

CHAPTER 4

OCEAN DISPOSAL AND THE EFFECTIVENESS OF PUBLIC PROTEST

It has been argued that underlying all the experiments with various forms of sewage treatment discussed in the previous chapter was an engineering preference for ocean outfalls. This chapter will cover the decisions to construct each of Sydney's three main ocean outfalls, the opposition to these decisions and the role of the engineers in having them implemented despite the opposition.

In 1936 the Sydney Water Board officially recorded its adherence to the principle of disposing of sewerage by direct discharge into the ocean where the cost of so doing was not excessive.¹ This followed reports from two chief engineers in succession which argued that the Board's experience had proved that treatment works could only be considered "a temporary expedient" and that a complete sewerage system would replace any treatment works with ocean outfalls. Sewage farming, chemical treatment and septic tank treatment had all been tried and all had been abandoned.²

There can be no hesitation in accepting the principle "that disposal into the ocean should be continued, always provided that the cost of so doing is not excessive as compared with alternative methods." ³

The various forms of land-based treatment which had become unpopular amongst engineers had also gained bad reputations amongst the public largely because of poor management and the overloading of treatment works. In the first decades of the twentieth century it was becoming exceedingly difficult to site new sewage treatment plants in Sydney because of local public opposition.

The 1936 Water Board resolution marked the culmination of years of struggle between the public and the professionals over the the siting of sewage treatment works and the fate of Sydney's beaches. The battles over land based sewage treatment were won more easily by the public because of the preference of the professionals and the authorities for ocean disposal and also because local residents were in a far weaker position with respect to ocean outfalls.

AN EARLY FIGHT BETWEEN THE EXPERTS AND THE PUBLIC

An attempt, in 1905, by the Public Works Department to install septic tanks at Five Dock Bay, Drummoyne was successfully countered by local action groups. (see figure 4.1 for location) The residents of Drummoyne were not being assailed by disease because of their lack of sewerage and the pressure to sewer their suburb was coming from the Harbour Trust because their wastes were polluting the Harbour. The Public Works Department had come up with the septic tanks proposal because the small population at Drummoyne and the sparse population

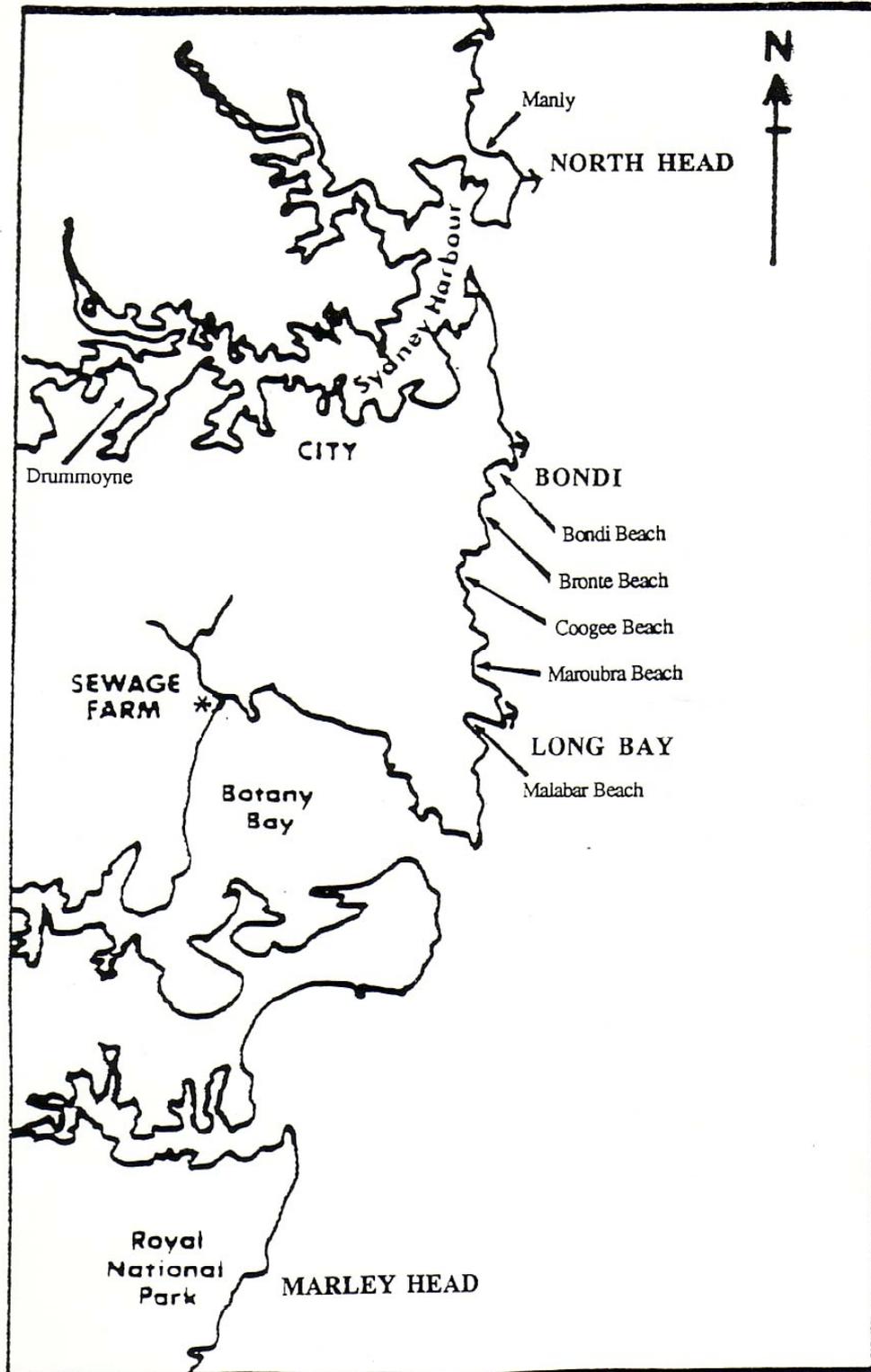
¹ Water Board Minutes, 8th January 1936, p223.

² N MacTaggart, Report on the Sewerage of Sydney, 1935, p2.

³ S.T. Farnsworth, The Major Amplification of the Sewerage System Necessary Under the Construction Programme 1936-41, 1936, p5.

between Drummoyne and the main Western Sewer did not warrant the additional expense of pumping the sewage up to the main.

Figure 4.1 Sydney Beaches



The Drummoyne residents did not like what they heard and saw of the other septic tank installations around Sydney, particularly at Folly Point. They claimed they were willing to pay higher rates to have their sewage fed into the main western system or to wait years, maintaining the old pan system, rather than have a septic tank system established in their midst. Over 1300 people in a district of little more than 3000 signed a petition protesting against the septic tanks.⁴

The engineers from both the Public Works Department and the Water Board tried using all the rhetoric and expert authority at their disposal to convince Drummoyne residents that the proposed sewage tanks would not smell or cause any nuisance. The Chief Engineer of the Water Board, J.M.Smail, accused them of having made up their minds even before visiting existing septic tank installations.

A great many people are talking of things they know nothing about. We know that in all these cases sentiment is a very strong factor. No doubt, if you brought some of these people to Balmoral, and let them smell a lot of violets, they would swear that it was stinking sewage. You can never hope to convince people of that description.⁵

Smail argued that the installations he had visited in England had no smell, a septic tank would give absolutely no nuisance at Five Dock Bay, that even when the septic tank system was working badly it would not be dangerous and that the filter beds would never foul. The President of the Water Board, Thomas Keele was less emphatic about the absence of smell, "there is always a smell connected with sewerage works", but said it would not be objectionable and there would be no nuisance.⁶

The tendency of the authorities to label protesting locals as being somewhat ignorant and sentimental became evident in this battle. The Parliamentary Public Works Committee asked Keele if the local prejudice resulted from "a want of knowledge" and he replied,

Exactly so. An effluent with the degree of purification of that I have referred to is turned into streams in the old country from which drinking water is obtained, so I fail to see how it can contaminate the salt water.⁷

To some extent the locals were not concerned with the facts of the case. As one alderman put it

You must understand that it does not matter if the system is good or bad, the mere fact of the septic tank being in that locality would

⁴ Parliamentary Standing Committee on Public Works, Scheme of Sewerage for the Municipality of Drummoyne, 1906.

⁵ ibid., p48.

⁶ ibid., pp3-8.

⁷ ibid.

depreciate the value of property there, and prevent people from going to reside in that locality.⁸

To the engineers this obstinacy in the face of the "facts" was a show of irrationality. The Board's chief engineer claimed that the greatest thing they had to fight against was "sentiment" which accounted for 90% of the opposition to any improvement or reform.⁹ Nevertheless both the Public Works Department and the Water Board showed a similar sort of sentimentality in their reasons for choosing the Five Dock Bay site. They claimed there was no suitable site along the Parramatta River because of all the fine houses fronting the river

naturally that is the most valuable portion of the frontage. To plant a septic tank in such a situation would be very objectionable because, apart from its not being perhaps a nuisance as far as smell is concerned, it is very unsightly, and there is a sentimental objection.¹⁰

And when questioned about Iron Cove as a site Smail argued that if there was going to be any detriment to Five Dock Bay, the argument would apply even more so to Iron Cove Bay where there were public baths, a steamer's jetty and a popular picnicing place.¹¹

This branding of the public as ignorant was not in keeping with the obvious fact that many of the witnesses had gone to a lot of trouble to inform themselves, reading up about overseas experience and reading books on the subject. Nonetheless the Committee were keen to point out to opponents of the system that they should listen to the experts, that they didn't really know what they were talking about, that they were only concerned about their own district and didn't care about forcing their sewage onto other communities.¹²

Moreover, the evidence of some experts was preferred to that of others. Dr MacKellar, a widely respected doctor, who had given evidence at the Illawarra Suburbs sewerage inquiry, was frequently referred to by witnesses at this inquiry. He had said that septic tanks were fine but should be remote from inhabited dwellings, say half a mile, to prevent a health risk. Smail's response when asked about MacKellar's comments was; "With all due respect to him, I, as a sanitary engineer, do not think I would pin much on his knowledge."¹³

Nor was the knowledge of local people about local conditions given much weight. They pointed out that the Bay into which the effluent would flow was landlocked and that there was very little movement that could carry the effluent away. Even Keele agreed that the action of the tide would be "simply up and down...there would not be any current". Nonetheless Keele argued that the works at Folly Point had a similar situation but no nuisance was caused and fish there were plentiful.¹⁴

⁸ *ibid.*, p15.

