Coastal ACTION

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TACKLING WATER POLLUTION
IN A COASTAL COMMUNITY

Improving Water Quality in Hastings & Rye

Practical Measures to Protect Public Waters in Coastal Communities.



FINDING SOLUTIONS TO THE
POLICY PROBLEMS HARMING
COASTAL COMMUNITIES

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Pamphlet – Coastal Action. Author: James Prentice

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Water Quality and Pollution.

Sea and River water pollution:

The problem of pollution in our seas and rivers is vast. In 2022, the National Labour Party revealed that the number of sewage discharges more than doubled, from 14.7 per overflow in 2016 to 35.4 in 2019. Labour Party analysis also revealed that nationally, since 2016, a new sewage dumping occurrence took place an average of every two-and-a-half minutes, with rivers, lakes, seas, and beaches having gone through 1,276 years' worth of raw sewage in just seven years[1].

This problem is particularly acute along our coastline. In terms of Hastings, Environment Agency data demonstrated that in 2022, raw sewage was discharged into Hastings & Rye for 4,240 hours. This is equivalent of there being a continuous flow of sewage for 6 months of the year. This research also found that 612 sewage dumping events took place locally last year[2]. This equates to a new sewage spill every 15 hours on the Hastings coastline. Worryingly, this problem has increased in recent years. In 2017, 13.2m cubic meters of water were pushed into the sea, whilst in 2021 it was 15.3m[3]. With this water being mixed with raw sewage, again, this shows how bad the problem is within the Hastings coastline. To make matters worse, Hastings has inherited historical problems that make sea pollution worse than in most areas. In 1934, a floodwater overflow was installed across the Hastings and Bexhill coastline, with 15 pipes being installed that allowed the release of raw sewage into our waterways[4]. As we have inherited this historical problem, this explains the high levels of raw sewage being dumped in the Hastings coastline.

This pollution of raw sewage affects not just the environment, which is bad enough, but also the people who live and work in the area. In some parts of the southeast, businesses entirely reliant on holiday trade have effectively been shut down by pollution incidents[5], leaving hard-working business

owners without an income through no fault of their own. Yet, as bad as this problem is, the full scale of the problem remains unknown. Despite knowing how many spills occurred and how long these spills lasted, without knowing the volume of the spills it is hard to know how much the pollution is being diluted when entering our seas and rivers. This is because the current system, 'Beach Boy', only displays the duration of charges and where they occur[6], which gives limited data and transparency, as it does not show the extent to which the spill was contaminated. Therefore, the problem could be worse than first imagined, as the concentration of sewage in the water that is pushed out to sea is not known. This means there could have been large volumes of highly polluted water pushed into our seas and rivers, and we would not know about it. In other words, we know that all spillages are being mixed with sewage and other pollutants, but we simply do not know how much these pollutants are diluted. The environment agency gets around this problem by installing volumetric devices on its infrastructure and systems, which it has already done for more than a decade. These devices record the volume of water that passes through a drainage system and give a much better indication of the level of pollution[7]. For example, this technology can give the reading of the cubic meters of water that passed through a point, and then to know the full extent of the pollution, this can be multiplied by the duration of the leak. Once the concentration of pollution is known, a very accurate figure of the amount of pollution released into a water stream can be recorded. Yet, the current system employed by Southern Water does not use this volumetric technology, leaving coastal communities unaware of how much pollution is released into local seawaters. This has led to local campaigners urging for greater action to be taken on the issue.

BBC Southeast News has interviewed swimmers who assert that they have seen how bad the pollution is and report that the problem is much greater than water companies make it out to be[8]. Some of these swimmers have been ill and are unsure where they would have picked up illnesses from, leading some working in the environment agency to think that illnesses may be spreading by people swimming in polluted waters[9]. Recently, the BBC has

reported that the swimming stage in the Bexhill Triathlon was cancelled due to pollution[10], and such stories have led to one in four swimmers avoiding going into sea and river waters altogether[11]. Vitally, BBC Southeast News has also reported that individuals who swim in the sea for mental health reasons within the Hastings area are now considering avoiding the sea over fears they could contract a worse illness[12]. Those who are doing the right thing by exercising to keep themselves both physically and mentally healthy should be rewarded for such efforts, not fearing the consequences of taking such action. Therefore, this is not just an environmental issue; it is also very much a public health concern.

Whilst the full extent of the pollution being released into our seas and rivers remains unknown, what we do know is that major pollution events have occurred. For example, in the Bulverhythe area, a main sewage storage pipe underneath the old bathing pool site burst and caused flooding that Southern Water admitted contained "high levels of faecal pollution"[13]. The repair of this pipe took several weeks to complete, and the fleet of vehicles needed to fix the pipe damaged a nearby playground, further damaging local services. This flooding also produced damage to beach huts, and 20 houses experienced harm from the incident. Further, in the Bulverhythe beach area, there have been several incidents in the last couple of years where the beach has been sectioned off due to pollution incidents[14].

