

WATER AND SEWERAGE.

An early consideration for council was to find a water supply for Armidale. At the council meeting on 19 June 1865 a possible common on Tilbuster Creek was discussed to find 'as large an area as possible with good water frontage'. Council applied to the government in June 1867 for the section of land at the source of Dumaresq Creek be granted as a water reserve. Surveyor W.A.B. Greaves suggested that the Mother of Ducks Lagoon near Falconer (now Guyra), would be the best site. Acting on this advice, council applied for this area on 16 July. By November, the surveyor general had approved this site and Greaves immediately commenced work and provided council with a tracing of the Mother of Ducks Lagoon, consisting of 3360 acres in June 1868. Whilst council approached the government for action, in providing as water supply, it also attempted to provide a town well in the interim.

As with other councils, Armidale council had little revenue and initially depended on storage tanks and wells for water. On 6 April 1869 a proposal came before council for £100 to be allocated for the sinking of a well and pump in the market square for public use. The proposal lapsed but the matter was raised one week later by Ald. Naughten. On 15 June he raised the matter unsuccessfully once again. Twenty one ratepayers petitioned council about a well in the square but aldermen had no desire to act until 24 August 1869, when the improvement committee 'considered it desirable that a well should be sunk in the Market Square at the earliest convenience'.¹ Despite the recommendation, the motion was lost on the mayor's casting vote because there were no plans or specifications. An amendment was then carried calling for the preparation of the plans and specifications. That October council passed a motion to have the Market Square vested in council.

The improvement committee recommended fencing of the Market Square and the provision of a pump and other appliances in May 1876. Two weeks later, £150 was voted for fencing the reserve, sinking a well and procuring a pump. Tenders for the pump and sinking the well were not called until November. Lasseter and Company were to supply the pump for £30 and the tender of Charles Foster or Forster for £38 5s was accepted for sinking the well. Two months was granted to complete the work. By March 1877, the well was down to 39 feet but no water was found and approval was given to go another ten to twelve feet. The well was down to 51 feet in May and approval was granted to drive another twenty feet. Forster was granted a six weeks extension in June to complete the work at £2 2s per foot. Problems arose as rock was encountered and in September it was down to 67 feet in rock. But one month later it was revealed the well was completed and 'now has 42 feet of water'.² The pump was then placed on the well and thirty feet of additional piping purchased.

¹ Council minutes, 24 August 1869.

² Council minutes, 16 October 1877.

In November 1879 a petition was presented drawing council's attention to the need for repairs to the town pump. In September 1880 J. McDonald was paid £17 for repairs to the town well. In April 1882 the improvement committee recommended a new town pump with handle for £25 and one week later the vote for the new town pump was raised to £75. The committee also decided to take all necessary steps to procure a suitable pump on 30 May 1882.

The Country Towns Water Supply and Sewerage Act was passed in July 1880. Under this Act, country councils could now seek government aid for the construction of water schemes.

In October 1882, '£100 was voted for a new well and tanks, to be sunk in the North-West corner of the Market Reserve'³ with tenders to be called immediately. In the same month C. Gallagher's tender for sinking the well was accepted and he was given one month to complete the well providing the work was undertaken to the satisfaction of the improvement committee. Trouble was encountered with the well owing to hard rock. The decision was taken to suspend the work in November with two trial holes to be sunk to see if water could be found without going through blue rock.

Gallagher was instructed to sink the well another ten feet in January 1883. Thirty pounds was also voted to fixing the pump. The new well at the Market Square was inspected in March 1883 and aldermen recommended 'it be filled in level to the surface and the old well bailed and windlass erected on it and pump repaired so as to be useful to that end of the city'.⁴ The question of sinking another well was allowed to stand over for two or three weeks until the government had a fair trial at sinking their well near the brewery, east of Markham Street.

The old well was examined and found to be clear with 22 feet of water in it. Action was taken to repair the old pump and the council meeting on 10 April 1883 was informed the pump on the well was now working. But at the meeting on 16 October the improvement committee reported, 'spending more money in repairing the town well pump would be wrong, and recommended that windlass, rope and bucket be provided instead'.

The construction of the railway line to Armidale meant an increased demand for water to supply the construction camps and the steam engines. The *Armidale Express*, 6 July 1883 reported : 'the consumption at the camp amounts to between 20,000 and 30,000 gallons per day, and the carts that are kept travelling to and from the town night and day cannot supply the demand'.

In February 1885 a number of municipal candidates for the approaching election spoke on a number of issues concerning the development of Armidale. The *Armidale Express*, 6 February 1885 commented it was admitted on all sides that a

³ *Armidale Express*, 6 October 1882, p.2.

⁴ Council minutes 6 March 1883.

good water supply would be an immense improvement to the town. At the meeting of council on 29 June 1886, Ald. Holmes said he wished council consider 'the necessity of taking steps towards getting a water supply for the city'.

In August 1888 council received a recommendation from the works committee that a pit be sunk near Proudfoot's dam; a space be excavated for a water reservoir and charcoal filled so that the water would purify itself. A Douglas pump and trough would then be placed on the pit for use by the public and the town clerk was instructed in October to write to the district surveyor asking 'to have the available ground on the flat near Proudfoot's now (McDonald's dam), reserved as a water reserve for the town'.⁵

On 13 November 1888, council instructed the town clerk to write to the Minister for Mines asking him to get the engineer at present in Hillgrove H.G. McKinney to report on a possible water supply for Armidale. The engineer could not visit Armidale but in February 1889 the water reserve was placed under council's temporary control. Reserve no 7799 consisting of an area of 41/2 acres for a water supply and public recreation in section 76 and notified on 24 November 1888 was placed under council's control on 5 February. Council again urged the government in March to send an expert to report upon the best means of obtaining a water supply for Armidale. Council was informed by the Department of Lands in April that their request had been referred to the Department of Works.

The Harbours and Rivers Department informed council in August 1889 an engineer Mr Grimshaw would come to Armidale to make a survey for the water supply and council was requested to give as much information as possible.⁶ In March 1890 Grimshaw informed council of the proposed water mains in connection with the water supply and requested an estimate of rates. That October the department presented the plans of waterworks to council and two weeks later the decision was taken to request the Governor to provide a water supply for the town of Armidale. Council agreed to undertake all the liabilities and obligations mentioned in section 125 of the Act 44 Vic. No 14.

At the council meeting 13 January 1891, £125 was voted for a temporary water supply provided it was matched by the Fire Brigade Board for municipal purposes and the use of the brigade. In March the mayor reported to council on a meeting with the minister in company with Mr Copeland in Sydney regarding the water supply. He was 'led to believe the present scheme would not be implemented as the Government did not believe Armidale could pay interest' but he concluded 'no doubt a cheaper supply would be established'.⁷

⁵ *Armidale Express*, 12 October 1888, p.4.

⁶ Council minutes, 6 August 1889.

⁷ Council minutes, 10 March 1891.

Council applied to the government in March 1891 for Mr Grimshaw or another competent surveyor to inspect and discover a possible cheaper method of supplying Armidale with water than the scheme already proposed. To support their case for meeting the cost of water, the Railway Department was asked in April if they would take council water. Mayor Drew, Mr Grimshaw (Civil Engineer of the Harbour and Rivers Department) and Engineer French met the Railway Commissioners en route from Queensland to Sydney in June. They inspected Butler Street and asked French to prepare estimates for repairs. They also agreed to the proposal to reduce freight for the carriage of water pipes 'as they would probably require 25,000 gallons of water at the Armidale railway platform per day, for which they were prepared to pay about 6d per thousand, amounting to £288 per annum'.⁸

At a special council meeting on Saturday 6 June 1891, the Mayor Ald. Cragie, Mr French and the council clerk prepared a schedule to show the probable revenue to be derived from water rates. 'The investigation proved that the available revenue would amount to £2,600⁹ with the interest and sinking fund amounting to £2000. A letter was received in July from the Department of Works with a report from Engineer J.W. Grimshaw regarding a water supply. The report was published in the *Armidale Express*, 17 July 1891. Whilst in Sydney in September, Mayor Drew and Mr Wilson met the Minister for Works regarding a water supply. The minister said the 'Proposed water scheme for Armidale would be submitted to the Cabinet, and dealt with as soon as as the Public Works Committee could take it up'.¹⁰

Two weeks later, council asked the government to provide a temporary water supply for fire and at the council meeting on 27 November 1891 council applied 'to have the temporary water supply laid on from the Gas Works through Beardy-street to its intersection with Taylor-street'. Details of the agreement with the government were tabled in January 1892 with water to be supplied at a cost of £560. In February, the mayor informed council that 'the question of a water supply for Armidale would be immediately placed before Parliament'.¹¹

A comprehensive enquiry was conducted by a six-man committee of the Parliamentary Standing Committee on Public Works on 18 and 19 October 1892 in the Armidale Court House and the Imperial Hotel. Seventeen witnesses gave evidence and these included the Mayor, William Drew; Aldermen John M. Duncan, Dr. William Murray and Charles Wilson; Dr George Wigan; hotel proprietors, John Kickham (Imperial Hotel) and Patrick Wade (Tattersall's Hotel); storekeepers Frederick Braund and William C. Higginbotham); retired pharmacist Henry G. Mallam and representatives of the Railway Department. The

⁸ *Armidale Express*, 9 June 1891, p.4.