⁹ *ibid.*, pp9,78.

¹⁰ *ibid.*

¹¹ *ibid.*, pp6, 78-9.

¹² *ibid.*, p56.

¹³ *ibid.*, pp12, 50.

¹⁴ *ibid.*, pp5-6.

When Smail made the same comment a committee member pointed out that the presence of fish could hardly be seen as a safe guide since they always gather round any offal. Smail replied that this was not so with fish in English rivers, if the fish could live in these rivers then it was not dangerous¹⁵ and there were no impurities. "That is one of tests accepted by bacteriologists as conclusive." ¹⁶

The final success of the Drummoyne residents lay, not in the winning of the verbal battle at the hearing. They could not win that because of the power and expert authority of the engineers who were willing to make extravagant predictions for the sake of achieving their ends. Rather they won, because the sewerage scheme had to be paid for with their rates and therefore required some sort of acquiescence. The hearing had not been an effort to adjudicate between two sides of a debate but rather it had been an attempt to get the public on side. In this it had failed.

BATTLES OVER BEACH POLLUTION

The battles over sewage outfalls were of a different nature. The outfalls were to provide not just for local residents but for a far wider section of the community, many of whom did not care very much about beach pollution, or at least put the sewerage of their local neighbourhood as a higher priority than clean beaches. There was no danger of a rate-payers revolt and the representatives of beach suburbs were in a minority on the board.

The first battle was fought over Bondi Beach when it was proposed to divert the city sewage, which was at the time fouling the Harbour, to Ben Buckler, a headland on the northern end of Bondi Beach. (see figure 4.1 for location) An anonymous poet wrote of the plans to discharge sewage at Bondi in the Evening News in 1880,

But now!
The festering filth, that scums yon waves,
Shall sicken health, to fatten graves!
And when at last each beach and shore,
Grows sewer sodden'd more and more
Fell pestilence shall silent sow
My unseen seeds-to sudden grow
In one vast upas tree, whose breath
Shall spread one brooding pall of death?¹⁷

The Sydney Illustrated News also took to alarmist editorialising over the proposal.

Our beautiful beaches along the coast will become putrid, festering, fever beds, and our city will vie with New Orleans or the Savannah for the yellow fever and all the concentrated plagues which ever follow

¹⁵ ibid., pp5-8.

¹⁶ ibid., p78.

¹⁷ Evening News, 23rd March, 1880,

Nemises-like, on open defiance of Nature's laws, and besotted disregard to the most ordinary rules of health.¹⁸

The News followed the "gallant knight", Sir James Martin, Chief Justice of the colony, and his Sanitary Reform League, into the fight against ocean disposal.¹⁹ Martin believed that Sydney's beaches and harbours would be destroyed if sewage was discharged at Bondi.²⁰

The local councils in the area were also aghast. A meeting of mayors of suburban municipalities was convened to consider the sewerage proposals which were roundly condemned. The Mayor of Randwick, a suburb incorporating several miles of beaches south of Bondi Beach, was concerned that disposal of sewage to sea would only rid the city of the sewage temporarily. Eventually "an enormous quantity of filth", carried by currents, would line the city foreshores from Botany Bay to Broken Bay. The Mayor of Waverley, a suburb incorporating Bondi and Bronte Beaches, agreed. He explained to the meeting that recently tons of putrid matter had been washed onto Bondi beach from the sea and this was just what could be expected to happen if the outfall plan went ahead.²¹

At this time Bondi Beach was undeveloped and considered to be fairly remote from the city. The whole of the beach right up to the low-water mark was privately owned by one man who allowed the public access "only by sufferance". Moreover, sea bathing was still considered to be somewhat improper and dangerous, and it was illegal during daylight hours. Nevertheless, the beach was a popular picnic and promenading spot and the public "assembled there in great numbers on Sundays and holidays".²² The sea air and water was considered to be of therapeutic value and beaches were often billed as health resorts.²³

In November 1881, prior to the construction of the sewage outfall, an area of 25 acres along the foreshore of Bondi beach was resumed for public recreation.²⁴ Bondi sea baths were built in 1886 for the less adventurous. However bathing during daylight hours, between 9 am and 8 pm, was officially prohibited by the Police Offences Act until the law was openly challenged in 1902.²⁵ It was this as well as the lack of development at Bondi beach which has always been used by the Sydney Water Board to excuse its Bondi Outfall. They would argue that there was nothing there to spoil at the time.

The Bondi Outfall at Ben Buckler was completed in 1889 and it was not long before complaints were being made. In 1904 the Water Board discussed a letter they had received about pollution of Bondi Beach by sewage from the outfall.

¹⁸ The Illustrated Sydney News, 15th May 1880.

¹⁹ ibid.

²⁰ Sydney Morning Herald, 9th March 1880.

²¹ Sydney Morning Herald, 17th March 1880.

²² Sydney Morning Herald, 17th April, 1880.

²³ Lana Wells, Sunny Memories: Australians at the Seaside, Greenhouse Publications, 1982, pp43-44.

²⁴ National Times, 6th-12th April 1980.

²⁵ National Times, 6th-12th April 1980.

Water Board officers had inspected the beach and found sewage deposited along the length of the beach.²⁶

Despite mounting evidence of pollution of Bondi Beach, it was decided in 1908 to build a second major outfall at the headland on the north side of Long Bay where the sewage from the Botany sewage farm and nearby suburbs would be discharged untreated. (see figure 4.1 for location) Pressure for the outfall had come from people living in the suburbs surrounding the sewage farm who, tired of the smells from the overloaded and "sewage sick" farm did not want any form of sewage treatment whatsoever to be carried out near them.²⁷

A third major outfall was decided upon in 1916 to be sited on the northern headland of the Harbour, at North Head.(see figure 4.1 for location) This outfall would take sewage from the overloaded sewage treatment works at Folly Point, Chatswood and Balmoral and serve the northern suburbs and suburbs as far west of the city as Parramatta. Again there was no intention of treating the sewage before discharge and warnings about pollution were disregarded.

PREDICTIONS FOR PUBLIC RELATIONS PURPOSES

The engineers have always failed to predict the pollution which would result from ocean outfalls just as they always failed to publicly predict the nuisances which arose from the sewage farm (although they made provision for such a situation arising) and the septic tank installations. When the Bondi outfalls was recommended the Engineering Committee of the Sydney Sewage and Health Board wrote,

We have examined the set of the tides at the above-mentioned point, and find that during ebb the direction of the current is well off the land, although there is somewhat of an eddy setting towards it to the southward of Benbuckler. On the flood the current sets also to the southward, but from the vast body of water with which the sewage would be mixed, and the constant wash of the waves, we do not apprehend that any nuisance would be caused in the neighbourhood.²⁸

Clark also claimed that discharge at Ben Buckler would not create a nuisance. To come to this conclusion he had watched the waves and gone out by boat to inspect the sea. He had thrown a float overboard and this had "drifted a little seaward and to the north." Clarke concluded that since the mouth of the harbour was three and a half miles away there would be no danger of harbour pollution, or of beach pollution.²⁹

Floats were frequently used by engineers and oceanographers to determine currents and tides and were weighted so that they were not directly influenced

²⁶ Daily Telegraph, 10th March 1904.

²⁷ Parliamentary Standing Committee on Public Works, Scheme of Sewerage for the Illawarra Suburbs, 1906, p5.

²⁸ Committee Appointed by the Sydney City and Suburban Sewage and Health Board, First Report, 1875, p15.

²⁹ W. Clark, Report to the Government of New South Wales, on the Drainage of the City of Sydney and Suburbs, 1877, p14.

by wind direction. Engineers sought locations for outfalls which had predominantly seaward currents. They were well aware that ocean outfalls could cause pollution.³⁰ It was recommended in a major engineering text of the time that the tides and currents be studied over a sufficiently long period to be able to observe the whole range of tides and to ascertain the effects of the winds on the currents and tides.³¹ Clark's tossing of a float overboard hardly met this criterion.

The emphasis on ocean current allowed engineers to pronounce the outfalls at Bondi, Long Bay and North Head as well suited to sewage discharge because of a prevailing southerly current off the coast. For example the committee inquiring into the Long Bay outfall answered the objections from local property-owners and residents³² by stating that the conditions of the ocean currents off Long Bay were "favourable for carrying floating matter clear of the coast."³³

This was based on the evidence of Smail who argued that the current would take the sewage away and that he "would be very much surprised if any of the sewage went into Long Bay", and also the evidence of the Public Works Department's Oceanographic Surveyor, G.H.Halligan. Halligan had examined the coast and tested the direction and velocity of the ocean currents "over two separate periods of the year" (March, September and October) and decided that at the northern headland of Long Bay the current would normally carry the sewage clear of the land. He did admit, however, that putrescible matter might be deposited on the shore near the outfall in rare circumstances. He inferred this from the fact that sewage was occasionally found on Bondi Beach near the outfall there.³⁴

In each case the public, especially local residents and beachgoers, was less convinced than the engineers that the southerly current would prevent pollution. The experience with the sewage in the Harbour which had been supposed to be carried off by currents made them cynical when the Bondi outfall was built. Experience with disposing of garbage and offal at sea had been that much of it made its way back to the beaches, especially at Manly.³⁵ Fishermen and locals who knew the sea, also knew that currents were not the only forces acting upon ocean debris. The repeated return of a dead whale which was towed out to sea in 1936 convinced many ordinary people that matter tends to make its way to shore.³⁶

Even the President of the Water Board at the time of the Long Bay Ocean Outfall Inquiry, an engineer himself, admitted that he thought the sewage would drift ashore fairly often. But he allowed the experts to have the final say

³⁰ Baldwin Latham, Sanitary Engineering: A Guide to the Construction of Works of Sewerage and Drainage with Tables, 2nd edition, E.&F.N.Spon, London 1878, pp445-7; George Waring, Sewerage and Land Drainage, D Van Nostrand Co, 1889, p75; Henry Robinson, Sewerage and Sewage Disposal, E.&F.N.Spon, London, 1896, pp44-46.