Occasionally, pollution incidents are not fully reported in an attempt to deliberately mislead the Environment Agency. According to a judge who recently reviewed a pollution incident, Southern Water attempted to deliberately mislead the environment agency in a pollution incident that killed more than one thousand fish near Gatwick airport[15]. Further, the Environment Agency has described the number of severe pollution incidents caused by Southern Water as "exceptionally high". From such incidents, Southern Water has been rated a poor two stars out of a possible nine and is currently assessed to be the second worst-rated water provider in the country[16]. This makes the southeast of the country particularly vulnerable to water pollution problems.

The scale of this pollution will keep rising until Southern Water is challenged and forced to improve the drainage systems. Looking at Southern Water's own yearly reports, it is clear that Southern Water has not made a clear effort to tackle the problem. Currently, water leakages for pipes are well over the specified "acceptable" limit. Leakages stand at 94.9 megaliters per day, with the three-year average from 2019-2021 being 98.5[17]. This is well over Ofwat's generous target of 93.9 megaliters per day, meaning millions of litres of usable drinking water are being lost each day due to pipes not being maintained to a good enough standard. Despite being fined £7.8 million, Southern Water did not hit its target for repairing pipes when data was last recorded, in 2021.

This is particularly problematic for Hastings, as the area simply can't afford to lose many more water sources, as the number of pumping stations that exist to extract water into the town has decreased. This makes us more reliant on water sources from elsewhere in Sussex. For instance, a water pump house in Alexandra Park was turned into a café with no alternative station being provided. This has required water to be pumped from further afield, again raising costs and making Hastings more reliant on fewer pipes pumping water from greater distances. This has made Hastings particularly reliant on one pipe. Indeed, in the last year, a failure in this very pipe, specifically within St Helens woods, a woods located just east of the town, left Hastings without water for five days during the peak holiday season[18]. This left the town reliant on trucks bringing bottled water into the town for days, and had a large negative economic impact on the town. This also happened in Rye the previous year, where hotels and businesses reported heavy losses due to water outages[19]. In both outages, businesses were not adequately compensated, showing how Southern Water's inability to ensure a consistent water supply is hurting Hastings & Rye economically. As no new reservoirs have been built in the UK since the water industry was privatised in 1989[20], this only again presents the possibility of water shortages for communities reliant on a limited water supply. This was again realised when a failure at a pumping station at Darwell left 1,800 homes in Ore completely without water, with smells of chlorine emanating from taps[21]. Therefore, Southern Water's

inability to maintain the pipe infrastructure not only risks water shortages and more economic damage but also presents environmental risks.

One reason why such pipe failures keep occurring might be because Southern Water's target of 118.3km of pipe being repaired in a year is often not met. For example, in 2021, they were far off this target, only repairing 101.5km[22]. Further, from 2012 to 2021, Southern Water's capital expenditure, the amount they invest in maintaining their infrastructure, declined from £466m to £424m[23]. Additionally, there have been periods where the total profit Southern Water recorded exceeded the amount they spent on capital expenditure. In 2015, Southern Water spent £298m on infrastructure investment, but it recorded £331.5m in profit after all expenditure was taken into account[24]. Also, Southern Water has been forced to increase its operating costs (expenditure designed to limit and clear pollution spills) in recent years to cover its past lack of investment. Crucially, this all signals a lack of maintenance in the pipe infrastructure, potentially explaining why Hastings & Rye have been subjected to repeated water shortages.

Moreover, this lack of investment in such costs has resulted in large increases in pollution incidents[25]. In 2015, there had only been 150 Category Three incidents, but by 2021, this had risen to 375, helping to explain the worsening pollution problems within Hastings. Moreover, the company recorded an increase in Category 1 & 2 pollution incidents, the most serious level, from four in 2020 to twelve in 2021[26]. Worryingly, Ofwat's findings labelled Southern Water as one of the worst offenders for this type of pollution and confirmed that they are one of the three companies that have been above the set limit allowed for pollution incidents[27]. Because of this lack of maintenance, Southern Water does not meet Ofwat's targets for the number of sewer collapses, with 314 incidents per year. Southern Water were way over the limit and was fined £4.1m[28]. With pipes still not being maintained to a sufficient level, Ofwat has noted it is likely pollution incidents will continue to increase, and Southern Water will continue to be one of the worst offenders in mixing clean water with waste. Finally, Southern Water has failed to meet many performance targets, such as water quality, water pressure, sewer

flooding prevention and supply interruption targets, causing them to be ranked 16th of all the 17 water companies[29]. They also have a record of customer complaints, yet are rarely fined and continue to pay out very large dividends and bonuses to senior management. Consequently, all the evidence shows that change is needed, but there appears to be little willingness from the water companies to change their poor standards and practices.

Groundwater pollution:

Although the pollution allowed into our seas and rivers is awful enough, it gets worse. We are also polluting our groundwater systems, the very water we use for drinking and that sustains wildlife. Our drinking water quality has thankfully been more transparent than the reporting of sea and river pollution. Although the scandal of sewage pollution in our seas and rivers is a fairly new phenomenon, individuals at the Environment Agency have published information warning about the worsening of our groundwater quality for decades[30]. For example, individuals in East Sussex can obtain information about the water quality in their locality by searching the South Downs area on the Environment Agency website. This open source reveals that local water companies have been allowing the pollution of groundwater sites for years, with the Environment Agency recording pollution levels that could potentially be harmful to dogs and even humans[31].