⁹ Ibid.

¹⁰ *Armidale Express*, 9 October 1891, p.7.

¹¹ *Armidale Express*, 19 February 1892, p.7.

committee investigated in detail a proposal to construct a dam at Sam's Swamp on a northern part of Duval Creek north of Armidale.¹² Although the scheme to conduct water from Sam's Swamp by pipes to town reservoirs was recommended, it was later rejected.

In order to overcome the shortage of water, council took action in November 1892 to call tenders for the erection of ten 1000 gallon tanks and stands. Later that month, 'the report of the Public Works Committee was tabled in Parliament and ordered to be printed'.¹³ In February 1893, action was taken to take over the temporary water supply. The cost of supplying water dominated meetings for the next two months and at a special meeting held on 20 June 1893 the water rate in Armidale was reduced from 6d to 3d in the £.

By January 1894 water supply was still a problem. The well at the gasworks, although it was 36 feet deep and 9 feet in diameter, was barely sufficient for the works especially in dry weather as it emptied in two hours. A well was sunk in the creek 10 feet and cased six feet by four and a timbered pipe lowered to use this to supply water for fire fighting.¹⁴

The Chief Engineer of the Harbours and Rivers Department visited Armidale in September 1894 to investigate the site for the water supply. In November the Department of Public Works recommended a new site at Dumaresq Creek.

In March 1895 council expressed concern over the issue of railway passes to the unemployed to travel to the district. Council moved 'that in future contracts for the water supply the Department be asked to make some provision for the employment of local men'.¹⁵ Mr Copeland attended the next meeting of council held on 26 March to discuss a number of issues concerning the proposed water supply. In August the Public Works Department informed council that only Armidale residents were being employed on excavations for the storage dam at the supply works.

H.P Ramsay-Copeland, government resident engineer called tenders in the *Armidale Express* for the clearing of 42 acres for the reservoir site in March 1895. Mr Davis supervising engineer of the Harbors and Rivers Board visited Armidale in May to inspect the works under construction. He intimated to council 'that tenders will be called in a few days for laying the pipe line from the dam site to the service reservoir'.¹⁶ In November Ramsay-Copeland informed

¹² Report of the Parliamentary Standing Committee on Public Works, together with minutes of evidence ... relating to Proposed Water Supply to Armidale, Votes and Proceedings of the Legislative Assembly of New South Wales, Sydney, Government Printer, 1892.

¹³ *Armidale Express*, 25 November 1892, p.5.

¹⁴ Council minutes, 9 January 1894.

¹⁵ Council minutes, 12 March 1895.

¹⁶ *Armidale Express*, 31 May 1895, p.5.

council fresh tenders would be called for clearing and fencing the dam site. Council asked the tenders be advertised locally.

The *Armidale Chronicle*, 8 January 1896 described the dam to be built at Dumaresq. At the council meeting held on 24 March 1896, aldermen discussed the water supply pipes and hydrant boxes. In April 1896 contractor Wilson abandoned the contract for construction of the dam. Council then resolved to ask the government that if fresh tenders are called the new contractor be asked 'to use the engine and stone crusher left by the late contractor, and when the work is finished the engine and crusher be handed over to the Council'.¹⁷ Led by Mayor Ald. Wigan, a deputation of aldermen met Mr Darley, engineer in chief of the Public Works Department and other departmental officers to discuss the water supply in July. Because the contractor had failed, the department intended to complete the project by day labour. That month, the Public Works Department agreed 'to take over the hydrant blocks in connection with the water supply for £100'.¹⁸ Alterations to the dam were described in the *Armidale Chronicle*, 22 July 1896.

Council received information from the Public Works Department in September 1897 that completion of the water works would be gazetted on 31 August. The completed Dumaresq Dam was a concrete dam, 36 feet high and 62 feet long with a capacity of 102 million gallons, although by January 1943 the storage 'was reduced by silting'¹⁹ to 98 million gallons. At the time of completion the population of Armidale was 4000.

By August 1897, the permanent dam at the Dumaresq Creek was filling steadily and on 12 August the water was turned into the service reservoir. Once the waterworks were taken over by council, plumbers became very busy in Armidale making connections with the mains, because householders became 'seized with the idea that they may as well use the water as they are now virtually rated for it'.²⁰ The rising water in Dumaresq Dam caused problems with rotting vegetation and on 30 December 1897, John Moore, the Council Clerk informed water users that 'water has been rendered temporarily unfit for drinking purposes'.²¹

The various government departments in Armidale were consumers of water. In June 1898 council agreed to supply the Railway Commissioners with water up to ten million gallons annually for a sum of £250 for a period of ten years. But the issue of water costs arose with other departments. In January 1899 the Under Secretary for Lands claimed 'exemption from the water rate for the Land Board and District Survey Offices, under the Municipal Corporation Act, as they were

¹⁷ *Armidale Express*, 1 May 1896, p.5.

¹⁸ *Armidale Express*, 31 July 1896, p.4.

¹⁹ *Armidale Express*, 8 January 1943, p.5.

²⁰ *Armidale Express*, 19 October 1897, p.5.

²¹ *Armidale Express*, 31 December 1897, p.5.

occupied by departmental officials'.²² The aldermen instructed the town clerk to draw the Under Secretary's attention to section 185 of the Water and Sewerage Act and also seek an opinion from the Municipal Association. In reply, the Department of Lands claimed that under section 137 of the 1897 Municipalities Act 'Government buildings were exempt from payment of water rates'.²³ Angered by this action, the Public Works Department was informed that as a consequence of the government refusing to pay water rates on public buildings council was unable to meet interest on water supply accounts. The department 'insisted that the amount be paid without further delay'.²⁴ Mayor Ald. J.B. Fitzgerald and Mr Wilson M.L.A. were asked to meet the Minister for Public Works, Mr O'Sullivan in Sydney. Council received a further set back when the Board of Health reported four samples of water were unfit for human consumption.

At a meeting with the minister, the mayor applied for a reduction in the amount charged by the government. The mayor revealed that whilst the original estimate for the waterworks was £30 000 the final cost was £41 000. This meant that the regular payment was to be £1560 rather than £1050. Sympathetic to a reduction, the minister promised 'to write a strong minute for the consideration of the Cabinet'.²⁵ One month later, an officer from the Public Works Department, Mr K. Johnston visited Armidale to determine how much the municipality could afford to pay.

In August council determined to raise the matter of the water supply during the visit of the Minister for Works to Armidale in September 1900. A deputation of council aldermen led by the mayor and accompanied by C.G. Wilson met with Minister E.W. O'Sullivan. It was reported the 'net income from the Council from the water works was £1 200 per annum, and they were asked by the Government to pay £1 460'.²⁶ The minister promised to investigate the matter.

The general purpose committee was instructed in January 1901 to visit the catchment area of the waterworks at Duval with the Government Medical Officer. In February the government was asked to send up an officer to determine the quality of the Armidale water supply but the water was declared unfit for human consumption by the Board of Health in March. Assistance of the government was sought to clear out the storage dam and service reservoirs. That month council was informed the water was 'almost useless to the ratepayers and it is considered unjust to call upon them to pay for water which is unfit for use and absolutely dangerous to the health of the city'.²⁷ Despite the investigation some aldermen

²² *Armidale Express*, 13 January 1899, p.4.

²³ *Armidale Express*, 24 February 1899, p.3.

²⁴ *Armidale Express*, 31 March 1899, p.3.

²⁵ *Armidale Express*, 29 September 1899, p.4.

²⁶ *Armidale Express*, 11 September 1900, p.5.

²⁷ Council minutes, 26 March 1901.

expressed the opinion in May that the water was safe and the Board of Health report should not have been published.

The Under Secretary informed council in August that the arrears in rates now due on the waterworks was £3,134. Council agreed to forward £1050 but pointed out 'this was as much as could be collected under the present system'²⁸ and the water was still unfit for use. The Local Member Mr Wilson was again asked by council to approach the Minister for Works about the water supply.

The October 1901 meeting determined that a covering be arranged for the waterwork's boat to protect it from the weather at a probable cost of £4. The general purpose committee was also asked to report on the desirability of hiring the boat to picnic parties. The committee determined the boat be let to the public at 1s per hour and 6d. for any extra half hour. It was to be let for no longer than half an hour if others were waiting. Fees were to be collected by the caretaker and no more than 8 adults or 8 adults and 6 children at any one time.

In 1901 250 trees were planted for timber producing purposes in the waterwork's paddock. A serviceable boat was purchased for the waterworks in October and a shelter provided. The boat, constructed at Newcastle was sixteen feet long and five feet wide. The general purposes committee recommended the hiring of the boat with 'no more than 8 adults or 8 adults and 6 children at any one time'.²⁹ The additional duties meant that the caretaker J. Long was asked to resign in January 1902 as council required a younger man to keep agistment of stock, repair fences, clean the water shed, attend to the boat and scour pipes, do cleaning and other work as directed. Council advertised for a caretaker at 35s per week with additional duties to include repairing of fences, attending the boat as well as duties called by the mayor. At the same time, action was taken to enlarge the caretaker's residence, repair the old building as a kitchen and erect two earth closets. Patrick Carey was appointed caretaker in February and the tender of James Snell of £107 13s for erection of the residence and buildings was accepted in April.