³¹ Latham, Sanitary Engineering, p445.

³² Parliamentary Standing Committee on Public Works, Disposal of Sewage from the Western, Southern, Illawarra, and Botany Districts, 1908, p52.

³³ ibid.

³⁴ ibid., pp52-3.

³⁵ Sydney Morning Herald, 6th April 1880.

³⁶ Sydney Morning Herald, 10th January 1936; Sydney Morning Herald, 15th January 1936.

claiming that he did not have any experience with sewage movements in the ocean and had only based his opinion on his observations of floating matter such as seaweed.³⁷

In 1880 the newly formed N.S.W. Anti Air and Water Pollution League (founded by Sir James Martin and later renamed the Sanitary Reform League) also opposed the plans to discharge the sewage into the sea as "unscientific" and likely to render Bondi and Coogee "hotbeds of pestilence".³⁸ Extracts from papers by overseas experts which were read out to one of their meetings claimed that sewage had a lower specific gravity than sea-water and would rise to the surface even if discharged at a great depth and carried a long distance out to sea. Also sea water delayed the oxidation of organic matters and preserved foul constituents of sewage. Moreover, a "pickling" process (caused by the fermenting of the sewage on the sea surface) would cause the perpetual release of deadly gases, spreading epidemics as had happened on the shores of the Mediterranean.³⁹

Engineers were not ignorant of the tendency of sewage to rise to the surface of the ocean since it had a higher temperature and lower specific gravity than sea water. Engineering texts pointed this out.⁴⁰ Unless the sewage was carried seaward as quickly as possible, one text warned, some of the "suspended solid impurities" would be deposited on the coast and the rest of the suspended impurities would float on the surface

carried backwards and forwards by every tide, either decomposing and liberating offensive gases, or causing a serious annoyance to those who may have occasion, from business or recreative purposes, to be afloat.⁴¹

Another text admitted that the floating part of the sewage consisting of "faecal, fatty, and other matters" might be blown ashore by the winds but suggested that screening the sewage would be enough to solve this problem.⁴²

Considering that the engineers of the day were well aware of the tendency of the sewage to rise to the surface, they went to extraordinary pains to minimise the influence of the wind on their floats and to ignore surface currents. The explanation lies in the fact that the engineers were more concerned about the free flow of sewage out of the outfalls than with where the sewage might flow to. They were worried about tides and currents to the extent that they might inhibit the outward flow of sewage. Latham's engineering text claims that sea and tidal currents can be greatly prejudicial, or a valuable aid, to discharge, depending on the location of the outfall.⁴³

³⁷ Parliamentary Standing Committee on Public Works, Disposal of Sewage from the Western, Southern, Illawarra, and Botany Districts, p53.

³⁸ Sydney Morning Herald, 10th April 1880.

³⁹ Sydney Morning Herald, 15th May 1880.

⁴⁰ Robinson, Sewerage and Sewage Disposal, p45.

⁴¹ ibid.

⁴² Latham, Sanitary Engineering, p450.

⁴³ ibid., p449.

This overriding concern with the unhindered outpouring of sewage from the discharge point was manifest in arguments between engineers from the Water Board and the Public Works Department over the position of the Long Bay outfall. Mr Keele, President of the Water Board, did not like the idea of the sewage discharging under water as had been proposed by the Public Works Department because the flow would be retarded by wave action during storms. English experts brought in to settle this and other disputes between the two departments, suggested that the outfall be lowered from 15 feet below high-water of spring tide to 20 feet below to be sure of discharging into still water and the Public Works committee recommended this amendment.⁴⁴

By ignoring or minimising the role of the wind in the travel of sewage in the ocean, engineers were able to play down the probability of beach pollution due to on-shore winds and to reassure the public. When, as the years went by, polluted beaches made this proposition untenable, other arguments had to be used.

By 1916 when investigations for the outfall at North Head were being carried out, the Public Works Oceanographer, Halligan, found that although there was a strong southerly current at Blue Fish point, the surface current could be retarded or even reversed by a persistent southerly wind. When the southerly wind was followed by an easterly wind, "as it invariably is", the floating matter would be blown towards Manly Beach but because the beach was at least a mile from the outfall, the sewage would be harmless by that time.⁴⁵ He claimed that his experiments with floats led him to the conclusion that floating putrescible material would not go more than one mile from the outfall before being broken up and rendered harmless by the waves.⁴⁶

This argument that the sewage would be broken up by waves had been used for a good many years as well. The Sydney Morning Herald had defended the plan to put the sewage out at Bondi by arguing not only that the set of the current would carry the sewage out to sea but also that the "incessant churning of the waves on a rocky coast rising abruptly from the depths" was an ideal location for dispersing the sewage and rendering it innocuous.⁴⁷

Even in 1935, after extensive public campaigning against beach pollution, the Engineer-In-Chief of the Sydney Water Board, N MacTaggart, argued that beach pollution was not a problem in Sydney because there was a prevailing southerly current. On shore easterly winds would only blow floating matter onto the beaches and since the prevailing winds were north-east in the summer and westerly in the winter this would not happen often.⁴⁸ (It could already be observed at this time that north-east winds did blow sewage on shore.⁴⁹)

⁴⁴ Parliamentary Standing Committee on Public Works, Disposal of Sewage from the Western, Southern, Illawarra, and Botany Districts, p17.

⁴⁵ Parliamentary Standing Committee on Public Works, Proposed System of Sewerage, With Ocean Outfall, for the Northern Suburbs of Sydney, 1916, p18.

⁴⁶ ibid.

⁴⁷ Sydney Morning Herald, 13th March 1880 and 26th March 1880.

⁴⁸ N MacTaggart, Report on the Sewerage of Sydney, 1935, p60.

⁴⁹ for example Sun, 4th October 1926.

An engineering report commissioned a year later admitted that the extent of beach pollution would be influenced by the wind. It cited the case of the wreck of S.S.Malabar to show that the effects of the southerly current could be dominated by the effects of the winds. The S.S.Malabar was wrecked off Long Bay in 1931 and its cargo came ashore on beaches all along the coast north of the wreck, going as far as the Harbour beach at Manly.⁵⁰ (Long Bay was renamed Malabar after this incident.)

Farnsworth, MacTaggart's successor, also argued that beach pollution was not a problem. Floating sewage, he claimed, only infrequently created a nuisance on the beaches. Also the sewage was diluted.

It may be accepted on present knowledge that dilution by sea water, unlimited in extent, such as occurs on the Sydney Coastline, by discharge in the open Pacific Ocean, renders sewage innocuous to health.⁵¹

Dilution was another often quoted reason why pollution should not be feared. Dr Purdy, the Metropolitan Health Officer stated that the dilution of the Pacific Ocean was so enormous that any serious pollution would be a mere drop in the bucket.⁵² The Evening News concurred

There is commonsense, as well as scientific certainty, in that opinion, for ten thousand Bondi sewers could not pollute the immeasurable and immemorial ocean.⁵³

POLLUTION PROTESTS AT COOGEE

From at least 1904 there were complaints about beach pollution reported in the newspapers. The first organised and effective campaign against beach pollution was waged against a small outfall at Coogee Beach (location of beach shown on figure 4.1) which served the Randwick district and discharged at the water's edge on the Northern end of the beach. The campaign which was carried on throughout the 1920's came at a time when Australian beach culture was blooming; sun-tans were becoming popular, sand-castle building and sand-sculpture were all the rage, gymnastics was practiced on the sand and membership of surf life-saving clubs was booming (see figure 4.2).⁵⁴

Following consistent complaints, in particular by the Coogee and Clovelly Improvement Association to the Water Board, about the "injurious effect" of the sewage outfall at Coogee⁵⁵ and a deputation from Randwick Council and the Coogee Life Saving Club to the Board's President about the same matter,⁵⁶ the

⁵⁰ H.H.Dare & A.J.Gibson, Sewer Outfall Investigation, 1936, p9.

⁵¹ S.T. Farnsworth, The Major Amplification of the Sewerage System Necessary Under the Construction Programme 1936-41, 1936, p6.

⁵² Evening News, 25nd March 1929.

⁵³ Evening News, 25nd March 1929.

⁵⁴ Wells, Sunny Memories, pp49-64.

⁵⁵ Water Board Minutes, 6th July 1921.

⁵⁶ Water Board Minutes 21st December 1921.