Within Hastings, there have been pollution spillages into well-known groundwater sites that people cherish. Alexandra Park is a Green Flag award-winning public garden that is 2.5 miles long, contains 44 hectares of rare tree species, wild animals, fishing ponds, walking lanes, a football play area, a children's play area and most importantly, a system of fresh groundwater sites[32]. This water filters through the entire park, connecting a series of large and small ponds that sustain wildlife people enjoy whilst on their morning strolls. These ponds are partly fed by Old Roar Gill, a natural waterfall site that receives water from the north of the town. Yet, recent spillages have arisen through faulty pipes that Southern Water are responsible for. For example, a pipe running through the park burst due to poor

maintenance, and this rainwater overnight forced sewage into Old Roar Gill, which later seeped deep into the park[33]. To make matters worse, these pipes have often been found to have many misconnections, allowing pollution to spread more frequently and quickly. Indeed, four leakages have occurred from the Old Roar Gill pipe this summer[34]. These spillages contained contaminated water, which means raw sewage and other chemicals seeped into the water system. As volumetric recording devices are not part of Southern Water's infrastructure, there is no way of telling how diluted these spillages were. But, from residents' reports, it is known that the spill was severe. For instance, residents reported toxic smells and the emergence of "fatbergs"[35]. As this water system flows downward, these spills seep into the rest of the park, further damaging the groundwater quality that sustains wildlife. Indeed, dead fish have even been found at the Buckshole Reservoir, a lovely pond site where the local fishing association teaches younger people to fish[36]. As this site was close to the spillages in Old Roar Gill, it is possible that this leak led to a loss of wildlife. Sadly, those who fish in the area report seeing the same pollution problems, indicating there is a long-term problem of water pollution in an award-winning park.

Not only does this threaten wild animals, but it also could potentially threaten dog walkers. This is because water sampling conducted within this area found unsafe levels of bacteria that can cause illnesses in humans and some animals. In samples taken from St Helens woods, 310,000 units of E.coli were found, when 500 units would have been deemed safe. In other samples, 4,900 units of Enterococci were found, when 130 units would have been deemed acceptable[37]. This bacterium can cause illness if a sufficient amount enters an animal or human. Worryingly, there have been reports of poisoning to wildlife and dogs suffering bouts of vomiting, diarrhoea and seizures after playing in the park's waters. Further, both human and animal DNA had been found in sampling[38]. Considering that the water system passes by tennis courts and children's play areas, not to mention dogs wanting to dive into the water streams, this all produces dangers to public health. Again, these samples were taken near the Buckshole Reservoir, where deceased fish were

discovered. As these chemicals can strip oxygen from the water, it is possible that contamination could have killed this wildlife. Further, it is possible this contamination has spread into ponds and mixed with Blue-green algal bloom, possibly helping it to grow to sufficient levels to release toxic chemicals that are dangerous to dogs and humans[39]. This has the possibility to create a public health issue. This development has been particularly frustrating for the council, which from 2010-15 went to great lengths to clean up the ponds throughout the park. The latest spills have undermined these efforts, potentially wasting public money, council time and undermining residents' faith in the council to deliver better environmental standards.



Image 10.1: Toxic Blue Green Algal bloom found in Alexandra Park.

Additionally, further sampling taken at Ashford Road, a road neighbouring the park, has found that water passing underneath houses into the park suffered from the same dangerous levels of contamination. There were 8,800 cfu/100 ml (colony-forming units per 100 ml of water) against a standard set by the Environment Agency of up to 500 cfu/100 ml for E.coli and 6,900 cfu/100 ml against a standard of up to 135 cfu/100 ml for Enterococci[40]. As this

contamination has been caused by avoidable water leaks, this again raises the necessity of tackling our poor water quality systems. Indeed, the spill at Old Roar Gill was so severe that a community group that wanted to clean the site, 'Friends of Old Roar Gill', were advised not to as the severity of contamination was unknown[41].

Some of this contaminated water will find its way to our drainage systems, and a proportion of it will seep into rocks and filter down into our groundwater systems[42]. As these spillages contain sewage, this is problematic as the sewage turns to nitrate and chalk rock, which often comes into contact with our drinking water, and is particularly susceptible to nitrate pollutants. This means that our drinking water is mixed with higher levels of nitrate, meaning that it can become contaminated and will need treatment, which is expensive to do[43]. Also, it could require companies to dig further to access drinking water, again raising costs, not to mention bringing more environmental risks. Additionally, the pollution of chalk rock also makes it harder to build housing, as chalk rock is weakened with nitrate pollution, making such land unsuitable to build on[44]. Vitally, this means that this pollution makes our environmental and housing problems harder to solve.

