor & flail, Aebi mower and a weedboat where we can. We also carry out routine maintenance of our own assets (such as the pumps at Felpham), blockage removal, clearance of debris screens, and operational checks.</p> <p>We carry out maintenance of main rivers where we can subject to funding, but ultimate responsibility lies with the riparian owners to maintain their own section of watercourse - Owning a watercourse - GOV.UK (www.gov.uk)</p> <p>We have not dredged the Rifes here for many years for several reasons. Firstly, the benefits of doing so are limited (some areas would benefit, others would result in a higher risk of flooding). Secondly, the very high cost of dredging makes it an unsustainable solution, especially as the process would require repeating on a regular basis. We simply are not funded to enable this.</p> <p>The silt would be classed as a waste material, and potentially hazardous depending on any contamination. It would be illegal to take the material to a site without a permit (or exemption)</p> <p>The maintenance programme is overseen by the local Operational teams.</p>

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22	Cllr Steve Goodheart	<p>This is a proposal for a Lake to be built on 20 acres of land known as the Horse Fields opposite the entrance to the Felpham school & leisure centre, Bognor Regis.</p> <p>This facility would have many uses such as flood relief especially at such times of flooding in the area.</p> <p>Other uses would be as a recreational facility with watersports and other activities, creating a tourist destination. Along with supporting wild life and landscaping with tree planting etc</p> <p>The financial benefits that this type of investment would bring to the district would be amazing with the increase in tourism and the increased protection for local & the national businesses in the area.</p> <p>My question is, has this type of project been discussed? If it has, what was the outcome ?</p> <p>What was the make up of the group who made the decision?</p> <p>If it hasn't been discussed before please add it onto the agenda</p>	<p>Response from ADC These proposals are under investigation.</p>

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23	Cllr Gill Yeates	<p>This is really to check that my understanding of the events agrees with Southern Water's view. Back in 2012, there was extensive flooding in early July which affected several areas in Bersted. The actual duration of the flood event was fairly short. Although five homes in Shripney village suffered significant internal flooding. Shortly afterwards, there was considerable work done, mostly by WSCC, to clear the ditches and drains and, in some cases, make these deeper or wider. Since then, there have been sporadic flood events which have affected roads and gardens, but not internal flooding of homes.</p> <p>For Shripney village, the pump in the Shripney Lane Pumping Station (SLPS) failed in Spring 2022 and Southern Water hired an external pump. However, this was not sufficient and you kindly arranged for tankers to remove excess water. This situation continued for around a year until Summer 2023 when the new permanent pump was installed. However, the manhole covers towards the A29 end of the lane periodically surcharged, even after relatively light rain. This became an almost permanent situation following storm Babet in mid-October and, after storm Ciaran, you kindly reinstated the tankering. Whilst the tankers have been needed, they are causing a disturbance to the residents near the pumping station as they cause noise and light pollution and operate through the night when needed. Local residents are assuming this is a temporary situation, although it has been going on for nearly two years now. We also understand that works to line/repair the sewer at the higher end of the lane have been done to try to</p>	<p>Response from Southern Water I did suggest that it might be better to remove the water at source, ie tanker it away from Saltbox directly, rather than into the Southern Water network. This has not happened and I would like to know why – would it have been possible, practical and legal to do so?</p> <ul style="list-style-type: none"> • We do not own the station at The Saltbox development so have no legal right to tanker from there. We also have no access to the site as it is a privately owned / managed site so any works there would need to be done by approval of the owners. • Previous communications with the owners have been unsuccessful and previous site meetings arranged with them have been avoided by them. • Would it improve the situation of flows were removed? – it is hard to tell because we've never actually been able to isolate or turn off the flows from Saltbox WPS. We do know that historically there was flooding in this catchment before the Saltbox development was added so one could argue that removing the flows will make no difference, other than to reduce the amount of excess water being deposited into our network. <p>Other areas which have flooded in and around Bersted include Addison Way and the Durban Road Industrial area (just inside the Bognor Regis Town area). All of these are in the vicinity of Saltbox. Is there any link? If not, what are the causes of the flooding in these areas and is the sewerage network part of the problem and the solution?</p> <ul style="list-style-type: none"> • There are no links between Addison Way and Durban road with the issues at Shripney, not in terms of sewer networks or pumping stations.