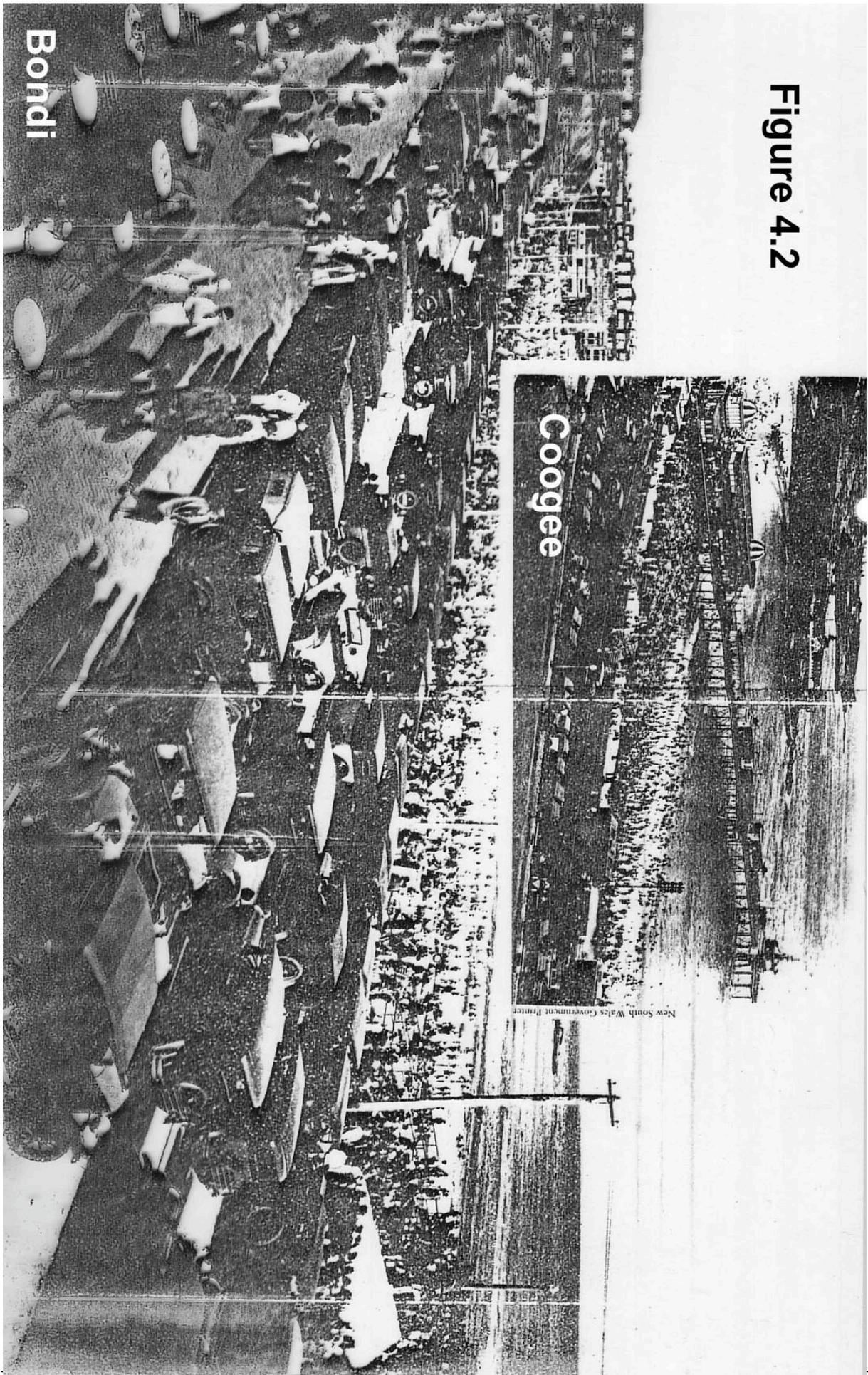


Figure 4.2

Bondi

Coogee

New South Wales Government Printer

Board finally admitted, in 1923,⁵⁷ that there was a pollution problem at Coogee. They sent a report to Randwick Council stating that soundings were being taken to find out whether it would be feasible to construct a submarine pipe to take the sewage further out to sea. The Water Board claimed that the prevailing southerly current normally carried sewage clear of the beach but that on occasions, "under certain conditions of wind and tide" sewage was deposited on the beach.⁵⁸ The submarine pipe would minimise this because of the distance from shore.

At the Water Board meeting a couple of weeks later, blame for debris on the beach was placed on passing ships and the difficulties with shark nets used as a reason to seek a further report into the feasibility of laying a submarine pipe.⁵⁹ This incensed the Coogee Vigilants and Rate-payers' Association who supported the idea of a submarine pipe⁶⁰ and they became increasingly anxious as the scheme seemed to be forgotten by the Board.⁶¹ Over a year later, following two deputations and numerous interviews with the Board the Association was still complaining that no action had been taken⁶² and after yet another year and a half the Board informed an angry Randwick Council that there would have to be an inspection of the Coogee outfall sewer "before any determination to alter was arrived at."⁶³

The idea of diverting the sewage to another outfall site was considered at a Board meeting in January 1924 when reports by Colonel Longley, Mr Gutteridge (Director, Division of Sanitary Engineering, Commonwealth Health Department) and the Board's Chief Engineer were discussed. The matter was deferred.⁶⁴ A few months later the Chief Engineer submitted three alternative schemes for eliminating sewage from Coogee beach, one of which was presumably the submarine outfall.⁶⁵ It is unclear why the submarine pipe idea was dropped in the end. It was reported in the press the following year that it had been said that experiments with corks had proved that even from half a mile out the northeast winds carried the corks back to shore.⁶⁶

A second alternative, to divert the sewage to Mistral Point between Maroubra and Coogee was also dropped for unstated reasons. Perhaps the experiments conducted showed that the sewage would pollute nearby beaches or perhaps it was the protests from Maroubra, especially the Maroubra Bay Progress Association and Randwick Council, fearing for the future of Maroubra Beach.⁶⁷ The option finally adopted was to divert the sewage to the existing outfall at Long Bay and this had the attraction of utilising existing facilities and

⁵⁷ Evening News, 18th April 1923.

⁵⁸ Evening News, 18th April 1923.

⁵⁹ Sun, 9th May 1923.

⁶⁰ Evening News, 12th May 1923.

⁶¹ Sun, 26th February 1923.

⁶² Evening News, 15th April 1924.

⁶³ Sun, 16th September 1925.

⁶⁴ Water Board Minutes, 25th January 1924.

⁶⁵ Water Board Minutes, 21st May 1924.

⁶⁶ Sun, 4th October 1926.

⁶⁷ Evening News, 30th May 1924; Labor Daily, 30th May 1924; Sun, 11th June 1924.

minimising the numbers of suburbs with an outfall in their midst. It was argued in favour of the scheme that it was better to concentrate the pollution at one point.⁶⁸

The proposal to divert Randwick sewage from Coogee to Long Bay was not popular with locals living near Long Bay. At a council meeting an alderman said that "the filth was not required at Long Bay any more than at Coogee"⁶⁹ and there was a definite feeling that Long Bay was being sacrificed to save Coogee. Those aldermen who represented the Long Bay area were of course against the proposal but on Randwick Council, which covered both Coogee and Long Bay they were in a minority. To soothe this minority a motion was passed urging the Water Board to treat the sewage so as to render it inoffensive before it was discharged.⁷⁰

The Board responded to allegations that the beaches near Long Bay would be adversely affected by instructing the Chief Engineer "to test the currents as he deems advisable."⁷¹ When the Chief Engineer reported a few months later he recommended the diversion of sewage to Long Bay suggesting that more current observations be made by Halligan. He argued that the small amount of sewage from Coogee would not make much difference to the Long Bay outfall.⁷²

Later that year, the Chief Engineer, maintaining that the Long Bay Outfall Sewer would have to be duplicated in the near future to provide for the sewerage of additional areas, persuaded the Board to make provision in the Coogee diversion scheme for a tunnel alongside the Long Bay Outfall Sewer for that portion of the Coogee diversion pipe which followed the Long Bay Sewer of the size that would be ultimately required for the duplication.⁷³ Money spent on the diversion would therefore also be going towards necessary upgrading work and this gave the Board's engineer an incentive to push for this course of action.

The arguments over the Coogee diversion brought to the fore the realisation by local residents of Long Bay that their outfall was increasingly becoming a central disposal point for the city. The sewage flow was being continually augmented as more suburbs were sewerage. On 25th May 1927, the Long Bay Progress Association, the Life Saving Club, the Parents and Citizens' Association and the South Ward Progress Association held an "indignation meeting" to protest against the diversion of the Coogee sewerage to Long Bay. It was said that Long Bay should not be "the dumping ground for the remainder of the city." Alderman Sautelle a member of the Water Board said that Long Bay would be doomed as a surfing beach.⁷⁴ (In fact, the beach was closed some years later for swimming and surfing because of pollution.) And an MP, Mr E Riley argued that "No Government has the right to penalise a section of the community for the benefit of another."⁷⁵

⁶⁸ Evening News, 28th October 1925.

⁶⁹ Evening News, 16th September 1925.

⁷⁰ Sun, 28th October 1925.

⁷¹ Water Board Minutes, 21st October 1925.

⁷² Water Board Minutes, 17th February 1926.

⁷³ Water Board Minutes, 17th November 1926.

⁷⁴ Sydney Morning Herald, 26th May 1927.

⁷⁵ Evening News, 26th May 1927.

The meeting resolved to request the Government to make a survey of the ocean bed to see if the sewage at Long Bay could be carried further out to sea in a tunnel under the ocean. This was suggested by Alderman Sautelle, an engineer, as the only alternative since treatment by septic tanks would require 30-50 acres and destroy everything in a five mile radius.⁷⁶ As an engineer, he could not contemplate any scheme other than dealing with the sewage at Long Bay since alternatives to this would involve the scrapping of a vast network of pipes, the physical infrastructure, which brought the sewage to Long Bay.

The sewage system had cost millions of pounds, and could not be cavalierly brushed aside by the passing of a pious resolution - even to save Long Bay beach.⁷⁷

Meanwhile the Randwick Council continued to complain about the lack of action by the Water Board as far as removing the Coogee outfall.⁷⁸ After reported widespread agitation the Board decided to go ahead with the diversion and put forward a proposal to extend the whole system further south. This brought further protest from Rockdale Council, claiming that Botany Bay would be threatened⁷⁹ but debate quietened down for a year or so.