This is a particular problem for Hastings because our main source of drinking water is often stored under chalk rock and is increasingly becoming exposed to nitrate pollutants. Further, the risks of other chemical spills also threaten this water source. The loss of drinking water supplies may sound like an overdramatic statement, but this has already occurred. For example, in Winchester, 9,000 cubic meters per day were lost to contamination until it could be halted, and in St Albans, 20k of groundwater was knocked out by detergent contamination[45]. From such pollution events, carnivorous plants were found not to be eating insects anymore, as they were able to live off the chemicals leaked into the ground[46]. Another instance can be found in nearby Three Oaks, where for the first time, sewage treatment works were undertaken, contaminated water was discovered, and this had to be treated. Again, treating water is expensive. So, if we need to regularly save sites like

this from pollution, this will increase water bills and could even bankrupt indebted water companies, again leaving the taxpayer with higher bills.

With Southern Water not maintaining pipes, more leakages will likely occur. Further, although not Southern Water's fault, the pipe infrastructure in East Sussex is very old and often is not made from brick, but chalk lining[47]. The sewage is mixed with the chalk and turns to nitrate, causing these pipes to often break, again further presenting pollutants into our environment and groundwater supply.

The new issue of flooding:

Flooding has become more problematic in recent years. This is due to a combination of changing weather patterns and poorly maintained drainage systems. This has particularly been the case for the Hastings Town Centre, which has experienced significant flooding since the pandemic, which was in part caused by Southern Water not maintaining a drain outside the shopping centre[48]. Increased flooding in the Hastings area from burst or blocked water mains has seen costs for the East Sussex Fire and Rescue service increase from £1,940 in 2016 to £15,128 in 2023, an increase of £13,188. Indeed, the time spent dealing with burst water mains has increased by 5 hours in 2023[49]. The response to the flooding of the town centre in early 2023 cost the service £27,510, with the most severe flood occurring on the 28th of October 2023, costing the service over £29,000 alone[50]. Local news has reported that many homes in the town centre that were hit by the flooding are still damaged and have not been repaired, with some homes suffering damage three times within the space of a year. Businesses have also been hit, with local news reporting some businesses within the town centre being repeatedly hit by flooding. Some of these enterprises have reported significant losses and are finding it hard to get insurance which can cover the damages[51]. Most concerning, local news had reported that despite Southern Water having been proven to be responsible for some of the flooding (or at least making it worse through poor drainage maintenance), no compensation has yet been given[52]. Therefore, although a relatively new problem, the lack

of maintenance in the drainage systems within the Hastings Centre is quickly becoming a big economic and environmental problem for local businesses and residents. Further, the increased flooding is probably also deterring economic activity and investment in the area, again showing how Southern Water's failings are costing people in the Hastings & Rye area dearly.

Water companies need to fix this, not other agencies and volunteers:

All the evidence presented so far tells us that the status quo is no longer an option. We can't allow coastal communities to be continually exposed to growing water pollution levels that threaten public health, damage our drinking water supply, weaken our economy and ruin our town centres.

Also, it should not be the case that the people are the ones currently expected to pay for cleaning up the mess. Southern Water should be the ones cleaning up the mess, but the same problems recur every year, and in many respects, they feel like they are getting worse. For example, community groups dedicated to addressing water pollution often report witnessing the same problem they reported 5 years ago, indicating Southern Water is not willing to fix problems they know exist. Moreover, repeated flooding caused by the same overloaded pipes is causing damage to the same area in the town centre of Hastings. Consequently, due to Southern Water's inaction, other agencies frustrated over the lack of action often seek to address these problems, but they are not well-placed to do so.

Limited data, small community groups and weak regulators:

Currently, there is limited data on the full extent of the pollution problem, and this is commonly one area in which volunteers feel like they can have a positive impact. In Hastings, this is partially addressed by "Clean Water Action. This group of seven volunteers has taken it upon themselves to test the water quality of various sites in the Hastings and St Leonards area. As stated earlier, the water was found to have dangerous levels of harmful bacteria, such as E.coli, with the group finding levels of such bacteria being over ten times the "acceptable" limit[53]. Yet, any further testing of the water quality is entirely reliant on what a stretched Environment Agency can do and

how much money voluntary groups can crowdfund. It is important to remember that participants in this group are volunteers and have to manage to raise funds and carry out testing with their day jobs, meaning there is only so much data that can be collated. Therefore, it is understandable why there are still many black spots in our knowledge around the extent of water pollution in the town[54].

Crucially, this means that agencies are missing vital data, meaning they are often not aware of the full extent of the damage these leaks from Southern Water cause. This makes it harder for outside agencies to deal with the problem and for the regulator to hold the water companies to account. Even when such bodies can get access to information, many who work for agencies feel they do not have the power to stop Southern Water's poor practices[55]. Moreover, small voluntary bodies and regulatory organisations can often only collect data and raise issues, not fully address known problems themselves. As a result, they can't be expected to make significant progress on the issue either.

Local Authorities are not well placed to address the pollution:

After getting frustrated over their lack of power on the issue, these community groups often approach local councils in the hope that they can clean up some of the known pollution incidents. Other government bodies and regulatory agencies that know they don't have the power to resolve the problem also often seek to pass responsibility onto councils. Yet, even democratically elected councils are poorly placed to hold Southern Water to account and are unable to resolve problems. Often, councils face delays in getting this vital information, and they do not always get a satisfactory answer from water companies, making it hard for local authorities to successfully address water contamination problems. Indeed, Southern Water do not always attend meetings, and when they do, the council is not always able to secure clear, direct answers to questions[56].