In January 1902 the turncock was instructed to provide to council a return of names of market gardeners and other persons using town water supply for other than domestic purposes. In February council forwarded £1050 to the Department of Public Works for the water debt.

In March 1902 council received a detailed report by the government analyst on the quality of the water supply. At the time water flowing down the Dumaresq Creek was impounded into a dam 780 feet long and the analysis of water in this storage reservoir revealed water of a 'dirty drab colour' and the presence of 'vegetable organic matter'. The report recommended the 'storage reservoir

²⁸ *Armidale Express*, 16 August 1901, p.3.

²⁹ Council minutes, 22 October 1901.

should be covered. Aeration and filtration required'.³⁰ Despite opposition by some aldermen, the Public Works Department was requested in April 'to carry out the suggestion of the Government Analyst'.³¹ Council determined in May that no horse was to be admitted to the waterwork's paddock without an order from the council clerk.

The reservoir was now very low and the mayor moved in April 1902 that 'notices be sent to all persons wasting water, requesting them to discontinue ... otherwise meters would be affixed at their expense'.³² Two weeks later council took action to discontinue water (for garden purposes) unless through a meter. This action meant a deputation of concerned residents. Council determined in April to contact several firms in Sydney to determine the price of meters if purchased in large numbers. Council took action in May requesting all those who required meters to leave their name with the town clerk. A Public Works Department officer, Mr Campbell visited Armidale on Wednesday 23 April for the purpose of selecting a site and preparing estimates for filtering beds. He also enquired into the question of covering the service reservoir.

In June 1902 the Works Department informed council a surveyor, when available, would be sent to visit the works. At the same time, the issue arose concerning the payment of water rates by government departments in Armidale. Council claimed that the Works Department stated that all Government buildings would pay water rates on the assessed rental values. The Department denied the claim and said 'the practice adopted by the department is, in the absence of a special provision to pay ... at the rate charged to private persons'.³³

Numerous meetings of council were held to discuss the critical water situation. A special meeting of council was called on July 1902 because of the amount of water in the storage dam. Dissension appeared amongst the aldermen. Ald Fitzgerald said the last recommendation of the general purposes committee was not carried out. Ald Higinbotham was opposed to council compelling ratepayers to affix meters and his motion that the government analyst report concerning water quality be published in local papers had been defeated. It was decided to cut off water from horse troughs. Churches were requested to use water for organ purposes only on Sunday. Railway Commissioners were requested to limit water and aldermen instructed to report to council waste of water. The possibility of cutting off water from the service reservoir during certain hours was impractical as the turncock said if pipes were emptied it would take considerable time to charge them and numerous leaks would be created.

³⁰ *Armidale Express*, 14 March 1902, p.2.

³¹ *Armidale Express*, 11 April 1902, p.3.

³² *Ibid.*

³³ *Armidale Express*, 21 November 1902, p.4.

In July 1902 council took action to appoint a special water inspector to assist the inspector of nuisances and turncock to carry out recent council resolutions. The mayor referred in September to the small amount of water in the dam and seriousness of the situation. Council decided to give seven days notice that water would be cut off if used for other than domestic purposes through a meter or not. A number of ratepayers were detected in October using town water for gardens.

In November 1902 the town clerk was instructed to write to the Department of Public Works suggesting a clause be inserted in the Bill now before Parliament legalizing council to claim water rates on public buildings upon their assessed value. Again in December the department was reminded of their promise to pay water rates at the same rate as private persons. On receipt of its reply, council determined to write to other government departments.

The Railway Commissioners and Armidale businessmen A.W. Trim and G.F. Nott all wrote requesting water for boiler purposes in December 1902. Council granted permission for water to be used in boilers for a further fourteen days. At the same time action was taken to write to churches still using water for organ purposes.

In January 1903 council determined rates for water. Ratepayers using meters were to pay 1s per 1000 gallon up to the amount of the water rate on the property and 9d. per 1000 gallon on water used above value of the water rate. In March council decided that all persons using water, including those outside the borough, all hotels, churches and schools be requested to attach meters. In March council determined minimum water payments for the Police Barracks, Superintendent's residence and Lands Office in Falconer Street. The government properties were to be charged for water through meter at a rate assessed by council at the last assessment.

In February 1903 Father Xahn applied for water mains to be extended to Dark Town (Eastwood). Twelve months earlier, Ald. Kirkwood had asked in April 1902 if anything had been done to extend water mains to Dark Town. Council informed Father Xahn in March that an application had been made to the government who replied if council guaranteed £32 10s per annum interest, the matter would be taken in hand by government.

By March 1903 great difficulties had arisen for the hire of meters and council wrote to the Water and Sewerage Board in Sydney and Maitland for further information. Another urgent application was also to be made to construct filter beds or take any other steps to make water fit for human consumption. The government had selected the site for the water beds but nothing further was done and Ald Wilson moved in March 1903 that further application be made for the 'construction of the filter beds or any other steps to make the water fit for human consumption'.³⁴

³⁴ Council minutes, 4 March 1903.

The Postal Department informed council that 'Commonwealth property is not liable for municipal rates'³⁵ and the Department was only prepared to pay a fair charge for water supplied through a meter. Two weeks later the Deputy Post master General accepted council's offer of water to the Post and telegraph Office at £15 15s 0 per annum. A minimum water payment for the police quarters was accepted but the position concerning the Land Board offices in Falconer Street was stood over in March 1903. Council did agree 'to supply water by meter to the local hospital free of charge for the present'.³⁶ The Department of Lands was informed in May 'unless the Department accepts terms fixed by council water will be cut off'.³⁷ The department claimed the matter was closed but on the deliberative vote of the mayor, action was taken to cut the water off by four votes to three in June. Four months later, the resolution to cut the water off was rescinded with water to be supplied by 'meter at 1s a 1000 gallons, with a minimum charge of £10 per annum'.³⁸ Concerned about the position of government buildings and rates, 'the clerk was instructed to ask the Municipal Association for an opinion as to the liability of Government buildings to pay water rates'³⁹ and whether public buildings are rateable under the Country Towns Water and Sewerage Act 1880. At this same meeting, rates were determined for the police barracks in Mann Street, as well as the old and new police lock-ups in Falconer Street.

£1050 was paid to the Works Department account for the waterworks debt in June 1903.

The Coursing Club offered spare shrubs for planting at the waterworks in July 1903. In October council took action to purchase new oars and repair the boat at the waterworks. The caretaker was asked to provide a monthly statement showing amount collected for agistment of horses, boat fees, amount of agistment owing at the end of each month and number of stock in paddocks. The caretaker was asked in March 1904 to grub and clear an area of land for the planting of ornamental trees.

In January 1904 council decided to cut water cut off from the old Armidale lockup as the Justice Department refused to pay the amount fixed by council. However private residents not liable for water rates were granted permission to connect to the water mains at their own expense. Water was to be provided at 1s per 1000 gallons and an agreement was to be signed giving the council's officer the right to enter property and inspect the meter.

³⁵ *Armidale Express*, 6 March 1903, p.3.

³⁶ *Armidale Express*, 27 March 1903, p.2.

³⁷ Council minutes, 19 May 1903.

³⁸ *Armidale Express*, 30 October 1903, p.3.

³⁹ *Armidale Express*, 13 November 1903, p.2.

In March 1904 council sent £1000 to the Colonial Treasurer on account of the water debt. The Works Department was also informed the amount is less than it would otherwise be because of the government department's refusal to pay water rates.

A meeting of council concerning water was held in April 1904. Mayor Higinbotham reported on a meeting with the State Treasurer, the Hon T. Waddell accompanied State Governor Rawson on an informal visit to Armidale. Higinbotham informed the treasurer council could not pay more than £1050 p.a. because the government would not pay rates on government buildings and construction had exceeded original estimates by some thousands of pounds. The mayor said there was no truth in the *Sydney Morning Herald* report that Armidale ratepayers would not pay. Mr Waddell said he was pleased to consider everything and if estimates were exceeded, a proportion of capital would be written off and an allowance made for water rates on government buildings.

In December 1904 council decided to purchase water meters and hire them to ratepayers at 15s per annum. Residents had the right to purchase them at Sydney cost prices of £3 10s and freight. Council amended the decision in January 1905 to purchase meters and to sell them to ratepayers on a time payment at 10% of actual cost to be paid at 1s 6d per month to be paid quarterly. Samples of reservoir water and of School of Arts water tank were to be sent to Sydney for analysis. In June council took action to publish the analysis of Armidale's water from the Department of Public Works with details of the previous report to show improvements in quality. At the same time, council was informed the storage dam was leaking at about 5000 gallons daily. The government was again urged to construct a filter bed to improve the quality of water.

Council paid £900 off the waterworks debt in August 1905. Approval was given for the mayor and Ald. Fitzgerald to wait on the Premier when in Sydney for the municipal meeting with a view to obtaining a reduction in the water debt. In September the mayor reported that the Minister for Works had refused a reduction in water rates but had in view a bill to render the government liable to rates on government buildings and also favoured a Bill giving permission to increase rates. Ald Fitzgerald reported to council on the meeting with the Minister for Public Works in October.