In the meantime the Board had made a model of a plant for breaking up floating sewage matter and were satisfied by experiments with the model. It was decided to build such a plant at Coogee and at least some of the board members hoped that this would do away with the necessity to divert the sewage⁸⁰ although the Board later claimed that this was just a temporary measure undertaken to keep the beach clean until the diversion could be carried out.⁸¹ The plant, which mechanically disintegrated the sewage solids was build and put into operation in 1928.

In May 1929, a further protest meeting was held by the Long Bay Progress Association, the Maroubra Chamber of Commerce, and the Maroubra Junction, Matraville and Bunnerong Progress Associations with a big attendance. Besides protesting about the Coogee diversion speakers also protested against the lack of treatment the sewage received before discharge.⁸² The meeting decided that the Board should immediately investigate "modern methods of dealing with sewage to avoid possible pollution of the beaches, which are among the greatest of the city's assets."⁸³ A week later Botany Council joined the protest against the diversion proposal.⁸⁴

In 1932, after the first section of work towards the diversion had been carried out and further funds were not available, the Board members representing the

⁷⁶ Sydney Morning Herald, 26th May 1927; Evening News 26th May 1927; Daily Telegraph, 27th May 1927.

⁷⁷ Daily Telegraph, 27th May 1927.

⁷⁸ Sun, 14th September 1927; Evening News 14th September 1927.

⁷⁹ Sun, 18th November 1927.

⁸⁰ Water Board Minutes, 23rd November 1927.

⁸¹ Water Board Minutes, 19th October 1932.

⁸² Sydney Morning Herald, 1st May 1929; Sun, 1st May 1929; Daily Telegraph, 1st May 1929.

⁸³ Sydney Morning Herald, 1st May 1929.

⁸⁴ Sun, 9th May 1929.

Eastern suburbs, Moverley and Sautelle, proposed that the scheme be completed by applying to the Government for an Unemployed Relief Grant. The debate which followed was mainly about priorities. Moverley and Sautelle emphasised the importance of the beaches to the whole metropolitan area and the threat to health that polluted beaches posed. Other Board members suggested that the sewerage of unsewered areas should have priority and that such work would at least bring a return (in the form of additional rates) since the Board already used 78% of its revenue to meet interest and other charges.⁸⁵

One member disliked the idea of the government determining the "distribution of moneys voted" and it was decided that the priority and urgency of the diversion scheme should be reviewed by Water Board officers before government funds were sought.⁸⁶ The Chief Engineer reported back the following month giving estimated percentage revenues for money spent on various schemes, the Coogee diversion being lowest at 1.13%. But he also suggested that the Coogee diversion could be considered to be of general benefit to the community and therefore could be recommended as work to be carried out from Relief Funds.⁸⁷ He did not mention that the work on the diversion would also contribute towards the duplication of the Long Bay sewer which he foresaw would be necessary.

Advice had also been received from the Department of Labour and Industry that funds would be made available for the completion of the Coogee diversion scheme. (The Minister for this department at the time was Dunningham, Member for Coogee.) The Board decided to accept the offer if the funds could be made as a grant or with interest payment suspended until completion of the works. Various members opposed this decision because of the lack of return the expenditure would bring.⁸⁸ However, the terms were unacceptable to the Unemployment Relief Council which offered half the sum as a grant and half as a loan.⁸⁹ After trying to get them to reconsider the Board finally left negotiations up to the President.⁹⁰ Work was recommenced in October 1933, using Relief labour and the diversion was completed in 1936.

SUPPRESSING POOR PUBLICITY

The Coogee outfall was designed and constructed by the local authorities and the state authorities did not feel quite so defensive about its performance as they did about the three major outfalls which had all been declared by government engineers to be non-polluting even before they were constructed. If the Sydney Water Board had admitted that those outfalls polluted the beaches, not only would they have been discrediting their own engineers but also they would have been obliged to do something about the pollution. The Board and other government authorities therefore responded to most pollution complaints by denying the pollution existed, blaming the pollution on other sources or claiming that rare instances of pollution could not be prevented.

⁸⁵ Water Board Minutes, 19th October 1932; *Sun*, 19th October 1932.

⁸⁶ Water Board Minutes, 19th October 1932.

⁸⁷ Water Board Minutes, 23rd November 1932.

⁸⁸ Water Board Minutes, 23rd November 1932.

⁸⁹ Water Board Minutes, 30th November 1932.

⁹⁰ Water Board Minutes, 14th December 1932.

In response to the 1904 complaints about the Bondi outfall, Board Inspector McKenzie claimed that all the sewage had blown into the beach on a surface drift caused by easterly winds which often brought floating matter discharged from ships onto Bondi, Bronte and Coogee beaches. Since the main ocean current was flowing south during the previous week he concluded that the sewage could not have come from the main sewage outfall.⁹¹ The engineer-in-chief reported that since such sewage deposits occurred infrequently, they could be dealt with by maintenance men "if it could be proved that the whole deposit came from the main outfall". He admitted that the wind conditions of the previous week could have caused the light floating matter to "drift out of the current" and onto the beach. "This was unavoidable."⁹²

Thirty-two years later the responses were not much different. Dr Purdy, City Health Officer blamed pollution in 1936 on night soil dumping and passing ships and claimed that diseases were contracted in dressing sheds by use of common towels and the spread of germs from one surfer to another in the water.⁹³

The authorities were able to get away with unconvincing denials because public complaints were often hushed up by local councils, businessmen and property owners who were concerned that adverse publicity would drive away potential visitors and residents from the area and depress business activity, regional development and property values. Lobbying for remedies for the pollution was often carried on behind the scenes.

During the 1920s the Council had been trying to attract surfers and tourists to Coogee. An advertising campaign described Coogee as "the seaside holiday resort of NSW" and in 1928 the Coogee Pleasure Pier costing £70,000 was opened with a gala event. (see figure 4.2) The pier had a theatre seating 1,400, a ballroom for 600, a 400 seat restaurant, a nursery, a camera observer and several shops. It was lit up at night with thousands of lights. The following year the new shark net surf sheds were greeted by "Come to Coogee Week" celebrations which included a mile-long procession watched by 135,000 spectators.⁹⁴

In the summer following the Board's decision to build the diversion to Long Bay, both Dr Thompson and Mr Stevens of the Coogee Progress Association gave statements to the press deploring the state of Coogee beach. They blamed the sewage for ill-health and shark attacks and a sickening stench.⁹⁵ In reply the president of the Water Board claimed he was unaware "of any grounds on which alarmist statements could have been made".⁹⁶ The next day, however, the reported allegations were denied and decried by the Randwick Council which claimed to be representing Coogee businessmen.

"What useful object is to be served by residents of Coogee making alarmist cries of this character" asked the Deputy Mayor, Alderman Goldstein, who had made similar statements himself in previous years, "Surely Coogee has suffered

⁹¹ Daily Telegraph, 10th March 1904.

⁹² Daily Telegraph, 10th March 1904.

⁹³ Sydney Morning Herald, 5th May 1936; Daily Telegraph, 5th May 1936.

⁹⁴ Weekly Courier, 7th September 1926.

⁹⁵ Evening News, 4th October 1926.

⁹⁶ Sun, 4th October 1926.

enough through the shark scares?"⁹⁷ At the next council meeting Mr Stevens was denied the chance to speak whilst Alderman Goldstein claimed that the sewage was in fact seaweed.⁹⁸ He did, however, contradict himself when he admitted that council had been trying for years to have the matter remedied.⁹⁹

The Coogee Bay Progress Association immediately dissociated itself from Mr Stevens' statements and said that Coogee was perfectly clean and healthy.¹⁰⁰ They admitted, though, that they had resolved six months earlier to give no publicity to complaints about beach pollution since the Water Board was considering the diversion of the outfall sewer.¹⁰¹

Later Alderman Dunningham, Member for Coogee and former Mayor of Randwick admitted that the Randwick Council had hushed up publicity about pollution and for many years had dealt with the issue of Coogee Beach pollution in committee "in deference to the interests of business people." But he also stated that after trying unsuccessfully for years to get the Water Board "to remedy the trouble the council proceeded to deal openly with the question of pollution."¹⁰²

Bondi residents also showed the same tendency towards hushing up poor publicity. On the 6th March, 1929 the Telegraph newspaper published a large aerial photograph of Ben Buckler point showing the sewage field curving around the point. The photo was headlined "Horrible Sewage-Loaded Sea Washes Bondi Surfers" and immediately set off a wave of publicity and protest about the pollution of Bondi beach.¹⁰³

The Telegraph described the sewage field as a "sinister curve of menace to health" and the photo as "the most damning indictment of Sydney's sewerage system ever published"¹⁰⁴ and the Sun later that day published the outraged statements of the president of the North Bondi Surf Life-Saving Club and the Mayor of Waverley.¹⁰⁵ The State Premier promised to see what could be done "to remove the conditions which had been rightly described as intolerable."¹⁰⁶

Immediate denials were given by the Chief Civic Commissioner, who suggested that the conditions which enable sewage to come into the beach occur "perhaps once in five years"¹⁰⁷, and members of the Water Board. Aldermen Moverley and Sautelle claimed that the current swept the sewage away from the beaches¹⁰⁸

⁹⁷ Evening News, 5th October 1926.

⁹⁸ Evening News, 13th October 1926.

⁹⁹ Evening News, 13th October 1926.

¹⁰⁰ Sun, 14th October 1926.

¹⁰¹ Evening News, 14th October 1926.

¹⁰² Sun, 7th March 1929.

¹⁰³ Daily Telegraph, 6th March 1929.

¹⁰⁴ Daily Telegraph, 6th March 1929.

¹⁰⁵ Sun, 6th March 1929.