Further, local councils and councillors do not have the power to force water companies to take action. For example, Hastings Borough Council and its councillors are aware that dumping actions within the park break some of the council's by-laws. Yet, the council does not have the powers to hold water companies to account and stop further breaking of the rules that all people in Hastings are expected to abide by[57]. Additionally, the council does not have the budget or staff to clean up these spills before they spread through gullies, drainage and sewer systems, natural water flows, weather events and animals. This means that the problem often worsens before it can be improved. This further raises the costs of cleaning up pollution and places strains on the council's very limited budgets, meaning that the problem often is not addressed as it becomes too unaffordable to deal with[58]. Indeed, the council's budget is so limited to deal with such problems that they have been reliant on the local angling association to install signs warning residents of the poor water quality, algae and toxic foam. Consequently, it is clear to see that even democratically elected local authorities are in a very poor position to take action on the issue.

Therefore, as local authorities, government agencies and community groups clearly can't fully address the problem (or be expected to), this means the water companies must be forced to. This need has become ever more pressing as Southern Water is proposing a 73% increase[59] in water bills despite the growing evidence that their spills threaten our local economy, collective environment, water access, water quality and public health. Consequently, this means the water companies will be compelled to pay for their own mistakes and stop companies from forcing residents to pay for the solutions needed to fix this serious problem.

The possible solution to these problems is what the chapter now goes on to discuss.

Policy solutions:

Making it an unattractive industry for those who don't care:

One way to tackle this problem is to make the water service sector an unattractive industry for those who don't care about maintaining good environmental standards and are willing to pollute in order to maximise profit. In other words, make it an unattractive sector for those looking to cream money off a poorly regulated service. This can be done in a number of ways, including:

1 - Refuse dividend pay-outs to poorly performing companies and link dividend pay-outs more to performance metrics. Good performance can be defined by a regulator.

This system could work on league tables based on measurements of investment levels, pollution incidents, how many pipes have been repaired, action taken to reduce future leakages and the level of the company's debt. Other measures thought to be a good gauge of company performance could also be included on an ongoing basis to ensure the best possible measurements are used. Companies that fall short of a specified standard could be refused dividend pay-outs and forced to invest the money back into better repair works until the company's infrastructure meets the specified standard. Overall, if a company performs well, dividend pay-outs could be generous. Yet, if they perform poorly, they should be very low, with no dividend pay-outs being possible for the worst performers. Bonuses for the bosses of the worst performers could also be stopped.

2 - Make Ofwat, the current water regulator, stronger so they can enforce policies of no dividends to companies deemed to be failing.

3 - Place automatic fines for sewage dumping.

Currently, forcing fines on companies can be a lengthy process, even for major sewage spills. For example, in the south east, major spills have only been punished two years after the event due to lengthy legal processes[60]. Making fines automatic could quicken changes in behaviour, as the longer it takes companies to stop dumping, the more money they would lose.

4 - Improve the fining system.

Even when fines are applied, they are often very limited. Indeed, companies sometimes pay less in fines than they would have if they had funded the needed infrastructure improvements that can stop these pollution instances from occurring. For example, in 2021, Southern Water was fined £90m for a major pollution incident, and this has not changed behaviour as the cost of better maintenance to avoid such instances would likely be much greater. To overcome this problem, fines could be raised to ensure they are larger than the costs of carrying out maintenance that can prevent pollution instances from occurring. The additional money generated from such fines could be used to help the Environment Agency, local councils and community groups clean up pollution incidents and improve water quality.

5 - Better use fines recouped from failing companies.

Fines could be better diverted to making infrastructure improvements, raising the standards in the quality of their pipes or helping agencies tackle pollution problems. Further, customers could be better compensated through a good rebate policy, where customers have reduced bills, the more companies fail to stop pollution. Additionally, fines could go to local councils affected by damages rather than the Treasury. This would help to ensure fines are spent on tackling the causes of the damage in the locations where the problem is most severe.

Better regulation of water companies:

To improve the situation, more information on the scale of the problem is needed. When greater information is available, better standards and targets will need to be introduced to ensure water companies take positive action. Strengthening the water regulator may be needed to achieve this.

6 - Install volumetric equipment.

This will allow for better monitoring as more accurate data on the extent of water pollution will be available. From this, better regulation could be developed, such as creating fines that better reflect the scale of the problem.

Fines can then be used to pay for more equipment to address recurring problems, such as improving pumps that leak. To enforce this, there could be a legal requirement for firms to install better monitoring equipment for all outlets.

7 - Set legally binding targets to end 90% of sewage discharges by 2030 and halve leaks from piping systems. Note: This is better than the current Southern Water targets of 63% for sewage discharges and 40% for leaks.

Stronger regulations will require targets to reduce sewage discharges that must be met. Failure to meet such mandatory targets could result in penalties, legal hearings and in extreme cases, the state stepping in. These tougher sanctions should encourage better maintenance.

8 - Create better standards. For example, better sewage piping standards.