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		<p>alleviate surface water ingress. Unfortunately, this work and the new pump have not resolved the situation.</p> <p>Between the 2012 and the start of the current train of events in 2022, the commercial development at Saltbox has been partially built and occupied. As I understand it, the estate discharges water from its own pumping station to the one at the Robin Hood on Shripney Road. This then routes back to the one at Shripney Lane. Myself, and other residents of the village have been told by Southern Water personnel and their contractors, that they believe the source of the excess water is from Saltbox. I did suggest that it might be better to remove the water at source, ie tanker it away from Saltbox directly, rather than into the Southern Water network. This has not happened and I would like to know why – would it have been possible, practical and legal to do so? Would it have improved the situation in the village?</p> <p>The flooding over this Autumn/Winter period has been the most extensive I think we have ever seen. The lowest part of Shripney Lane (at the A29 end) has been under water almost continually. Damage is being caused to the road surface and sewage is being washed into the small local main river (the Shripney Manor Ditch System). Near to the pumping station, there has been a major leak of sewage which would seem to follow the route of manholes which come from the Robin Hood Pumping Station. We have not</p>	<ul style="list-style-type: none"> • Shripney village is a small self-contained wastewater catchment that passes flows down to North Bersted. Nothing else connects to it IE: Addison Way or the Durban Road areas. • They all share common causes of flooding – ground water/lack of natural drainage as ditch systems and rife systems have had no maintenance for decades. • Addison Way has had as much work done to seal the sewer as Shripney village has had done since the start of 2022. But this doesn't seem to have added much benefit.

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		<p>previously seen this and it was several inches deep, making the footpath impassable and causing a considerable foul smell in the area, and was presumably a health hazard. Southern Water arranged for this to be cleaned up and the gravel on the footpath replaced.</p> <p>Other areas which have flooded in and around Bersted include Addison Way and the Durban Road Industrial area (just inside the Bognor Regis Town area). All of these are in the vicinity of Saltbox. Is there any link? If not, what are the causes of the flooding in these areas and is the sewerage network part of the problem and the solution?</p>	
24	Cllr Gill Yeates	<p>For Shripney village, what are your short-term plans to resolve the existing situation? What are your medium-term plans to cope with the growth already granted planning consent for? This includes new houses on the eastern side of the A29, either more houses or a large care home adjacent to the Robin Hood, the next phase(s) of the Saltbox development as this is probably less than half built now, and the major Barnham Eastergate Westergate (BEW) development immediately to the north which is expected to be 3-4000 dwellings?</p>	<p>Response from Southern Water Short term solutions are largely as per Q7 response:</p> <ul style="list-style-type: none"> A) ElectroScan Surveys to detect pipe ingress and re-lining (if required) B) Manhole surveys and sealing C) Connectivity survey to identify residential connections and mitigation D) Monitoring and confronting any non-foul flows coming from private networks (e.g. saltbox) <p>However in addition we are also conducting a thorough investigation and upgrade to Shripney Village WPS, with an inspection and bench test happening on 22/02/24. The project will finance and deliver any upgrades required to get the WPS to perform at its maximum designed rate to move foul flows away from Shripney as quickly as possible.</p>

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25	Cllr Gill Yeates	Does the Lidsey treatment works make discharges of untreated sewage into the river and ditch network? If so, how many times in 2023 was this done? How many discharges were permitted and how many were not? Will the amount of development in the area mean that you will seek to increase the number of permits you are granted?	<p>Response from Southern Water Information on 2023 spills won't be released until the end of March 2024 as it hasn't been validated yet. You can look on our website Flow and spill reporting (southernwater.co.uk) for 2022 data and 2023 data at the end of March.</p> <p>If our wastewater treatment works receives more rainwater and wastewater than we're able to process or store, our network could back up which could cause flooding via manholes, drains and toilets. To prevent this, where we can, we store and filter the surplus through a screen before releasing it into the environment, this is called a spill or a storm water release(also referred to as a spill). A stormwater release is wastewater, heavily diluted with rainwater and surface water run-off. Water companies are permitted by the Environment Agency to only spill under strict conditions in order to protect homes, protect the environment and manage storms. Sometimes, we also have to spill if wastewater stops moving through our network, for example, due to a pump failure. Again, wastewater with nowhere else to go can flood homes and communities, so we release it to prevent this happening.</p> <p>Will the amount of development in the area mean that you will seek to increase the number of permits you are granted? An increase in development wouldn't increase the number of permits, but we may need to review existing permits to ensure the conditions of the permit are still complied with and to ensure no deterioration</p>