¹⁰⁶ Sun, 6th March 1929.

¹⁰⁷ Daily Telegraph, 7th March 1929.

¹⁰⁸ Sun, 6th March 1929; Evening News, 6th March 1929.

and the Waverley town clerk was said to have received no complaints of sewage coming onto the beach.¹⁰⁹

When approached, the President of the Water Board, T.B. Cooper, said the Board would do nothing. He said that development in the Bondi area had occurred since the construction of the outfall.

The Bondi sewer, with other ocean outfalls, was inquired into by a Parliamentary Standing Committee. Subsequently Acts of Parliament were passed authorising the construction of those works, and in due course they were carried out by the constructing authority on behalf of the Government, and then handed over to this Board to administer,....Consequently the Board proposes to do nothing. I may add, it is Sydney's unalterable system.¹¹⁰

The board unanimously agreed that it was not called upon to take any action.¹¹¹

The day after the publication of the damning photo and the Board's refusal to take any action there was a remarkable turn around in statements and a definite attempt to suppress the idea that Bondi was polluted. The President of the North Bondi Surf Life-Saving Club retreated from previous statements. He had described the release of sewage into the sea as "criminal" and had recounted being forced to leave the surf because the beach was littered from one end to the other with "offensive matter."¹¹² Now he claimed that the surf was fairly free from sewage and that the stream in the photograph was "just an ocean current-not sewage matter."¹¹³ The Mayor of Waverley who had called for the removal of the outfall which was "against all doctrines of hygiene"¹¹⁴ now claimed that the photograph showed foam and not sewage and proclaimed the "remarkable clearness" of the Bondi water.¹¹⁵

The reason for this retraction emerges in the midst of the Mayor's indignation.

It is not fair to the council and rate-payers to say it was an arc of sewage; especially after so much money has been spent to beautify the beach. I do not know of anything more harmful to the district than the publication of that photograph.¹¹⁶

Waverley Council had just spent six years planning and constructing a pavilion as part of its beach beautification program. The pavilion was claimed to be a "palatial building" with accommodation for 12,000 people to change, modern refreshment rooms, a cafe and a splendid ballroom with a jarrah floor.¹¹⁷

¹⁰⁹ Evening News, 6th March 1929.

¹¹⁰ Sun, 6th March 1929.

¹¹¹ Sydney Morning Herald, 7th March 1929.

¹¹² Sun, 6th March 1929.

¹¹³ Daily Telegraph, 7th March 1929.

¹¹⁴ Sun, 6th March 1929.

¹¹⁵ Daily Telegraph, 7th March 1929.

¹¹⁶ Daily Telegraph, 7th March 1929.

¹¹⁷ Wells, Sunny Memories, p64.

Dunningham, Member for Coogee, was informed by members of Waverley Council that "he had done wrong in giving publicity to the matter, as the interests of the shopkeepers were affected." They felt that pollution had to be put up with "until some scientific way was devised of treating the sewage before it was released into the sea" or until the outfalls could be extended far out to sea.¹¹⁸

The district and especially the businessmen and council of Bondi were said to be up in arms. There were calls to boycott the Sun and Telegraph and withdraw advertising. A "monster indignation meeting" was called against the Sun.¹¹⁹ The Guardian claimed that.

Every citizen of Bondi and Waverley who has his savings in property, or makes his living in a shop, is damaged by this sham "proof" manufactured against Bondi Beach.¹²⁰

It was later suggested by the Guardian that the photo had been published by the Telegraph because of the discontinuation of advertising by Bondi Publicity League. The Guardian launched an attack on the Sun for attacking Bondi. Under the headline "'Sun's' Vicious Attempt to Discredit Bondi Surfing" the Guardian suggested that there was no real substance in the Sun's allegations.¹²¹

The League had, according to the Guardian, approached the Telegraph and arranged for them to boost the image of Bondi in return for which the League would run an advertising campaign involving half-page advertisements to be placed every Sunday in the Telegraph. The Telegraph ran two pages of complimentary photos of Bondi and the League lodged its first advertisement with the Telegraph the following Sunday. When the league failed to place further advertising as expected by the Telegraph, the photo of the sewage field was published in retribution.¹²² The Sun, however, claimed that the advertising campaign had been discontinued after the publication of the damaging photo.¹²³

A LAST DITCH STAND TO SAVE CITY BEACHES

The whole sewage pollution debate came out into the open properly in 1935-6 when it was proposed by MacTaggart, the Engineer-in-Chief of the Water Board, that the sewage from the southern suburbs be diverted to Marley Head in the Royal National Park south of the city and discharged there so as to relieve the overtaxed Long Bay main. The public seized upon this proposal as an opportunity to rid the eastern and southern beaches of sewage once and for all. There was heavy lobbying to have all the city's sewage, south of the Harbour, diverted away from city beaches down to Marley Head.

MacTaggart's proposal was a response to the problems that were occurring in the sewer main leading to the Long Bay outfall because of overloading, reduced capacity due to repairs and also problems that arose from connecting three sewer

¹¹⁸ Sun, 7th March 1929.

¹¹⁹ Guardian, 22nd March 1929; Guardian, 29th March 1929.

¹²⁰ Guardian, 22nd March 1929

¹²¹ Guardian, 22nd March 1929

¹²² Guardian, 22nd March 1929

¹²³ Sun, 23rd March 1929.

mains that had a free outlet on the sewage farm into one inadequate channel going from the sewage farm to Long Bay. This had "converted three well designed schemes into one very defective scheme" and the Board had had to contend with continuous trouble with surcharging sewage.¹²⁴

Marley Head was a suitable site for an outfall, MacTaggart argued, because it was the nearest suitable headland and yet was a good distance away from habitation and public beaches. A larger area could be sewerred to this point and there would be no worries about possible future development around the site since it was a National Park. Because a National Park could not be alienated extra land would always be available for treatment of the sewage should it become necessary.¹²⁵

He rejected the idea of building a duplicate sewer discharging at Long Bay because it would be too costly to cross the low-lying land between the Cooks River and the ocean and because the additional discharge at Long Bay would be undesirable in view of the complaints already received.¹²⁶ Farnsworth, his successor, disagreed and recommended that a duplicate ocean outfall carrier be constructed to discharge at Long Bay. He claimed the location of the new outfall was "a matter to be decided upon economic and technical grounds only".¹²⁷

MacTaggart's scheme would require an unusually flat grade, an unnecessarily risky inverted syphon and a length of sewer that would allow the sewage to putrefy and destroy the concrete pipes. The scheme was a radical departure from standard practice making it of an experimental nature and overly costly.¹²⁸ On the other hand, Farnsworth argued, the duplication scheme took the shortest feasible route to the ocean, would not require further investigation as MacTaggart's scheme would, and could be built more cheaply and quickly so that inflation and changes in money market conditions would be less devastating.¹²⁹

The Water Board considered Farnsworth's report early in 1936 and unanimously adopted his recommendation

That the Board record its adherence to the principle of disposing of sewerage by direct discharge into the ocean where the cost of so doing is not excessive; and directs that steps shall be at once taken with a view to equipping present and future outfalls with suitable and efficient treatment works to remove matter liable to create nuisance from the sewage before discharge of same into the sea.¹³⁰

The second recommendation to duplicate the Long Bay outfall was debated over two meetings and adopted with one dissentient, Alderman Moverley, who represented Councils covering the Eastern beaches and favoured MacTaggart's proposal to construct an outfall at Marley Head because he wished to have the

¹²⁴ MacTaggart, Report on the Sewerage of Sydney, pp15-16.

¹²⁵ ibid., p49.

¹²⁶ ibid.

¹²⁷ Farnsworth, The Major Amplification of the Sewerage System, p10.

¹²⁸ ibid.

¹²⁹ ibid.

¹³⁰ Water Board Minutes, 8th January 1936, p223.

sewage removed from metropolitan beaches. ¹³¹ Moverley claimed that "It should not be a question of cheapness, but of what was in the best interests and health of the people." ¹³²

The duplication proposal was, however, attractive to the other members of the board because it was a cheaper, simpler scheme which would allow repairs to be carried out on the existing sewer and also enable sewerage provision to be extended to unsewered districts, which some of them represented, sooner. The sewage could be treated so that beach pollution would not occur, they argued.¹³³

The proposal to duplicate the Long Bay outfall was immediately followed by an outcry. Complaints were made by the seaside councils which were concerned about beach pollution and claimed that "surfing had become not only a national recreation but also a health-giving exercise."¹³⁴ The Mayor of Botany felt it was "grossly unfair that the sewage of Illawarra and Bankstown [in the Western suburbs of Sydney more than 20 kilometres from Long Bay] should be directed through the Botany municipality."¹³⁵

One thing that became clear at this time was that a number of beaches were already experiencing a degree of pollution. The threat of this situation worsening and the chance that the water board could be coerced into taking action overcame the reluctance of local people to admit to their pollution problems.¹³⁶ The Bondi Weekly proclaimed that

To continue emptying this vile-appearing, foul-smelling abomination just over the coastline of densely-populated districts is an atrocity on the part of those responsible and a reflection on those who tamely submit to it.¹³⁷

The Minister for Labor and Industry and Member for Coogee, Mr Dunningham, sent a letter to the Premier asking that the Board supply details so that it could be ascertained to what extent the beaches would be depreciated.

There is widespread indignation over the proposal, not only from seaside electorates and municipalities, but also from those thousands who indulge in surfing as a health-giving pastime.¹³⁸

The Telegraph also reported that "seaside councils are up in arms, surfers are more than a little perturbed, and seaside property-owners are thinking gloomily of reduced land values".¹³⁹ A property owner of Malabar submitted a plea

¹³¹ Water Board Minutes, 8th January 1936, p223.

¹³² Sydney Morning Herald, 21st January 1936.