The works committee reported in March 1906 that the amount due to the government was £1081. Some £700 was owed in outstanding rates as well as bad debts and water meter accounts. The City Bank had a balance of £500 and there was an accumulated deficiency of £268 13s 9d. The committee recommended that the deficit 'be allowed to remain in abeyance, pending another application to the Government for payment of old arrears (£386) due on Government buildings'.⁴⁰ In April council took action to enforce the resolutions passed at the council meeting on 6 January 1903; that is, prosecutions were to be instituted

⁴⁰ *Armidale Express*, 30 March 1906, p.3.

against all persons using water in contravention of By Law 30 and subsequent resolutions were to be referred to the Municipal Association. The inspector of nuisances was instructed in May to supply council with a complete list of persons using water in contravention to Water and Sewerage Act of 1880-1905 or any by-law made thereunder. The mayor was directed in June to carry out provisions of clause 35 of the Country Towns Water and Sewerage Act of 1905 to enforce water meters. He was also empowered to produce a list of persons whose premises it was thought necessary to affix water meters.

In May 1906 £700 was forwarded to the government on account of the water debt. Council received a letter from the Under Secretary of Public Works in June informing council a committee appointed to investigate debts of country town's water supply would be leaving for Armidale on 2 July to look into the water supply account. In August a further letter was received from the Public Works concerning the assessments on public meetings. Under the act the minister must approve assessments on government buildings. That September council asked that the arrears of £376 16s 2d on government buildings be credited to council to come off the water debt.

In November 1906 the general purposes committee recommended that water be supplied to persons outside the Borough through 3/4 inch connections. Costs were to be 1s per 1000 gallons with a minimum 15s per annum and a 2s 6d per meter reading.

At a council meeting on 11 December 1906, H. Warner was allowed to ringbark useless trees in the water works 80 acre paddock under the supervision of the caretaker and was given an annual 5 year lease at £8 10s. Two shillings per acre was also to be expended during the first two years.

In May 1907 the Under Secretary Finance and Trade requested council forward vouchers for water rates on government buildings in Armidale made payable to the Colonial Treasurer. The government reminded council that the amount owing was £18432 18s 9d. Recently council had forwarded £1000 to the government on account of the waterworks debt and requested any amount owing on government buildings for water rates be credited to the waterworks account. Council agreed to comply with the government's request.

A letter was received from the Government District Architect in July 1907 concerning increased water rates levied on the Old Telegraph Building. He requested the rates be levied in accordance with the old assessment. Council determined to write to the Department of Works informing them of the rate increase of 1s 2d; 'If private premises had to be assessed at that rate, it was only fair that Government ones should be also'.⁴¹

⁴¹ *Armidale Express*, 26 July 1907, p.3.

The mayor and deputy mayor were instructed in September 1907 to meet the Premier and Minister for Works when in Sydney for the Municipal Conference and raise the settlement of old arrears on water rates due on government buildings in accordance with the Premier's promise. Later that month, a letter was received from E. Lonsdale MLA saying that the government would pay most of the arrears in water rates on government buildings and the remainder was to be written off.

In November 1907 council determined to construct a boat house at the high water mark at the water works and to procure transport for conveying the boats at an estimated cost of £25.

In January 1908 council decided to pay £500 off the water debt. The Public Works Department informed council in February that concerning the overdue water rates on the District Works Office, Police Superintendent and Land Board buildings the 'three departments would each pay one third of the amount- £76'.⁴²

Council decided in November 1908 that owing to the financial position of the waterworks account council should not reduce last year's rate of 3d per 1000 gallons for water for baths. Treasury also 'advised council that the sum of £107 10s representing water rates on Government buildings in Armidale, had been applied in part liquidation of the sum of £1016 4s, the balance of the annual instalment due on the local waterworks'.⁴³ The treasury then requested a further remittance and £600 was forwarded on account of the overdue instalment on the waterworks. Twelve months later treasury informed 'that a balance of instalment on the local waterworks of £411 10s 3d was still overdue'⁴⁴ and warned of interest charges that could be charged. Council forwarded £350 on account.

The main pipe was extended in Mann Street to Canambe Street and in Canambe Street to the intersection of Mossman Street. Council planned to connect all residents by 31 December 1908.⁴⁵

A fierce debate again arose in November concerning the quality of water. Ald. Cohen felt that problems arose because stock were allowed to graze on the area. Mayor Hawke said 'he was not in favour of sending samples of the water to Sydney, and contended that the water was not as bad as represented'.⁴⁶ Ald. Jones felt that the water would always be the same until filter beds were constructed.

⁴² *Armidale Express*, 28 February 1908, p.4.

⁴³ *Armidale Express*, 27 November 1908, p.4.

⁴⁴ *Armidale Express*, 12 November 1909, p.2.

⁴⁵ *Armidale Express*, 27 November 1908, p.5.

⁴⁶ *Armidale Express*, 26 November 1909, p.2.

In January 1912 the turncock H. Schmutter expressed concern about the amount of water being wasted. A detailed discussion eventuated in council and concern was expressed about the number of residents without meters. A motion proposed by Mayor Ald. Solomons 'where the water was wilfully wasted prosecutions should follow'⁴⁷ was passed. By September, council had taken action for residents to enter into contracts for the supply of water for other than domestic purposes. The turncock had inspected all residences and estimated the water to be used. For large residences with large grounds (over 1500 square feet), meters were enforced; from 1500 to 1000 square feet 10s was the fee and for areas under 1000 7s 6d. In September 1914, council 'decided to enforce the use of meters generally ... and to do away with all written agreements at date of expiry'.⁴⁸

In March 1915 the Eastwood Progress Association applied for the installation of water and in the following month 'the hon. secretary of the Eastwood Progress Association submitted a revised scheme for the extension of the water main to Eastwood'.⁴⁹ The association's main consideration was water for domestic purposes rather than extensive gardening. Council was not prepared to take action and in August 1916 council postponed the matter of the proposed extension of water to Eastwood until estimates were considered for next year.

In April 1915 council decided that the boats should not be used by the public at the waterworks and decided to sell the large boat by tender.

A correspondent in the *Armidale Express*, 'Aqua Pura' warned council of the danger of leasing grazing rights at the waterworks and commented, 'if the leasing of the reserve is likely to prove detrimental to the general health of the community by all means let us have none of it'.⁵⁰

The Local Government Act 1919 repealed the 1880 Country Towns Water and Sewerage Act. The Act now provided for the construction of water works.

Despite the provision of a reservoir, the water supply often receded and the service reservoir could not supply water to the higher portions of the town in summer. The Department of Works informed council in August 1916 'it is impossible to enlarge the local water storage reservoir at anything like reasonable expense'.⁵¹ Discussion of the water supply issue dominated council business and in January 1919 council decided to seek the assistance of the Railway Department. An engineer from the department arrived in Armidale in February to advise council on 'the best method of augmenting the storage furnished by the

⁴⁷ *Armidale Express*, 26 January 1912, p.3.

⁴⁸ *Armidale Express*, 25 September 1914, p.5.

⁴⁹ *Armidale Express*, 16 April 1915, p.8.

⁵⁰ *Armidale Express*, 30 August 1918, p.8.

⁵¹ *Armidale Express*, 25 August 1916, p.6.

present water scheme at Mount Duval'.⁵² A number of aldermen accompanied him when he inspected the catchment area.

On 20 May 1919 the water supply was cut off from the Railway Commissioners. The old well in Markham Street near the Dumaresq Creek constituting an auxiliary water supply proved of little use and because of the dry conditions water trains found difficulty in coping with the demand. In June the Railway Department sought permission to construct a subsidiary reservoir on Zion Hill (North Hill) at no expense to the council. 'The matter was to be further considered as the scheme develops, but the consensus of opinion in the Council is that the suggestion would be a good one'.⁵³

Mr King, an officer from the Public Works Department visited Armidale in September 1919 to report on the critical water supply and also visit Commissioner Waters to the east of Armidale. A special meeting of council was held on Thursday 18 September 1919 to consider his report. King's report revealed that for the first time, Armidale's water supply had failed and household and railway connections were cut off with the exception of the hospital, the Roman Catholic convent and the hotel's septic tanks. He recommended 'immediate steps be taken to ascertain the availability and cost of 4 in. to 6 in. cast iron and steel, and pumping plant for lifting water from Tilbuster Creek as a temporary augmentation'.⁵⁴ Based on the report, the Public Works Department recommended the expenditure of £6 800 on a temporary water supply known as the Tilbuster scheme. Council rejected this recommendation. King again visited Armidale on 23 and 24 September to inspect Commissioner's Water and the Gara River. Accompanied by the mayor and several aldermen, he also visited the new catchment at Malpas, head of the Gyra River.

The water situation was critical in Armidale. Early in October 1919 a well was made available for public use on the northern side of the creek at Allingham Street but council warned residents of the fact that the analysis of the water has not been received. It was later found to be unfit for human consumption. A week later the railways and council conferred on the water situation. A tender was called that month for the immediate sinking of eight wells of 10 feet diameter and 12 feet deep situated near the Dumaresq Creek at Taylor, Marsh, Faulkner, Dangar, Jessie, Allingham and Markham Streets and West End. Seven months later, a well on Soudan Hill having been sunk to a depth of 43 feet was abandoned 'without water being found in any quantity'.⁵⁵

A public meeting was called for Friday 7 November 1919 by Mayor Hawke to consider the Gara Scheme. The meeting filled the town hall and was one of the

⁵² *Armidale Chronicle*, 12 February 1919, p.4.