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			in the receiving water. This would be done with the agreement of the Environment Agency.
26	Cllr Gill Yeates	<p>The Shripney Manor Ditch System (SMDS) is bisected by the sewer along Shripney Lane which was installed in the 1980s. The manhole at this point and the last one towards the junction with the A29, regularly surcharge. The junction of Shripney Road (A29) and Shripney Lane is at or below sea level. Would it be possible to divide the sewer in Shripney Lane so that it stops before it crosses the SMDS? Could the houses which connect on the other side (maybe just one or two) be connected to the main sewer along Shripney Road instead? Even in times when it is not flooding, the gravity effect causes water & sewage to flow down towards this lowest point, perhaps because the SLPS pump cannot be turned up high enough to move the water at such a distance? If this is possible, then it could have far-reaching benefits – reconnecting the SMDS which helps to drain a considerable section of the A29. With the massive amount of new development, having this road closed so often each winter is not practical. The SMDS could play a key role in ensuring that the water moves away rather than saturating the ground which causes problems when heavy rain then falls and has nowhere to go.</p>	<p>Response from Southern Water Would it be possible to divide the sewer in Shripney Lane so that it stops before it crosses the SMDS?</p> <p>Dividing the sewer and diverting some of the properties on Shripney lane will achieve nothing, in fact, if we were to excavate to relay those few houses from Shripney Lane out toward Shripney road we would without fail create another low spill point from the flows coming from the Southern section of Shripney Road and along with it, the flows from Saltbox development.</p> <p>The SMDS requires de-silting and clearing along with all of the ditches / streams that connect to it / come from it. Only then will rainfall and runoff have somewhere to flow. Clear watercourses will also give ground water in the area somewhere to flow through.</p>
27	Cllr Gill Yeates	<p>The Bersted Ward is low lying so residents are very concerned about the effects of climate change and development. What plans do you have to combat this, given that the system is already struggling</p>	<p>Response from Southern Water The majority of the sewer system in Bersted is designed as a separate system and there is an extensive network of surface water sewers draining the area. However, we do know that in rainfall and</p>

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		<p>now? Can storm water and foul water be separated and dealt with separately? Perhaps by storing the surface water and discharging later or holding it for the longer term to allow infiltration?</p>	<p>particularly in prolonged rainfall when the soil becomes saturated and the groundwater levels rise, water does find its way into the foul sewerage system causing it to become overwhelmed which impacts residents by flooding and restricted toilet use. The issues in Shripney village is a case point.</p> <p>It is likely that the majority of additional flows is due to the saturated ground and that flow is entering the system due to a combination of :</p> <ul style="list-style-type: none"> • inundation (water entering the system through manhole covers when they become submerged) and • infiltration (water entering through leaking pipe joints and manholes) • surface area directly connected to the system <p>Separation of directly connected area may not deliver a large reduction in flow due to the separate nature of the system, however, this should not be discounted as the ability to deliver this may be straightforward as there are surface water sewers to connect to. The more difficult piece to resolve will be the infiltration aspect, this will require sealing of long lengths of the system both public and private sewers. The inundation might be achievable through education and manhole cover sealing. Another consideration is whether land drainage is holding natural levels high and would land drainage management deliver wider benefit. A multi-agency approach should be considered.</p>