¹³³ Water Board Minutes, 8th January 1936, p223; Water Board Minutes, 15th January 1936, p233.

¹³⁴ Sydney Morning Herald, 10th January 1936 & 24th January 1936; Daily Telegraph, 23rd January 1936; Labor Daily, 24th January 1936; Bondi Weekly, 6th February 1936.

¹³⁵ Daily Telegraph, 16th January 1936.

¹³⁶ Sydney Morning Herald, 31st January 1936.

¹³⁷ Bondi Weekly, 30th January 1936.

¹³⁸ Sun, 16th January 1936.

¹³⁹ Daily Telegraph, 17th January 1936.

through the Telegraph pages "for protection of the unfortunates who have their life-savings similarly invested."¹⁴⁰

The Surf Life-Saving Associations registered their protest and organised protest meetings.¹⁴¹ And, rather belatedly, the North Bondi Progress Association joined in.¹⁴² Unaffiliated young people canvassed the Eastern Suburbs to ensure a "packed house" for a public protest meeting.¹⁴³ The meeting was held on the 20th January and was "largely attended" attracting Mayors, aldermen and representatives of surf and swimming clubs.¹⁴⁴ The meeting, organised by Randwick council, carried a resolution against a sewerage programme which included the building or use of outfalls such as the proposed one at Long Bay. The resolution suggested that sewerage should be a "truly national project" and recommended that overseas experts be obtained to "put into operation modern treatment systems."¹⁴⁵

A second meeting was organised by Waverley Council and held on the 17th February. The meeting of Bondi residents and representatives of both sides of politics decided to request the State government to "insist upon the discontinuance of the discharge of sewage into the ocean near surfing beaches."¹⁴⁶ There was a protest at the meeting from an alderman that publicity would adversely affect the popularity of the beaches but the Mayor of Waverley replied that the councils had "hushed up the matter" for years and now realised that publicity would achieve more.¹⁴⁷

The Water Board responded throughout the campaign of protest with material from the Farnsworth report and assurances that sewage treatment would prevent beach pollution.¹⁴⁸ One Board Member however went so far as to say that "The trouble with Australians is that they have a hygiene complex."¹⁴⁹

Support for the Water Board scheme came from Members of Parliament who argued that priority should be placed on sewerage unsewered districts and that occasional beach disfigurement was a secondary consideration.¹⁵⁰ Nonetheless the support of those voters in unsewered districts was not enough to overcome the massive public outcry over beach pollution. The government was forced to insist that the Board bring in independent experts to review their proposals.¹⁵¹ The Board agreed that the "best way to satisfy the public mind"¹⁵² was to seek

¹⁴⁰ Daily Telegraph, 18th January 1936.

¹⁴¹ Sydney Morning Herald, 18th January 1936.

¹⁴² Labor Daily, 28th January 1936.

¹⁴³ Daily Telegraph, 30th January 1936.

¹⁴⁴ Sydney Morning Herald, 21st January 1936; Daily Telegraph, 21st January 1936.

¹⁴⁵ Daily Telegraph, 21st January 1936.

¹⁴⁶ Sydney Morning Herald, 18th February 1936; Bondi Weekly, 20th February 1936.

¹⁴⁷ Daily Telegraph, 18th February 1936; Bondi Weekly, 20th February 1936.

¹⁴⁸ Sydney Morning Herald, 9th January 1936, 10th January 1936, 18th January 1936; Sun, 16th January 1936; Daily Telegraph, 17th January 1936.

¹⁴⁹ Daily Telegraph, 17th January 1936.

¹⁵⁰ Sydney Morning Herald, 10th January 1936, 24th January 1936.

¹⁵¹ Sydney Morning Herald, 23rd January 1936.

¹⁵² Sydney Morning Herald, 30th January 1936.

independent opinions and Messrs. Dare and Gibson were decided upon by the Board in committee.¹⁵³

H.H.Dare, far from being independent, had acted as a consultant to the Water Board on several previous occasions. A.J. Gibson was also a consultant engineer from the firm Julius Poole & Gibson. Dare and Gibson reported a few months later. They reaffirmed that disposal of sewage by dilution to sea was the most economical and satisfactory solution in coastal cities.¹⁵⁴ They therefore recommended that the duplicate sewer discharging at Long Bay be built.

They rejected the idea of sewage farming as being too expensive, full of engineering difficulties and "a retrograde step". MacTaggart's proposal to divert the sewage of the southern suburbs to Marley Beach would be too expensive and too technically difficult because of the flat grade and deep syphons required and then it would only mean another source of pollution. It would also be too expensive and quite impracticable to divert the existing outfalls elsewhere. Any extension of the outfalls further out to sea would not only be too expensive and too technically difficult but would serve little purpose since the offensive matter would still come back on shore.

THE ESSENTIAL ARGUMENTS - HEALTH RISKS AND DENIALS

The newspapers received a number of letters debating the proposed schemes, from members of parliament, aldermen, water board members and the public. The extent to which the beaches were polluted was the first point of contention.

"Pollution of beaches" is a good and efficient political catch-cry, but as a scientific fact it ranks among the superstitions of the past like wearing a bi-metallic ring as a cure for rheumatism.¹⁵⁵

Two weeks after the infamous 1929 Telegraph photo the Sun procured three samples of sea water at Bondi and had them analysed by a public analyst. The samples contained "organic matter of decomposed animal or vegetable origin" and one sample contained "the bacteria of putrefaction."¹⁵⁶

In response the authorities did their own sampling. The government analyst found no nitrates in a sample procured by the Metropolitan Medical officer, which meant "the pollution of the water by sewage is negligible". Another sample procured by Waverley Council was found to have "nothing to substantiate the airy surmises so graphically depicted lately".¹⁵⁷

The scope for taking unrepresentative samples on both sides was enormous. The Guardian quickly followed the Sun story with allegations that the Sun samples had all been procured by a fisherman from the same spot "in line with the sewer outfall".¹⁵⁸ The Sun answered these allegations by taking a further six samples

¹⁵³ Water Board Minutes, 29th January 1936, p247.

¹⁵⁴ H.H.Dare & A.J.Gibson, Sewer Outfall Investigation, 1936, p4.

¹⁵⁵ Sydney Morning Herald, 13th January 1936.

¹⁵⁶ Sun, 21st March 1929.

¹⁵⁷ Evening News, 22nd March 1929.

¹⁵⁸ Guardian, 22nd March 1929.

at six different points, of which two contained organic matter. The Guardian, however, interpreted the analysis as meaning that "Bondi water is, if anything, purer than most sea water."¹⁵⁹

There were numerous personal testimonials in letters to the editor of people who had seen and smelt the sewage in bathing waters.¹⁶⁰ Nevertheless the Government analyst, taking samples at various beaches in 1929, declared the beaches clean.¹⁶¹ The difficulty lay, not only in the choice of spot from which the sample should be taken, but also in the interpretation of the analysis of such a sample. As the Board Medical Officer admitted in 1936, after returning from an overseas study tour, beach pollution had received very little scientific study and "no standards existed as to what constituted polluted water".¹⁶²

Even where it was generally agreed that water was polluted, there was no agreement over whether polluted bathing water was a health problem. From the Coogee campaign through to the Long Bay duplication decision the newspapers reported unnamed doctors blaming ear, nose and throat diseases on bathing in polluted waters.¹⁶³ One doctor, referred to only as a well-known eye specialist, wrote in 1936 that the water had been so filthy "as to make bathing a questionable performance" and that contaminated surf water had "a very bad effect on the eyes, ears, and mucous membrane."¹⁶⁴ There were also personal testimonies from surfers who claimed to have suffered septic throats and blood poisoning from the polluted waters.¹⁶⁵ Protesters claimed that Typhoid, Mastoid growths, ear infections and "terrible diseases" could be caught in the surf.¹⁶⁶ The Evening News charged

Apparently the health of the thousands of people who visit the beaches to surf is not valued by the board as highly as the estimated expenditure necessary to carry out the essential alterations.¹⁶⁷

However the authorities always denied allegations that polluted water was a health threat. One metropolitan Medical Officer, Dr J.S.Purdy, in his efforts to disclaim any health threats, claimed that he induced his family and friends to sniff Bondi sea water up their noses as a prophylactic against catarrh after observing that constant surfers did not suffer from influenza. Dr Purdy had bottled his samples of Bondi sea water and called it 'hypertonic supersaturated sea salt solution'.¹⁶⁸

¹⁵⁹ Guardian, 26th March 1929.

¹⁶⁰ Daily Telegraph, 26th March 1929; Sun, 26th March 1929; Sun, 27th March 1929.

¹⁶¹ Sydney Morning Herald, 5th April 1929; Guardian, 5th April 1929; Daily Telegraph, 5th March 1929; Labor Daily, 6th April 1929.

¹⁶² Sun, 15th January 1936.

¹⁶³ Daily Telegraph, 7th March 1929; Sun, 7th March 1929; Sun 26th March 1929.

¹⁶⁴ Daily Telegraph, 18th February 1936.

¹⁶⁵ Sun, 22nd March, 1929 and 25th March 1929.

¹⁶⁶ Daily Telegraph, 21st January 1936, 1st February 1936, 14th February 1936; Labor Daily, 5th February 1936.

¹⁶⁷ Evening News, 15th July 1927.

¹⁶⁸ Evening News, 22nd March 1929.

By 1936 the Water Board was willing to admit to some pollution but not that this pollution posed a health threat. Their Medical officer said that no definite evidence existed that beach pollution had led to any epidemic of disease and he felt that ear diseases which were sometimes attributed to water pollution might be caused by "a particle of sand or of seaweed."¹⁶⁹

At this time health legislation was being prepared to give the Health Department responsibility for monitoring pollution of bathing waters.¹⁷⁰ However health authorities also denied that pollution endangered public health. Dr Purdy, however, said that even when the surf was "grossly polluted" it did not imperil health.¹⁷¹ The Director-General of Public Health concurred that there was "absolutely no evidence to favour the contention that diseases are transmitted by pollution of the surf."¹⁷²

When Dare and Gibson reported they argued that the pollution on Sydney's beaches came from both the outfalls and from ships and dumping at sea. They quoted the American engineering text by Metcalf and Eddy to refute the idea that there was any real danger to health from polluted water. Metcalf and Eddy claimed that disease-producing organisms were present in the sewage but that these organisms were adequately dealt with by dilution in water.