The current standards for sewage systems grade pipes from a score of 1 to 5. A grade of 1 or 2 should not be deemed acceptable and should be forcibly improved. For example, some pipes in Thanet are only chalk-lined and are allocated a score of 2[61]. These sewage systems are not the brick-lined tunnels many people think of, and should be raised to a much higher standard.

9 - Better regulate water companies to stop groundwater pollution.

This could include forcing higher infrastructure standards and investment to stop polluted water from leaking into drinking water sources. It could also require companies to spend more of their profits on repairs of faulty equipment found to be contaminating groundwater sites.

10 - Stop executives of these companies from joining regulatory bodies and vice versa.

This blurring of regulatory bodies and private companies makes it harder to regulate the industry and should not be allowed. Further, company directors who continually breach regulatory laws should be struck off and not allowed to join any regulatory bodies.

Better protection of groundwater

Groundwater pollution is often overlooked, and this will need to be addressed first, as this water can flow into our seas and rivers. This means even if spills into the sea are stopped, some pollution incidents will still occur if the problem is not stopped at the source.

11 - More compulsory testing of groundwater sites.

As many spills are not fully investigated, collecting better data is needed to understand the full scale of the problem. Forcing the testing of sites suspected of being exposed to pollution levels will help identify where action can be targeted and what is causing the pollution. This will also potentially help to make polluters more accountable.

12 - More protective layers for groundwater supplies.

This will limit chemicals that enter the water, reducing pollution levels. Getting tougher on companies that refuse to install these protective layers may also be required. Further, fixing issues with pumping and storing water supplies is needed to ensure we do not run low on drinking water. No new reservoirs have been built since 1989, and building more water storage systems will be essential, especially as global warming will mean harsher winter rainfalls and fewer summer downpours.

13 - Investigate water supplies more thoroughly before deciding the details of developments, and stop developing on already contaminated water supply sites.

Water can often be contaminated by developments that do not take into consideration how the local water supply will be affected by the drainage systems the development will require. In the past, some systems have cut costs without consideration of how this would pollute the local environment. Future developments like this should not be allowed, or such contractors should be heavily punished, such as fines and refusal of future trade.

14 - Prioritise fixing the groundwater supply.

Whilst the pollution into our seas has to stop, our drinking water and aqua flows that sustain wildlife need to be prioritised, as it is a bigger threat to public and environmental health. Further, this sewage often seeps into rivers, streams and the sea, so the pollution problem in our coastal communities can't be solved until the source of the problem is tackled.

15 - Get the message out there that the only way to keep bills down is to reduce contamination.

As treating water is expensive, letting the public know that stopping contamination will assist in reducing costs should help secure public backing for greater action.

Empowering agencies and local government

Often, environment agencies, regulatory bodies, councils and community groups want to act to stop pollution from occurring and restore sites that have been contaminated. Yet, they often find themselves without the resources to monitor water companies, unable to hold them to account and powerless to force them to take necessary action. Therefore, empowering local communities and relevant agencies could help create better outcomes and more responsible water companies.

16 - Give Ofwat greater powers so it can impose stronger fines more quickly and get tougher with water companies deemed to be performing to a low standard.

17 - Fund Environment Agencies more generously so they can better monitor outlets and suspected pollution incidents. This can be paid for with a better fining system.

18 - Give the Environment Agency more power and greater ability to intervene in areas they are concerned about. They should also be able to stop bad behaviour and set a standard of good practices that companies are to follow.

This could be done to avoid land becoming critically contaminated and to avoid the further loss of groundwater sites. For example, the Environment Agency could have protected Rye Harbour, but it could not intervene in time, meaning part of the site is now so ridden with chemicals it is unusable[62]. Early intervention could stop future incidents like this.

19 - Empower local government so they can hold water companies to account.

Local government often cannot get the water companies to respond to their correspondence, and they struggle to get them to attend meetings, making it hard for councils to hold these companies to account. Empowering local representatives by giving them powers to summon water bosses over pollution incidents, the ability to instruct companies to clean spillages and order action to prevent future occurrences will enable authorities to protect their local environment. This will help elected officials represent their residents' concerns and stop council budgets from being spent on addressing problems they did not cause. It may also help restore faith in the idea that local government and democracy can deliver.

20 - Better information to local residents and business owners on how water flows through the town.

Improving knowledge on such subjects will help individuals and businesses better dispose of rubbish waste, stopping it from entering the water supply at the source. For example, teaching individuals and businesses about the consequences of pouring oil down drains could help reduce problems with pipes breaking and causing pollution incidents. Early intervention could be key to stopping problems before they become less manageable. Therefore, giving councils and local agencies the ability to spread information could help address pollution problems.

Finally, there are many people who want to re-nationalise these failing water companies. Yet, re-nationalisation should be a long-term goal and only used if water companies can't perform and stop pollution incidents from occurring. This is because with the national government facing tough budget constraints, this may not be fiscally possible, and there may be more financially viable ways to improve service and environmental outcomes. Additionally, these companies are heavily indebted, and the state may be required to pay this debt off if it were to purchase these companies. This could mean the taxpayer would pay significantly more than anticipated, further raising water bills. Finally, morally speaking, those who have caused pollution should be the

ones forced to fix and pay for the problem. The taxpayer paying to make these failed organisations work would mean they would again pay for others' mistakes. Therefore, whilst nationalisation may in the long-term work (if it can be afforded), it is probably worth pursuing the suggested policy reforms and using nationalisation as a policy of last resort. One thing is for certain, inaction will not stop the problems of flooding, water wastage and pollution that are blighting coastal communities.