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28	Cllr Gill Yeates	In order to represent our residents, and allay their fears, I think it would be really helpful if each Parish were given a map to show all of the pumping stations and the direction of flows. In this way, we can better respond to planning consultations and highlight issues with our local knowledge. Would this be possible please?	Response from Southern Water We would need time to look at this and would need to know precisely which catchments are needed.
29	Cllr Gill Yeates	Would boreholes in North Bersted and Shripney to monitor ground water levels be useful? If these have telemetry to upload data, patterns might become apparent and enable occasional tankering to take place in the longer term, once all of the short-term issues have been resolved.	Response from Southern Water Boreholes would give a greater indication to the ground water levels.
30	Cllr Gill Yeates	When your planning service returns to the UK, being currently based in India, will the team be better placed to respond to planning application consultations? Will they take full account of the cumulative development proposals, regardless of numbers in individual applications?	Response from Southern Water Water companies are not statutory consultees on individual applications, and this means that Southern Water often does not have the opportunity to provide information on known risks or risks arising from the proposed development, furthermore, local planning authorities and developers are not required to follow our recommendations. Our Planning Consultation team are based offshore and respond to all planning consultations Southern Water are consulted on, but at present there is no proposal to bring this service onshore. The Future Growth Planning team (FGPT) are located in the UK and support the offshore team and can be contacted via email at southernwaterplanning@southernwater.co.uk
31	Cllr Gill Yeates	Can I ask for a firm commitment that no additional flows will be directed to the SLPS? If additional pumps, or increasing the power of the existing one(s), is not feasible, then clearly it will not be	Response from Southern Water Flows from Shripney Lane WPS are treated at Ford WTW. Our engineering teams are currently undertaking a project to review holistic growth in the Ford sewerage catchment to determine the

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		<p>possible for it to handle more. I am particularly concerned about the next phase of Saltbox, the almost doubling of the number of homes in the village, and the strategic development in Chalcraft Lane (expected to be 2500). The latter is, I believe, intended to discharge to the Ford Treatment Works. As the SLPS directs flows to Ford, I am assuming that it will not be part of that plan.</p>	<p>impact of all development and any improvements required to accommodate the increased flow. We cannot commit to no additional flows to Shripney Lane but we will work with the developer to ensure that the sewerage system can accommodate the development flows at their proposed connection point.</p>
32	Cllr Gill Yeates	<p>Have you looked at the weather data for the past few years, perhaps between 2012 and now, to ascertain whether the flooding experienced this year is definitely as a result of rainfall patterns rather than capacity issues in your network?</p>	<p>Response from Southern Water We have not undertaken detailed analysis on this yet. However, a general summary from the Met Office of 2023 :</p> <p>2023 in weather Official blog of the Met Office news team</p> <p>A change in wet weather</p> <p>With the UK's sixth wettest March, sixth wettest July and equal sixth wettest October on record in series.....from 1836, overall this has been a wet year for most areas....</p> <p>Seven storms have been named by the Met Office's group since 1 September, the fastest start to a storm naming season since it began in 2015, with the run of seven storms including Agnes (late September), Babet (mid-October), Ciaran (start of November), Debi (mid-November), Elin and Fergus (early December) and Gerrit (late December).</p>

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			<p>Response from WSCC What we are seeing is a change in the weather patterns i.e., hotter summers, wetter winters.</p> <p>Annual total rainfall for the last 10 years has generally been the same. However, 2023 and the start of 2024 has been an exception. See rainfall figures below for the last five months (October 2023 – February 2024):</p> <p>Long-term average rainfall for West Sussex– 410.7mm</p> <p>Actual rainfall totals by District: Chichester – 737.3mm Bognor – 817.2mm Worthing – 797.2mm</p> <p>It is of note that the typical annual rainfall for West Sussex is 692.3mm</p> <p>Response from EA: In addition to the 8 named storms (up to Henk in January) there has been over 260% of the long term average rainfall in February. The closest groundwater borehole which we have long term analysis for is at exceptionally high levels.</p>
		<u>Questions/concerns raised during the meeting</u>	
33	Cllr Trevor Bence	Queried the power Southern Water had with regards to connections on new developments. Understood that SW can refuse connections, for up to 24 months	Response to follow from Southern Water, the Q&A's will be recirculated via the Arun Flood Forum.