⁵³ *Armidale Chronicle*, 14 June 1919, p.4.

⁵⁴ *Armidale Chronicle*, 17 September 1919, p.7.

⁵⁵ *Armidale Chronicle*, 15 May 1920, p.2.

largest for several years. A number of speakers commented and it was moved that the Gara Scheme be turned down and a second meeting be called in one week's time. Again a large meeting attended and the mayor reported on developments. Two representatives of the railways had met a council deputaation and offered to bring tank of 20 000 gallons to receive Woolbrook water. The mayor believed that the most appropriate course of action was 'to run a pipe line to the nearest point on the Gara above the junction, and erect a weir 3 or 4 feet high'.⁵⁶ The meeting recommended that water from wells found to be suitable be pumped into the mains; that council determine costs of a Malpas and Styx scheme and to enter into negotiations with a company to sink a bore or bores in the creek.

The Minister for Works and Railways, the Hon. R.T. Ball arrived in Armidale in January 1920 to meet a deputation led by Mayor Hawke. To that date, no further action had taken place but Mr Ball was receptive to the case presented and promised to have 'the whole question of the local water supply gone thoroughly into'.⁵⁷ The Railway Commissioner also sought details when council could again supply water in February. Mr King, an engineer from the Department of Public Works arrived in March to investigate the Styx and Gara River schemes. His detailed report concluded the Gara scheme was the best scheme to meet the present emergency 'if worked in conjunction with the existing storage as a reserve'.⁵⁸

Liuetenant Colonel Bruxner informed council in December 1920 that the house had referred 'the auxiliary water supply for Armidale to the Public Works Committee'.⁵⁹ In January council rejected the Gara water supply scheme owing to the cost of £87 000. The committee visited Armidale in February 1921 and conducted a public hearing at the council chambers to take evidence from Armidale residents and council representatives. In March it resumed hearings in Sydney to take evidence from C.M. de Burgh, the Departmental Chief Engineer. At the time it was estimated that the daily consumption of water for the town was 250 000 gallons and the railways 75 000 gallons per day.

The Malpas scheme was described fully in the *Armidale Chronicle*, 23 March 1921. It provided for the construction of a dam across the Gyra River, forming a storage reservoir at Malpas, about 16 miles north east of Armidale. The dam was to provide water by gravitation through a main 24.6 miles long and discharging into the present service reservoir. Council requested an engineer's report in June in connection with the proposal to build an additional wall below the existing dam at Dumaresq. A Public Works engineer's report recommended the erection of a dam at a cost of £32 000 in August.

⁵⁶ *Armidale Chronicle*, 19 November 1919, p.6.

⁵⁷ *Armidale Express*, 27 January 1920, p.2.

⁵⁸ *Armidale Express*, 16 April 1920, p.2.

⁵⁹ *Armidale Chronicle*, 4 December 1920, p.3.

In October the Minister for Works advised council 'it was his intention to have the matter of the extra water supply ... submitted to the Parliamentary Standing Committee on Public Works for inquiry and report'.⁶⁰ The committee visited Armidale for the second time in the past twelve months in November 1921. Their mission was to inquire into the auxiliary water supply scheme. During their first visit they took evidence concerning the Gara Scheme; a project involving some £100 000 and embracing a plant to dam the Gara River and pump the water into Armidale. Council was informed in December that the committee had agreed to the proposal to construct certain works to augment the water supply of the municipality.

The Public Works Committee approved an auxiliary water scheme and in May 1922 council was informed the Minister has given instructions for the preparation of the necessary Authorising Bill. The members for the Northern Tablelands, D.H. Drummond and A. McClelland M.L.A. and the mayor of Armidale formed a deputation and met with the Undersecretary for Works, T.G. Cooper on Thursday 15 June concerning the scheme. Colonel Bruxner, M.L.A. advised council that the bill in connection with the Armidale water supply was introduced in the Legislative Assembly in August. The work and funding of £32 000 was approved by an Authorising Bill on 17 November.

The railway was an important consumer of water. Water supplied to the Railway Commissioner from 1920 to 1922 was: 1920 13 524 000 gallons and £676 revenue; 1921 22 714 000 and £1119; 1922 20 791 000 and £1039 revenue.⁶¹

In March 1923 the Railway Commissioners asked whether council still wished the department instal a pumping plant at the Markham Street well to relieve the water situation. The department completed the pump in May but the turncock H. Sheldon 'expressed the opinion that the Commissioners were not taking the fullest advantage'⁶² of the well. The department received permission of council to lay water from the council's main to the site of a 300 000 gallon reservoir in July 1923 and by 15 April 1924, construction of the reservoir was underway for the railway. This site was situated north of the Armidale High School and adjacent to Kentucky Street. This reservoir was still there within the Armidale High School grounds in May 1955.

The Mayor Ald. Morgan Stephens welcomed the Public Works committee at a function held at the Imperial Hotel in May 1923. The committee was in Armidale to investigate the Guyra-Dorrigo railway line but in his address the chairman of the committee, Mr Dick referred to the water situation investigated on the previous visit. He assured the people of Armidale that members of the committee would approach the subject with unbiassed minds.

⁶⁰ *Armidale Chronicle*, 19 October 1921, p.7.

⁶¹ *Armidale Chronicle*, 29 November 1922, p.2.

⁶² *Armidale Express*, 30 May 1923, p.3.

The *Armidale Chronicle*, 16 June 1923, reported 'there will be six or seven tenders for the construction of the dam at Duval, to give Armidale an augmentary water supply'. The Public Works Department approved an auxiliary water supply dam with the construction of an additional dam on Dumaresq Creek and other incidental works. But a 'grave and lamentable error had been made in the estimate'⁶³ and consequently the matter was held up. The original estimate was £32 000 but council was informed in August 1923 the revised estimate was £50 900.

A number of residents did not accept the decision about the water scheme and at a public meeting held in November debated the motion 'that this meeting of the ratepayers of Armidale regard the contemplated auxiliary water supply scheme as inadequate for the need of a growing city, and do not consider it justifiable to spend the sum of £62,700 on such'.⁶⁴ Many believed the Styx water scheme should be developed. Following further meetings with the minister the Mayor Ald. Morgan Stephens announced in November we were able to get the minister to suspend operations on the present scheme, while further inquiry is made into other schemes.

Keele and Cardew's report and its advocacy of the Serpentine proposal, estimated to cost £160 000, was considered by council early in 1924. But council accepted the Dumaresq Creek augmentation supply plan on 3 March. Following a request by a public meeting, an optional poll of ratepayers was held on 12 April and three schemes were submitted: the Serpentine, Dumaresq Creek and Wells. Council required 51% to vote but as only 24% voted, council reaffirmed its desire to proceed with the construction of the Dumaresq Creek scheme by day labour at an estimated cost of £50 900 at the meeting held on 12 May. Then the Puddledock Creek scheme was mooted on 7 July and following an inspection by an officer from the Public Works Department, council was informed the approximate cost would be £77 000. Consequently by January 1925 commencement of Dumaresq Creek scheme had been postponed, pending a full report after survey from the Puddledock scheme, as requested by council on 8 September 1924.

Following release of the report on the Puddledock scheme, resumption of the land for the dam on the Puddledock Creek was published in the *N.S.W. Government Gazette* on 12 February 1926. The land included part of portion 124, parish of Springmount and part of portion 79, parish of Tilbuster, county of Sandon. Council and the Public Works Department accepted 'Court and Braithwaite's tender of £28 764/12/6 for the construction of the dam only of the Puddledock water supply'⁶⁵ in 1926. Mayor Stephens, accompanied by five aldermen, the assistant town clerk and the District Work's Officer Mr Buckler, met Mr Court

⁶³ *Armidale Chronicle*, 1 August 1923, p.8.

⁶⁴ *Armidale Express*, 13 November 1923, pp.3-4.

⁶⁵ *Armidale Chronicle*, 22 January 1927, p.5.

from the contractor firm of Court and Braithwayte at the site of the Puddledock Reservoir in October 1926. By that time, the excavations were practically complete and the building of the concrete wall was to commence shortly. It was 'expected that the dam will be completed in about 12 or 18 months'.⁶⁶

In July 1927 the Department of Public Works informed council that the original estimates for the Puddledock scheme submitted to council had been increased from £66 200 to £74 200. The increased costs arose because of the need for additional excavation and concrete in the foundations of the concrete dam caused by faulty rock; amendments to the gravitation main and rise in prices due to an increase in award rates. Council moved that the attention of the Government be drawn to the slow progress and the Department be urged to enforce penalties because delays had resulted in additional charges to council.

Water shortages continued and council took action to limit usage by large organizations and individuals. In August 1927 it was recommended that the railway commissioner's supply be limited to 1 500 000 gallons monthly; the New England Girls' School to 80 000 gallons monthly and Mrs White (Booloominbah) to 5 000 gallons monthly.⁶⁷

The Puddledock Dam was completed in 1928 with a capacity of 164 million gallons for a population of 6000 people. The dam wall was built of concrete with a height of 56 feet and length of 600 feet. The Public Works Department had arrangements under way by January 1929 to gazette a catchment area for the Puddledock Reservoir and requested council to give careful consideration to the suggestion that both the Dumaresq and Puddledock water be filtered at the existing service reservoir site.