Chapter Endnotes:

[1] A national newspaper, *The Guardian*', outlining the result of Labour's FOI to the Environment Agency and DEFRA.
https://theguardian.com/environment/2023/mar/31/raw-sewage-spilled-english-rivers-824-times-day-last-year

[2] Response to a FOI on water pollution levels in the Hastings & Rye coast area that was submitted to the Environment Agency – South East department.

[3] Response to a FOI on water pollution levels in the Hastings & Rye coast area that was submitted to the Environment Agency – South East department.

[4] A local newspaper, '*The Hastings Independent Press*', outlining how flood defence systems have long been controlled by using the sewer system.
https://www.hastingsindependentpress.co.uk/articles/culture/features/we-just-want-to-swim-in-the-sea/

[5] Surfers Against Sewage report businesses closing in the South of the UK due to pollution on beaches, something confirmed by a BBC South East news programme on the issue of sewage dumping.
https://waterquality.sas.org.uk/england/#impact

[6] Southern Water's beachboy pollution monitoring system
https://www.southernwater.co.uk/our-region/clean-rivers-and-seas-task-force/beachbuoy/

[7] Technical guidance issued by the Environment Agency on their water quality measurement standards
https://www.gov.uk/guidance/monitoring-discharges-to-water-guidance-on-selecting-a-monitoring-approach

[8] A BBC News South East interview of regular swimmers on their witness accounts of pollution being dumped into seas within the South East.

[9] An interview with an unnamed worker in the Environment Agency who lives on the East Sussex coast.

[10] BBC News South East reporting swimming being stopped in the Bexhill Triathlon due to pollution concerns
https://www.bbc.co.uk/news/articles/cze52ryej3no#:~:text=The%20swimming%20stage%20of%20an,had%20unsafe%20levels%20of%20pollution.

[11] A national newspaper reporting, '*The Mirror*', reporting that one in four swimmers were avoiding going into the sea altogether due to fears over

pollution
https://www.mirror.co.uk/news/politics/nearly-1-4-sea-swimmers-30586471

[12] A BBC News South East report interviewing swimmers who say swimming improves their mental health, but water pollution threatens their ability to swim https://www.bbc.co.uk/news/articles/cxw29g2x1m1o

[13] A local newspaper, '*The Sussex Express*', reporting on flooding of raw sewage in the Bulverhythe Road area.
https://www.sussexexpress.co.uk/news/people/st-leonards-more-than-20-homes-flooded-following-sewage-leak-4378173

[14] A local newspaper, '*The Sussex Express*', reporting on flooding of raw sewage in the Bulverhythe Road area.
https://www.sussexexpress.co.uk/news/people/st-leonards-more-than-20-homes-flooded-following-sewage-leak-4378173

[15] A BBC South East news article covering a court case focusing on a pollution incident near Gatwick Airport.
https://www.bbc.co.uk/news/uk-england-sussex-66088798

[16] Environment Agency report on Southern Water's performance (EPA data report 2023).
https://www.gov.uk/government/publications/water-and-sewerage-companies-in-england-environmental-performance-report-2023/southern-water-epa-data-report-2023

[17] Southern Water's Annual Performance Report (2021-22 report).
https://www.southernwater.co.uk/about-us/our-annual-reporting/annual-performance-report/

[18] A national newspaper, '*The Guardian*', reporting Hastings had been left without water for 5 days in the peak holiday season due to a Southern Water pipe failure.
https://www.hastingsindependentpress.co.uk/articles/culture/features/we-just-want-to-swim-in-the-sea/

[19] A South East BBC News article outlining the water shortages in Rye (and the surrounding villages) and its negative economic impact.
https://www.bbc.co.uk/news/uk-england-sussex-66957239

[20] A national newspaper, *'The Guardian',* outlining that no new reservoirs have been built since water was privatised in 1989
https://www.theguardian.com/environment/2023/feb/23/england-needs-new-reservoirs-food-supplies-nfu-chief-farming-water-shortages

[21] A local Newspaper, *'The Hastings Independent Press'* reporting that homes in ore were left without water
https://www.hastingsindependentpress.co.uk/articles/culture/features/we-just-want-to-swim-in-the-sea/

[22] Southern Water's Annual Performance Report (2021-22 report).
https://www.southernwater.co.uk/about-us/our-annual-reporting/annual-performance-report/

[23] Southern Water's Annual Performance Report (Reports ranging from 2012 - 2022).
https://www.southernwater.co.uk/about-us/our-annual-reporting/annual-performance-report/

[24] Southern Water's Annual Performance Report (2014-15 report).
https://www.southernwater.co.uk/about-us/our-annual-reporting/annual-performance-report/

[25] Southern Water's Annual Performance Report (Reports ranging from 2012 - 2022).
https://www.southernwater.co.uk/about-us/our-annual-reporting/annual-performance-report/