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		if the mapping service shows sewer inadequacies. Are there any examples of when refusal has been made?	
34	Cllr Gill Yeates	Referral made to the slide relating to the ongoing programmes and waste water treatment works at Lidsey and Bognor and the use of wetlands, have these areas been identified already? Clarification on what is meant when they say 'Nutrient neutrality is blocking growth' and phosphate level reduction.	Response to follow from Southern Water, the Q&A's will be recirculated via the Arun Flood Forum.
35	Cllr Simon McDougall	Concerns raised that if we have seen at least four events that are termed as 1:100 event. Will the plans presented be sufficient in ensuring the sewers can cope, as recent events illustrated that they couldn't. What do the greening community proposals mean Concern that the SUDS are not working effectively in the area causing issues at Addison Way	Response to follow from Southern Water, the Q&A's will be recirculated via the Arun Flood Forum.
36	Cllr Paul Bicknell	Query raised regarding pipe sizes, if the developer knows that there will be more development adjacent to the current, pipe size should be increased. Clarification sought on whether developers can put rainwater directly in the sewers, advised they are able too. Slide 16 in the presentation updates on the Shripney Village – Group 1 Flooding scheme, question was asked as to when we can expect this to happen and	Response to follow from Southern Water, the Q&A's will be recirculated via the Arun Flood Forum.

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		that when the report is available this is shared with the Arun Flood Forum.	
37	Cllr Sue Wallsgrove	Clarification sought from Southern Water that the excess nutrients spread in the fields runs back off into the rife and into the sewage system again. Geology of the area needs to be understood and taken on board.	Response from Southern Water The principle here is that sludge is provided to farmers to spread to land and for this to be mixed into the soil to replenish nutrients taken up by plants as a more natural fertiliser than chemical. Not that it will run off the land into the rife and the sewerage system. The rife doesn't flow into the sewerage system.
38	Cllr Kier Greenway	<p>How confident are Southern Water in delivering the business plans?</p> <p>The presentation did not refer to the flood event and maintenance of assets such as the rife and how this impacted on Southern Water, how did the maintenance of EA assets effect the consequences of storm Ciaran</p> <p>The lining work taking place in sewers, where will the water go if they are lined.</p> <p>Reference in presentation to Elmer Sands, what kind of collaboration and support is needed by the others and what does this look like?</p>	Response to follow from Southern Water, the Q&A's will be recirculated via the Arun Flood Forum.
39	Cllr Simon McDougall	Has the Saltbox development been taken into account following the effects of storm Ciaran	Response from Southern Water The saltbox development should be a foul only discharge into the sewerage system not rainwater. The rate, type and volume of flow currently being discharged is under review between Southern Water and the developer.
40	Cllr Amanda Worne	There were significant amounts of flooding at Yapton and Climping which had an impact on the village and school. The pond has previously been silted and	CM from Southern Water confirmed that she will meet Cllr Worne on site.

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		cleared. Clarification sought that Southern Water would keep Yapton and Climping on their radar with the developments currently underway.	
41	Cllr Roger Elkins	<p>Following the intensity and increase in our rainfall and the impact this is having on our drainage systems. Are the design criteria now fit for purpose and correct.</p> <p>Question raised regarding the rifes in Ferring, believe maintenance schedules and biodiversity changes have been made and would an update on that.</p>	<p>Response from Southern Water From our analysis to produce Drainage and Wastewater management plans we take the impact of climate change into account. This does show that the changing climate with more intense summer storms and wetter winters predicted is more impactful on sewerage systems than the increased flow due to population growth. When designing sewer systems Southern Water use the latest guidance from the UK Climate change impact reports and recommendations. Currently this recommends that standard design rainfall profiles are elevated by 20% in both volume and intensity to make allowance for climate change. We will continue to stay close to the meteorological research and adapt our design standards as required.</p> <p>Please refer to Q21 re the EA maintenance schedules.</p>
42	Cllr Jackie Pendleton	<p>Raised many concerns, and stressed the importance of ensuring that all agencies are maintaining their assets and working in conjunction with each other to ensure that residents do not have any type of flooding.</p> <p>What is in the 5 year strategy</p>	This requires a multi agency approach and see the outcomes of this group informing the 5 year strategy
43	Cllr Carol Birch	Expressed concerns that many of the solutions will not be implemented for some time, for example how long will it be before there is no more sewage in the sea.	Response from Southern Water Implementation of solutions is dependent on many factors including cost benefit, affordability and priority. Some requirements such as the reduction of spills from overflows are mandatory as