The Puddledock supply was taken over on 7 December 1929 at a gazetted cost of £73 762 4s 7d. The *Government Gazette*, 2 May 1930 announced the completion of additional works at the cyclopean concrete dam on the Puddledock Creek. These works included a gravitation main; a 10 inch steel movable offlet pipe, steel and ironwork, crab winch and fencing.

In 1930 there were caretakers at the Puddledock and Dumaresq Dams.

The town clerk revealed the extent of the damage caused by white ants in the Puddledock line and commented 'the sum of £974 would have to be set aside annually to provide for the replacement of sections of the main'.⁶⁸ The Australian Wood Pipe Company informed council it was willing to supply creosoted wooden pipes and labour and to meet with council officers.

⁶⁶ *Armidale Express*, 19 October 1926, p.2.

⁶⁷ *Armidale Chronicle*, 17 August 1927, p.3.

⁶⁸ *Armidale Express*, 4 June 1930, p.7.

The Armidale and District Rod Fishermen Association applied in November 1929 for permission to release trout fry into the Puddledock Reservoir but the request was refused. In November 1935 the association sought permission to erect a wall at the Dumaresq Dam with council to meet half the expenditure. The aldermen supported the request but the 'Mayor pointed out that the matter should be referred to the Department of Public Works'.⁶⁹ Initially the plan was rejected but following further representation, the Department of Public Health approved 'the construction of special races and dams at the reservoir for the trapping and stripping of trout ... provided the work was carried out under the supervision of the Armidale City Council Health Inspector'.⁷⁰ The Department of Works and Local Government also approved construction of the trout trap under certain conditions.

Prior to 1930, a 10 inch main lead was installed from the Dumaresq reservoir to the service basin and a 6 inch outlet supplied the town. The lack of pressure on the southern heights was a constant source of complaint and in October 1930 the water and lighting committee completed a 10 inch main from the service basin to supply the central and southern areas of the city.

In July 1933 council took action to invite the Public Works Department to solve the problem of water supply to the high portions of South Armidale in peak periods of demand in summer. The scheme recommended by the department and adopted by council involved the zoning of an area from Allingham Street to the west to Brown Street to the east. This area was served by a six inch main from the Dumaresq Dam and the supply reservoir on Soudan Hill. The other parts of the city were served from the Puddledock Dam and a 10 inch main from the Soudan Hill. Completed in January 1934, the supply failed when turned on.

Armidale Golf Club advised council in August 1934 it wished to secure water and indicated 'between 250 000 and 500 000 gallons would be required each year'.⁷¹ The application was granted.

Following a visit by the health inspector L. Brown accompanied by Messrs Rossbeck and Cornish from the Public Works Department, it was reported to council the dam was full and equipment was in a satisfactory state. But concern was expressed when Brown reported 'a large amount of silt had been washed into the dam during the heavy rain, and came from cultivated paddocks between the caretaker's cottage and the dam'.⁷² At the time, council had no power to prevent ploughing because the land in question was privately owned.

⁶⁹ *Armidale Express*, 13 November 1935, p.7.

⁷⁰ *Armidale Express*, 1 July 1936, p.4.

⁷¹ *Armidale Express*, 22 August 1934, p.6.

⁷² *Armidale Express*, 23 January 1935, p.6.

By February 1935 concern arose about the quality of the water supply and council decided to investigate the cost of providing filters.

The Country Towns Water and Sewerage Act 1880 ended in 1935. Councils were now to become the construction authority with part of the cost to be met by the government. "A committee of investigation was to determine the proportion to be contributed by the two parties".⁷³ Two years later, a debt act was passed to assist councils for debt repayments incurred under the 1880 act.

In May 1936 the government was requested 'to allow Council to expend the sum of £3,000 from the Government reserve fund, in renewing portion of the Dumaresq main line with 10 in. C.I. pipes'.⁷⁴ Engineer L.G. Botham informed council that three sections of the Dumaresq pipe line had been renewed. That August, council ordered ten inch iron pipes for the renewal of the pipe line at a cost of £3000 from Australian Iron and Steel.

The Metropolitan Water and Sewerage Board offered a 21 year old, steel 40 000 gallon tank to council for £25 in July 1936. The tank was dismantled at Prospect, Sydney and railed to Armidale in eight sections. It was placed on South Hill alongside the existing reservoir at the corner of Galloway and Jessie Streets.

The editor of the *Armidale Express*, 18 January 1937 believed that there are two courses open to council if a clear domestic water supply was to be provided: 'Firstly, the construction of filter beds and, secondly, the scrapping of the existing reservoirs and the undertaking of the Serpentine or Styx River supply'.

Work was begun on the gravitation scheme in November 1934 and was completed in February 1937 at a cost of £67 000. The length of the pipe was 12 miles. The pumping scheme was put into use in March 1938 at a cost of £32 170.

Following the promise made by the Minister Spooner during his recent visit to Armidale, the supervising Engineer, W. Roper visited Armidale in June 1937 to inquire into the proposed water supply augmentation. Over a period of three days, he visited the Dumaresq Reservoir to consider the raising of the existing dam wall and construction of an auxiliary dam; an inspection of the proposed new service reservoir and filter plant. During the visit, a series of proposals were outlined to him: straightening and raising Dumaresq Reservoir; construction of an open channel from the Serpentine and the possibility of taking Malpas or Upper Gara water to Puddledock thus saving the cost of a pipeline from the latter reservoir to Armidale.

Council informed the Department of Works and Local Government in September 1937 of the damage caused by white ants in the pipes supplied by the Wood Stave Pipe Company. Council also sought full details of rights under the agreement

⁷³ Larcombe, Vol. 3, p.436.

⁷⁴ *Armidale Express*, 27 May 1936, p.7.

between the government and the company. By September maintenance of the wooden pipe line was causing the municipality £300 per annum. The *Armidale Express*, 13 October 1937 commented: 'The agreement entered into by the company provided that it should maintain, at its own cost, the 10. in wood stave gravitation main' from Puddledock. In 1938 council made a claim for £900 and sought legal advice concerning the original contract. In April 1939 council sought the original contract and specifications between the Department of Public Works and the Wood Stave Pipe Company for the construction of the wooden pipe line in Armidale.

Council decided in September 1937 to consider the construction of a water supply service reservoir at North Armidale for treatment of the Puddledock water prior to reticulation. Council decided in October 'that a 11/2 million concrete reservoir be constructed in Drummond Park, with two sand filter beds for water clarification, and piping and valves to connect from the puddledock main to the reservoir and to the city reticulation at an estimated cost of £8 500'.⁷⁵ An application was to be made for a grant to the department under the Local Government Amendment Act 1937. The offer of a government grant of £7000 towards the cost of a £30 000 water filtration scheme was accepted by council in March 1938. Council rejected an offer by the Minister for Works to wipe of £19000 from the water supply debt 'on condition that the council agreed to fund its debts and borrow from private sources'.⁷⁶

City engineer L.J. Botham outlined in detail the various proposals to council concerning the proposed filtration plant in June 1938. Subsequently council appointed the Mayor Ald. W.H. McBean and Ald. Monckton to meet departmental officers to discuss the proposal and funding of the water supply debts.

Council decided in August 1938 that water supplied to the New England University College would be charged 1s 6d per 1000 gallons until filtered water is available. Consumption at that stage was expected to 1 000 000 gallons per annum. Council decided to proceed immediately with the government grant of £2500 to lay water pipes from the town supply along the Old Inverell Road to the New England University College in January 1939. In February council accepted a tender and submitted the plan to the Department of Works and Local Government for approval. The Dumaresq Shire granted permission for the laying of a service main along Inverell road to the College in March. In May the consulting engineers submitted plans for the altered position of the pumping station and the water main for connection to the college. Council then called tenders for erection of a pump house near the college grounds and in June the pump house was ready for the installation of the boosting plant.

⁷⁵ *Armidale Express*, 27 October 1937, p.4.

⁷⁶ *Armidale Express*, 25 May 1938, p.4.

In January 1939 action was taken to impose water restrictions. At that time, only 10 000 000 gallons remained in the Dumaresq Dam and if the dam emptied it was determined the town would need to be served from the Puddledock supply, and the 10-inch main could not cope with the demand. Council officers hoped that the dual system of Dumaresq and Puddledock would meet Armidale's needs but prolonged dry weather meant the water in both dams often receded alarmingly.

Council appointed Haskins, Davey and Gutteridge, Sydney engineers as consultants in January 1939 to prepare a report on Armidale's water supply, augmentation and filtration proposals. No action was to be taken concerning the offer by the Minister for Works and Local Government on debt funding proposals until after the completion of the consultant's report. The consultants forwarded their report in February. Council accepted the report at an estimated cost of £64 020 and determined to forward the report to the Department of Works and Local Government for comment with a deputation to meet the minister regarding a £20 000 grant for their work. Mayor McBean and the town clerk met Mr Spooner, Minister for Works and Local Government on Wednesday 15 March 1939 to discuss augmentation of Armidale's water supply and loan and grant associated with the scheme.