[26] Southern Water's Annual Performance Report (Reports ranging from 2012 - 2022).
https://www.southernwater.co.uk/about-us/our-annual-reporting/annual-performance-report/

[27] A local Newspaper, *'The Argus'*, covering Ofwat's assessment of Southern Water's performance
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https://www.ofwat.gov.uk/regulated-companies/company-obligations/customer-experience/c-mex-and-d-mex-2021-22-results/

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https://assets.publishing.service.gov.uk/media/5ab38864e5274a3dc898e29b/Envirnment-Agency-approach-to-groundwater-protection.pdf

[31] A local campaign group, the Brighton Downs Alliance, highlighting the Environment Agency's data on groundwater pollution on the South Downs. https://www.brightondownsalliance.org.uk/water.html

[32] Hastings Borough Council outlining the details of Alexandra Park https://www.hastings.gov.uk/parks_gardens_allotments/parks/alexandra/

[33] A local Newspaper, *'Hastings Online Times'* ,covering the pollution spills at Old Roar Gill https://hastingsonlinetimes.co.uk/hot-topics/environment/pollution-in-old-roar-gill

[34] FOI request outlining cases of misconnections and poor pipe maintenance at Old Roar Gill. https://www.whatdotheyknow.com/request/misconnection_in_old_roar_gill_c_2

[35] Notes taken from a resident's meeting in Alexandra Park at Old Roar Gill, where residents outlined their observations to local councillors.

[36] Southern Water reporting the ongoing investigation of dead fish found in the area of pipe misconnections and pollution spills. https://www.southernwater.co.uk/latest-news/water-quality-investigations-in-alexandra-park-hastings/

[37] An interview with unnamed worker in the Environment Agency who lives on the East Sussex coast.

[38] An interview with unnamed worker in the Environment Agency who lives on the East Sussex coast.

[39] An interview with unnamed worker in the Environment Agency who lives on the East Sussex coast.

[40] A local newspaper, *'The Hastings Independent Press',* reporting leaks near and in Alexandra Park – data confirmed by an interview with a worker from the Environment Agency. https://www.hastingsindependentpress.co.uk/articles/news/sewage-leak-pump-up-the-volume/

[41] A record of a public discussion between local councillors and the Friends of Old Roar Gill group.

[42] Interview with an unnamed worker in the Environment Agency who lives on the East Sussex coast.

[43] South East Water – water quality document – mentioning high levels of nitrate in pockets of the South East water supplies.

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[44] Interview with an unnamed worker in the Environment Agency who lives on the East Sussex coast.

[45] Interview with an unnamed worker in the Environment Agency who lives on the East Sussex coast.

[46] Interview with an unnamed worker in the Environment Agency who lives on the East Sussex coast.

[47] The British Tunnelling Society confirming that some sewers in the South East were only built with chalk lining https://www.tunnelsandtunnelling.com/analysis/brighton-s-sewer-upgrade/

[48] A local newspaper, *'Sussex Express'*, outlining the increased flooding in the Hastings Town Centre area. https://www.sussexexpress.co.uk/news/people/causes-of-hastings-town-centre-flooding-in-october-2023-revealed-in-report-4638422

[49] Data obtained through a freedom of information request to East Sussex Fire and Rescue Service – the request asked for the number of mains bursts, the time taken to repair them and the overall cost of the repair.

[50] Data obtained through a freedom of information request to East Sussex Fire and Rescue Service – the request asked for the number of mains bursts, the time taken to repair them and the overall cost of the repair.

[51] A local newspaper,*'The Hastings Independent',* reporting that businesses in the Hastings Town Centre had been subject to damage due to repeated flooding https://www.hastingsindependentpress.co.uk/articles/news/engulfed/

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[54] Interview with unnamed worker in the Environment Agency who lives on the East Sussex coast.

[55] Interview with unnamed worker in the Environment Agency who lives on the East Sussex coast.

[56] A record of a public meeting between Southern Water and Hastings Borough Councillors – expressed frustration over it being hard to secure information https://www.hastings.gov.uk/news/latest/sw-public-meeting/

[57] A record of a public discussion between local councillors and the Friends of Old Roar Gill group.

[58] A record of a public discussion between local councillors and the Friends of Old Roar Gill group.

[59] Southern Water announcing on its website that they are increasing water bills https://www.southernwater.co.uk/latest-news/bill-increase-to-support-investment-and-strengthen-financial-support-for-families-in-need/ - Confirmed by Southern Water https://www.theguardian.com/business/article/2024/jul/16/southern-water-boss-handed-183000-bonus

[60] BBC News reporting Southern Water being fined after a lengthy investigation process. https://www.bbc.co.uk/news/business-48755329

[61] The British Tunnelling Society confirming that some sewers in the South East were only built with chalk lining https://www.tunnelsandtunnelling.com/analysis/brighton-s-sewer-upgrade/, and this was also confirmed with an interview with an unnamed worker in the Environment Agency who lives on the East Sussex coast.

[62] An interview with an unnamed worker in the Environment Agency who lives on the East Sussex coast.