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			<p>they are written into Law. DEFRA in the last year have announced a phased reduction of spills to rivers and seas and Southern Water along with all other water companies are required to deliver these improvements in line with DEFRA's timescale. Failure to do so may lead to fines for water companies. It is important to note that although the DEFRA requirement is to reduce spills it is not to reduce to zero. This is because it is recognised that where these systems are combined i.e. domestic waste and rainwater in the same pipe, there will always be a storm that occurs that is greater than the system design and on occasions the overflows in the system will operate to prevent flooding of properties.</p>
44	Cllr Steve Goodheart	<p>Stated that there needs to be a maintenance schedule for dredging the rife, and would like to understand what type of scheduling has been discussed. What will happen to the sediment when the rife is dredged. All contributing land owner ditches should be inspected by law and prosecutions made.</p> <p>Queried if there was an agency co ordinating local volunteers that can be used in a response to a flooding incident, who can then liaise and work with those effected in the community.</p>	<p>Response from EA:Please see detailed reply to Q.21. Riparian owners are ultimately responsible to maintain any main river or ordinary watercourse running through or adjacent to their land to comply with the responsibilities of owning a watercourse: Owning a watercourse - GOV.UK (www.gov.uk). Please note there is no legal duty on anyone to maintain flood risk assets or watercourses.</p> <p>The Environment Agency does not have any local arrangements with volunteers. This may exist through other local groups such as Flood Action Groups. This approach could be considered through the actions and decisions in the Flood Forum.</p>
45	Cllr Jaine Wild	<p>In 2022 Nick Gibb MP and several farmers visited the Lidsey Waste Water Treatment Plant to express concerns to Southern Water about the release of untreated sewage into the Lidsey Rife during times of high rainfall which then spills into farmland. News reports of the meeting state there were 10 releases in</p>	<p>Response from Southern Water Increasing the capacity of the WTW is part of the investment here, we are also increasing the storm storage capacity and we propose all spills from the storm tanks will be discharged to a wetland for increased treatment prior to discharge to the Rife. Once the scheme is delivered spills to the Rife will be less</p>

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		<p>January of that year. Southern Water stated at that meeting they were going to increase capacity of water treatment from 129 litres to 203 litres per second.</p> <p>Does that mean there will be no further releases of sewage into the Lidsey Rife?</p>	<p>frequent and less impacting. An issue that may remain is the ability of the Rife to drain- a key aspect for the flood forum to consider.</p>
46	Cllr Jaine Wild	<p>In 2014 the Aldinbourne Rife reached a record height of 1.14 metres. But on the 3rd November 2023 it reached a new record 1.69 metres.</p> <p>The Environment Agency have already informed me that the Aldingbourne Rife pumps supplement the natural outflow of water at low tide, but the capacity for the catchment to drain via the gravity outfall is reduced with high neap tides.</p> <p>With sea levels expected to rise by up to half a meter over the next 50 years would you advise that flooded areas such as the Tesco's car park and electricity substation adjacent to Shripney road are raised in height.</p>	<p>Response from the EA: The Tesco car park is designed to flood to a certain extent and acts as a flood storage reservoir. Any land raising would naturally displace flood water into other areas. We have been discussing the resilience of SSEN's infrastructure with the suppliers and have been giving them advice on their flood risk. The protection of electricity supply assets is the responsibility of SSEN</p>
47	Cllr Jaine Wild	<p>Raising land in the flood plains. Recently the Bognor Gliding Club has raised the land by at least half a meter on what was the former Lec Airfield site next to the Lidsey Rife. We have seen the land raised in an unauthorised redevelopment of land of the east of Health Place, North Bersted, and the Amazon Building was erected on the flood plain and the land has been raised by well over a meter. Can we ensure that no further raising of land takes place in the flood plain?</p>	<p>Response from the EA: The Environment Agency is a statutory consultee for planning applications in high flood risk areas. Any development in these areas needs to demonstrate that the development is safe for the lifetime of the development and that it does not increase flood risk elsewhere. Applicants are required to demonstrate this. Land raising has the potential to increase flood risk elsewhere through the displacement of flood water and reduction in the floodplain. The local planning authority are ultimately responsible for planning decisions and for deciding enforcement action through the planning system.</p>