Council discussed doubts concerning the capacity of the Malpas River Scheme to solve the problems of the supply of a pure and adequate water service. The editor of the *Armidale Express*, 22 March 1939 felt that because of the uncertainty, 'Council would be well advised to call for the complete report prepared by the Department on the Gara Bridge scheme before committing itself'. Two weeks later, the editor urged that the full report 'should be secured and made available for examination'.⁷⁷

Foxall and Lines, surveyors engaged by Haskins, Davey and Gutteridge visited Armidale in March to make a survey of the catchment area of the proposed Malpas water supply scheme. G. Haskins, one of council's consulting engineers also met representatives of Dumaresq Shire, Armidale P.A. & H. Association, Chamber of Commerce and the Grazier's Association to discuss the proposed water augmentation scheme at Malpas. The survey report presented in May proposed the moving of 'the pumping station to a site adjacent to the junction of Bow's Creek and the Gara River and to pump the water an additional 70 feet'.⁷⁸ This scheme avoided the construction of a tunnel. In June 1939 council approved the installation of electricity for pumping water from the dam site at Bow's Creek into Puddledock dam.

In March 1939 council 'decided to apply to the State Superannuation Board for loans aggregating £162,50/14/5'.⁷⁹ The loans were to pay for the sewerage debt,

⁷⁷ *Armidale Express*, 5 April 1939, p.4.

⁷⁸ *Armidale Express*, 10 May 1939, p.6.

⁷⁹ *Armidale Express*, 24 March 1939, p.7.

water supply and the water filtration works. Council accepted the terms of the loan from the State Superannuation Board of £51 200 for the water supply augmentation and filtration scheme in May. That month the Department of Works and Local Government advised council 'that the Governor had approved the £76,855/10/4 and £35,575/4/1 loan proposals for re-financing the council's water supply and sewerage capital debts'.⁸⁰

A public meeting organised by D.M. Shand and G.L. Lee under the auspices of the Chamber of Commerce in June 1939 condemned the Malpas water augmentation scheme in its entirety. The meeting felt that the water and hydro-electricity from the Styx and Serpentine Rivers should be investigated. A further public meeting of protest organised by Shand, was held in July and a petition of 260 signatures organised by an Armidale resident was also forwarded to D.H. Drummond.

The town clerk, F.W. Milner informed the public that Armidale ratepayers could not demand a poll on the loan proposal of £51 200 because the application 'was covered by a special provision of the Local Government pertaining to water supply and sewerage schemes'.⁸¹ Because of the extensive criticisms, Ald. W.H. McBean presented a detailed report on the Serpentine Scheme (cost £291 953) and the Bow's Gully scheme (minimum cost £165 788 and maximum cost £195 788) to the council meeting on Monday 3 July 1939.

The Department of Works and Local Government approved the loan proposal of £51 200 for water supply works in July 1939 with repayments to be made over 45 years. Council received the first instalment of £3200 on the loan of £51 000 from the State Superannuation Board in October. Tenders for the Malpas scheme were opened in July and referred to the consultant engineers but tenders recommended by the engineers exceeded the original consultant's estimates by £5452. The tenders were then referred to Department of Works and Local Government in August. W.R. Roper, supervising engineer of the Water and Sewerage Branch of the Department of Public Works visited Armidale in October 1939 at the request of council. Accompanied by the city engineer J.D. Brown, he investigated the pumping scheme on the Gara River and alternative sites for the filtration plant. The report from Mr Roper was received by council in December 1939 and concluded that 'one advantage of having the plant close to the town is that it is better situated in relation to the reticulation system for extensions'.⁸²

The *Armidale Express*, 4 December 1939 described the value of the well at the corner of Beardy and Markham Streets to railway authorities for some years.

⁸⁰ *Armidale Express*, 24 May 1939, p.8.

⁸¹ *Armidale Express*, 28 June 1939, p.4.

⁸² *Armidale Express*, 6 December 1939, p.6.

Council decided to have the supplementary pipe-line laid from the Puddledock reservoir under the direction of its own engineer rather than the consulting engineers. General Construction Pty. Ltd. commenced operations on the pipe line from Puddledock to Armidale in October 1939. Other tender firms involved were James Hardie and Company Pty. Ltd. and Australian Iron and Steel. By December 1939, excavation work on the 12 inch diameter Puddledock pipe line was proceeding but there were some delays in commencing pipe laying owing to the non-supply of special castings. The pipe laying was completed in April 1940 and the *Armidale Express*, 31 July 1940 reported that the new 12 inch main from Puddledock was finished and 'survey work for augmentation was also in hand'.

By January 1940 the water situation in high parts of Armidale such as south and north Armidale was insufficient to provide water for essential services. In an attempt to improve the situation the city engineer J.D. Brown rearranged the zoning system. Next month the use of water for irrigation, crops, gardens or lawns was prohibited at a special meeting of council called to discuss the desperate water situation.

Correspondence between the Australian Wood Stave Pipe Company and council's consultants was forwarded to the Department of Public Works in November 1939. The Department of Works and Local Government advised in January 1940 it had no objection to council entering into an agreement with the Australian Wood Pipe Company to replace pipes damaged by white ants on the Puddledock line with cast iron or other pipes. The company informed council in February it was prepared to enter into an agreement with council on the terms of the agreement lodged with Haskins, Davey and A. Gordon Gutteridge on 28 October 1939. By May 1940 discrepancies had arisen between council and the company over the amount of damage that had taken place to the pipes. Initially the company was only prepared to forward 200 feet of pipe but agreed to send a representative to Armidale to investigate the matter. The Australian Wood Pipe Company informed council in June 1940 it was prepared to forward replacements for the Puddledock pipe line but that 'council take steps to check white ant harbours adjacent to the line'⁸³. Action was taken and the *Armidale Express*, 8 January 1943 reported the 10 inch wood stave pipe was 'replaced by fibrolite and steel about two years ago' because of white ant attack.

The question arose about who was to pay for the replacement pipe. In April 1944 council was informed by the Australian Wood Pipe Co. that 'council's proposal that 10 inch fibrolite piping be purchased by council and charged to the company was not approved.'⁸⁴ Council accepted the company's offer to replace small quantities of existing wooden pipes that were white-anted.

In March 1940 the special committee formed to investigate the Tilbuster water supply recommended the question of augmenting the water supply from this

⁸³ *Armidale Express*, 19 June 1940, p.8.

⁸⁴ *Armidale Express*, 19 April 1944, p.11.

supply be shelved. By May a pumping plant had been installed at the Tilbuster creek and the city engineer was authorised in June to construct a temporary timber dam at the creek. He was also authorised to meet with the Department of Public Works in Sydney and discuss the proposed dam on Tilbuster Creek as well as the site of the service reservoir and filtration works.

Following a visit by J. Roper a departmental engineer, the Department of Works and Local Government recommended in September 1940 that the dam site be located on the Gara River, near the Kempsey road. The Armidale city engineer supported the recommendation. Engineer's reports and recommendations concerning the water augmentation scheme for Armidale from the Gara River were adopted, at the council meeting held on Monday 23 September 1940 and J.D. Brown the city engineer was instructed to begin work on the scheme immediately. The editor of the *Armidale Express*, 25 September commented the Styx scheme was the 'only really worth while scheme' for Armidale 'but the barrier of finance stands in the way'.

Council directed the Department of Railways to reduce its water consumption at the locomotive shed by 50% in September 1940. In order to reduce the Armidale supply to approximately 500 000 gallons per month the department announced its intention to haul '15 000 to 20 000 gallons of water ... daily from Woolbrook.'⁸⁵ On Monday 18 November council announced drastic restrictions: the railway to be disconnected in a fortnight; industrial undertakings to reduce average use by half; all water users outside the municipality to be immediately disconnected and water only to be used for domestic and industrial purposes.

The mayor outlined details of the water supply scheme in his December 1940 annual report presented. He also announced that work on the new 12 inch main would stop when it was within 3000 ft. of the municipal boundary because a more advantageous filter plant site could be located in that locality. That month, water was pumped from the Tilbuster Creek temporary augmentation scheme to Puddledock. The Gara River pipe line survey and design and plans for filtration plant were also completed and forwarded to the Department of Public Works early in January 1941. In April Mayor W.H. McBean received advice from department that the Armidale supply filtration scheme had been approved and tenders were to be called. Council accepted tenders for the supply of filter sand, the supply and erection of control valves and filter control systems in May. The city engineer, J.D. Brown advised council in August 1941 that excavation work was underway and the pouring of the foundation concrete was to commence shortly.

The Gara Dam was first mooted in 1921 but it was not until 1940 that authority was given for construction of the dam. A survey was completed in 1941 for the construction of a third scheme at Gara River. Subject to approval from the Department of Public Works, council accepted the tender of N. Davis for £5092

⁸⁵ *Armidale Express* 16 October 1940, p.8.

5s for construction of a service reservoir for the Gara Scheme. By December 1941, the 12 inch pipe line had been laid from Puddledock and the site of the service reservoir, the filtration plant was two-thirds completed, a start made on the service reservoir, the pipe line between Armidale and the Gara River surveyed and contour plans drawn of the new dam on the Gara River.