Dare and Gibson also referred to a report by Dr Saunders, the Board's Medical Officer. Saunders denied that there was any danger involved in bathing at Sydney beaches. Bathing in polluted waters was dangerous if toxic industrial wastes were present but the quantities at Sydney's beaches were insignificant. There was no statistical evidence that there was any extra incidence of infections from the entrance into the bodies of swimmers of organic matter. Pathogenic bacteria, which might otherwise pose a risk, did not survive long in sewage and were scattered and dispersed in the water. Again there was no statistical evidence of disease from bacteria in the water. And bacterial counts, which did not differentiate between harmful and harmless bacteria, needed to be supported by epidemiological evidence or sanitary surveys, before being taken seriously. Dare and Gibson also referred to Dr Sydney Morris, Director General of Public Health, who was not so certain about the short life-span of organisms. Moreover he suspected epidemiological data could be distorted because many people would not swim when the water was very polluted or when the winds were on-shore.

Dare and Gibson admitted that, as the volume of sewage increased, the risk might also increase creating enough pollution to cause "septic conditions to cuts or membraneous portions of the body" which would not be on the records. They also asserted that the occasional analysis of polluted water may not have indicated pollution from the outfalls and "may even be due, in crowded areas, to the bathers themselves."¹⁷³

The denial of health risks by the authorities was in part their solution for dealing with a situation in which difficult political choices had to be made. Which is more

¹⁶⁹ Sun, 15th January 1936.

¹⁷⁰ Daily Telegraph, 3rd February 1936; Sydney Morning Herald, 3rd February 1936.

¹⁷¹ Sunday Sun, 2nd February 1936.

¹⁷² Sunday Sun, 2nd February 1936.

¹⁷³ Dare & Gibson, Sewer Outfall Investigation, p16.

important, Farnsworth asked, the public health advantages of direct disposal to sea or the public health detriment of rendering the beaches objectionable for sea bathing?¹⁷⁴ The reluctance of rate-payers to pay anything but a minimum meant that the Water Board, in its efforts to keep its constituents happy, was forced to choose between capital works.

The cost savings that were made available through disposing of untreated sewage into the sea allowed more money to be spent sewerage new suburbs and thereby improving the healthiness of those areas. The beachside suburbs tended to be older, working class areas whilst the newer suburbs were expanding to the West, North and South and resources were being allocated towards these new developments. In other words a large backlog in sewerage of new suburbs meant that the priority placed on sewage collection and removal remained even in 1936, and disposal was considered to be a far less important consideration. This meant that although the beaches provided a key recreation to all Sydney sides, the residents of seaside suburbs had a minority voice. People naturally placed their homes and neighbourhoods ahead of recreational amenities. Beach pollution could be denied, but a lack of sewerage provision was a more obvious health risk and had more serious political consequences.

Although the decision to cut corners on sewage disposal was a political and economic one, the Board and other government authorities felt that they had to justify the decision nonetheless. The claim that there was no health risk emanating from this choice was a necessary justification. There was also some attempt on the part of sewage outfall proponents to portray ocean disposal as a scientific concept and justify it that way. The Labor Daily suggested that outfall schemes were backed by "vast scientific research".¹⁷⁵ Concepts such as dilution, oxidation, filtration, oscillation of waves and sterilisation by sunlight were cited to make the ocean disposal seem like a scientific procedure.¹⁷⁶ Dare and Gibson claimed that treatment of sewage by dilution in sea water was

not only the cheapest in first cost in most cases, but is just as well established as a truly scientific process as the most elaborate artificial treatment ¹⁷⁷

Dare and Gibson did however admit that the tendency, in the United States at least, was towards treatment before discharge and the recognition that nuisance and pollution should be prevented near recreational areas.¹⁷⁸ (England tended to be less advanced in this¹⁷⁹) They therefore recommended some very rudimentary treatment in the form of screening and skimming. They suggested provision be made for progressive extension of the treatment process.

The promise of treatment at the outfalls was in the end necessary to quieten the unrest caused by the proposal to duplicate the Long Bay outfall although faith in the ability of some treatment methods to solve beach pollution was none too

¹⁷⁴ Farnsworth, The Major Amplification of the Sewerage System, pp6-10.

¹⁷⁵ Labor Daily, 25th January 1936.

¹⁷⁶ Sydney Morning Herald, 10th January 1936.

¹⁷⁷ Dare & Gibson, Sewer Outfall Investigation, p13.

¹⁷⁸ ibid., p4.

¹⁷⁹ ibid., p5.

strong.¹⁸⁰ The Mayor of Waverley expressed his doubts about methods which claimed to pulverise the sewage.¹⁸¹ A letter to the Telegraph pointed out

Screened and pulverised matter from outfalls is only sewage transformed in character, and is still floating matter and pollution when in suspension in the sea.¹⁸²

and Dunningham agreed

"According to Mr Farnsworth," went on the Minister, "if you squeeze a bad egg into a glass of water and you cannot see it, it cannot be there. He apparently believes that as long as it is not visible it is not objectionable. I think it is ten times as objectionable." ¹⁸³

Nevertheless the faith that most people had in the ability of science and technology to provide the answers meant that almost everyone believed that a modern and sophisticated treatment plant could prevent beach pollution problems. The Water Board promise of treatment at the outfalls and the findings of the 'independent' experts caused media interest and general public concern to recede. The president of the Australian Surf Life-Saving Association accepted the expert opinion, and set about restoring the reputation of Australian beaches.¹⁸⁴ Water Board members congratulated themselves that such eminent engineers had completely endorsed their scheme. Alderman Moverley the lone dissenter, meekly agreed with the report and merely suggested that in the future the Marley Head scheme might have to be considered.¹⁸⁵

CONCLUSION - EXPERT DECEPTION

There was never any disagreement amongst engineers, either in Australia or abroad, that ocean disposal of raw sewage was the preferred option when it was not too expensive in terms of initial capital costs. Ocean disposal was attractive as a low maintenance, labour free operation and certainly land treatment in the form of sewage farming, chemical precipitation and septic tank treatment had become extremely unpopular with both engineers and the public. In most places a little beach pollution was preferable to the nuisances which arose from badly managed treatment works in close proximity to residential areas.

It was convenient to ignore the possibility of environmental degradation whenever the authorities were trying to establish a sewage treatment or disposal facility. The engineers, in predicting that the ocean outfalls would not give rise to pollution, were able to defend a technological solution which achieved the political objectives of sewerage the city at minimum cost. Whilst environmental considerations were secondary to the engineers they were not so secondary to beachgoers and the authorities had to show that they had considered pollution

¹⁸⁰ Daily Telegraph, 17th January 1936.

¹⁸¹ Sydney Morning Herald, 18th January 1936.

¹⁸² Daily Telegraph, 25th January 1936.

¹⁸³ Labor Daily, 31st January 1936.

¹⁸⁴ Sydney Morning Herald, 1st April 1936.

¹⁸⁵ Water Board Minutes, 8th April 1936.

possibilities and reassure the public that there were none, despite the fact that commonsense suggested that pollution would be a problem.

The "we know what's best" attitude which engineers adopted seemed to justify extravagant promises and even lies, in having their solutions implemented. They played the part of impartial experts with the community's interests at heart, trying to educate the ignorant and sentimental citizen who was really only concerned about his/her own interests. This mantle of professional impartiality, however, was not so convincing when the engineers were subsequently forced to deny that pollution was occurring once the outfalls were built. Gradually, they began to admit that pollution did occur infrequently but they still denied that this posed any health threat to swimmers.

This deception was supported by other government authorities, in particular health authorities, and often amplified by local councils and businessmen who sought to attract people to their district to live and to their beaches for recreation. Complaints of pollution were repressed and channelled quietly through official channels to the Water Board. It was only out of desperation or when there seemed to be a chance of influencing Water Board proposals that this "hush hush" policy was lifted and the extent of public feeling allowed to show itself. In this way public participation in decision-making was minimised.

Once the ocean outfalls were decided upon there was little scope for remedying the plight of the beaches. The public clamour to have the outfalls removed from city beaches was ineffective partly because it would have been a very expensive exercise. The government and Water Board preferred to spend any available money on servicing unsewered areas where the health risks were greater, the votes were more numerous and where there would be immediate financial returns from the increased number of rate-payers.

The existence of a large physical infrastructure of pipes and pumping stations with the huge amount of capital tied up with it was a definite disincentive to changes in policies of disposal and limited the alternatives available despite the public furore about the pollution of city beaches. The effect of past decisions therefore continued to shape later ones, just as money invested in the first city sewers had narrowed the options to those that would deal with the sewage once collected by those sewers. The diversion of the sewage to the coast near Bondi Beach was an obvious add on to the existing system that avoided having to start again. Similarly the sewage farm decision, based as it was on the probable extension of the system to Long Bay, meant that the decision to build the first outfall at Long Bay had been well and truly foreshadowed years before.

The narrowing of options, because of past decisions and also because of the preferences of engineering personnel, left little scope for public protests to be successful. Only those which were congruent with engineering plans and required little alteration to the general system, such as the Coogee campaign, were able to achieve what they wanted. This meant that the public was seen, by the Water Board, as just another obstacle to the implementation of necessary and non-negotiable solutions to achieve politically determined goals. Citizens had to be mollified by any effective means, be it by false claims, promises or the bringing in of outside experts.