In August 1942, Mayor Ald. W.H. McBean reported the Department of Local Government submitted a report on 'the cost of the water supply augmentation scheme and the filtration plant'.⁸⁶ The Government was prepared to contribute £20 000 towards the total cost of £95 000. The scheme involved the construction of a concrete weir at the Gara; a rising main to pump the water from the Gara to a filtration plant at North Hill; a storage reservoir at the filtration plant and renewal of the Puddledock pipe line. The dam at the Gara was to have a catchment area of 150 square miles. The filtration plant was to be housed in a modern building of reinforced concrete, 90 feet by 70 feet whilst the storage reservoir was to have a height of 25 feet 6 inches and a diameter of 104 feet, constructed in reinforced concrete.

Shortages of equipment and material arose during the World War 11. Consequently the augmenation scheme was delayed but it was hoped to be in full supply early in 1944.

Residents in South Armidale were informed in February 1942 that there were no funds to improve their water supply. Improvements were expected when the Gara augmentation scheme was completed.

In August 1942 the Department of Local Government informed council that the cost of the water supply scheme and the filtration plant would be £95 600. The government was to contribute £20 000 with council to finance the balance. By January 1943 tenders had been called by council 'for the supply and delivery of cast iron cement lined pipes and specials'.⁸⁷ Tenders were also to be called immediately for excavation, laying and jointings of the pipes and specials.

The Hon. D.H. Drummond MLA officially opened the filtered water supply for Armidale on Saturday 1 February 1943. The filtration plant costing £16 000 was designed by the Public Works Department and in its final stages supervised by Mr L. Brown, in place of the city engineer, who was absent on war duty. At that stage the plant filtered one million gallons a day and the main reservoir tank at Ben Venue held 1.25 million gallons. General Construction Pty. Ltd. completed the plant and Norman Davis, a local contractor the storage reservoir. Apart from the service reservoir at Ben Venue, two reservoirs on South Hill held 400 000 and 80 000 gallons respectively. Problems emerged and aldermen expressed concern about the quality of the water provided by the filtration system. In reply to the concerns, the health surveyor L. Brown reported: 'We are operating under great

⁸⁶ *Armidale Express*, 26 August 1942, p.3.

⁸⁷ *Armidale Express*, 8 January 1943, p.5.

difficulty with a manually controlled plant that had provision for mechanical control. The plant would be mechanically controlled after the war'.⁸⁸ By June 1947 a chemical storage shed was being erected at the water filtration plant.

By January 1943 about two and three-quarter miles of mains had been laid outside the municipality to supply the University College, the New England Girls School and the sanitary depot. However council informed the West Armidale Progress Association in February, that water could not be supplied to new water consumers outside the municipality because of limitations on reticulation. At that stage water was supplied to the New England Girl's School and the new brickyards at West Armidale but further water was not to be made available until completion of the Gara River augmentation scheme. Council lifted these bans on water connections outside the city boundary in June 1947.

In May 1943 the water and sewerage committee recommended that a copy of the acting engineer's plan for alterations including the direct connection of North and South Hill service reservoirs by a 10 in. main, and the temporary utilisation of a few chains of the Gara line pipes be forwarded to the Department of Public Works for its information and approval.

A number of leaks appeared in the Dumaresq and Puddledock lines by November 1943 which influenced the normal flow of water to South Armidale taps. Thus council approved the spending of £6000 'on cement lining of about eight miles of the Dumaresq water main'⁸⁹ provided suitable reports were received. In March 1944 the Metropolitan Water and Sewerage Board offered to provide advice on cement lining of the Dumaresq main and an officer arrived in Armidale in April to prepare a report. Three months later, council decided to take no action on cement lining of the steel riveted pipes as '10 inch cast iron pipes are now available ... to replace faulty sections'.⁹⁰

In September 1946 council decided that the existing length of 10 inch wood pipe for the northern reservoir and Ben Venue Public School be replaced as early as possible. Action was also taken to order the necessary piping from the Australian Iron and Steel Company at a cost of £560.

In February 1946, council asked the Department of Public Works to expedite the furnishing of plans relating to Gara Dam construction pumping plant. The Gara River pipe line was completed by June except for the Commissioner Waters crossing and a portion of pipe line near the Gara River where pipes were in short supply. Trial holes for the dam foundations were sunk in August. In his 1946 annual report, Mayor D.D.H. Fayle stated the Gara line was now complete but 'the Public Works Department is holding up the project in the way of plans for

⁸⁸ *Armidale Express*, 26 January 1944, p.6.

⁸⁹ *Armidale Express*, 15 December 1943, p.5.

⁹⁰ *Armidale Express*, 12 July 1944, p.3.

dam, pumps and motor'.⁹¹ Based on the Department of Public Works report, council accepted a tender of £2 077 in April 1947 for the supply of a pumping plant for the Gara River augmentation scheme. In June council received news of a £30 000 loan from the A.M.P. Society for the scheme.

The initial construction of a storage dam and pumping plant at the Gara River was undertaken 'at a slow rate because of the impossibility of procuring the necessary pumping plant'⁹² and heavy rains. A float trunnion ordered in 1947 did not arrive until December 1953. By June 1947 all buildings necessary for construction work had been completed including structures such as a cement shed and blacksmith's shop. The dam was to be a circular arch, twenty feet high with a storage capacity of 60 000 000 gallons. Catchment of the dam was to be 150 square miles; this compared with the nine square miles for Puddledock Dam and seven square miles for Dumaresq Dam.

By September 1948 the Gara River construction was proceeding with the clearing of timber from the storage area, the erection of fences, building of filling house and proceeding of concrete material in hand. Because of increased costs since the scheme was first adopted in 1942, council had decided to raise a new loan to finance the completion of the Gara augmentation scheme in September 1946. Council entered into an agreement on 17 November 1942 with the Department of Local Government 'to meet all expenditure in excess of the Government's pegged contribution of £20,000'.⁹³ However the estimated cost was now £25 000 to complete the Gara Water supply augmentation.

Armidale Golf Club advised council in September 1948 that it wanted 'to establish grass greens and sought advice as to the availability of an adequate water supply'.⁹⁴

By December 1948 foundation preparation had commenced for a concrete wall construction on the right bank at the Gara River Dam.

The *Armidale Express*, 21 February 1945 reported the caretaker's residence at the Dumaresq reservoir was in a deplorable condition because of an attack by white ants. An application was made for permission in June 1945 to erect a caretaker's building at the waterworks and by May 1946 the cottage was almost completed. The caretaker, Charles Handebo aged 49 years was tragically killed in December whilst working with a slide and horse near his home at Dumaresq. In August 1948 the caretaker's cottage was uninhabited and council took action to dispose of it. Tenders for removal and re-erection of the timber and fibro cottage to a site in Allingham Street were called in February 1949. Council agreed in July to sell the

⁹¹ *Armidale Express*, 13 December 1946, p.5.

⁹² *Armidale Express*, 18 June 1947, p.8.

⁹³ *Armidale Express*, 2 October 1946, p.6.

⁹⁴ *Armidale Express*, 15 September 1948, p.13.

building to the New England County Council to be used as a caretaker's cottage at the Oakey River. In September 1949, Council decided to re-erect a waterworks cottage at the filtration plant in Armidale. In January 1950 council called tenders 'for the purchase and removal of a new house at Dumaresq water-works'.⁹⁵

In February 1950 council took action to complete the 35 chains of fencing at the Dumaresq reservoir whilst J.H. Dawson of 'The Flags' was asked to complete his 35 chains.

Ald. T. Monckton called upon council to develop the Malpas water scheme in November 1951. At the time, engineer J.D. Brown agreed that 'service reservoirs were need at South Armidale, North Armidale and East Armidale'.⁹⁶ In January 1952 Armidale was zoned for water restrictions. Difficulties at the time did not involve the amount of water stored because at the time there were 114 million gallons in the Puddledock Dam and 66 million gallons in Dumaresq but problems arose because of 'inadequate reticulation and town reservoir storage'.⁹⁷ Council decided to take action for an adequate water supply and approached the Department of Public Works for assistance. In June council received recommendations from the department on pumping machinery, on pumps for the university and a boosting system for South Armidale. The tender of McKinley, Fletcher Pty. Ltd was accepted in March 1955 for the supply and delivery of a water supply booster pump at the University as recommended by the Department of Public Works.

By February 1952 all council men were working at the Gara. 'The city engineer reported: De-watering plant at the dam site has been re-erected. Cleaning of the river bed is in progress'.⁹⁸ By December, work on the Gara River project was suspended. Although power was on the site, pipe lines laid, pumping machines installed in the pump house, other buildings constructed and a start made on the dam wall. Floods during the year had interrupted the works and the work was thus suspended.

Council determined a policy in April 1953 to provide no further extensions of water and sewerage to land outside the city boundary. Following a request by the Bellevue Progress Association for a water supply, council referred the matter to the Dumaresq Shire Council in June 1953. The shire determined it could do nothing at present.

Council decided in June 1953 to complete the Gara Water supply augmentation scheme as soon as possible. Once the city engineer, J.D. Brown reported in July that plans and specifications for completion of the Gara River Dam were

⁹⁵ *Armidale Express*, 1 February 1950, p.12.

⁹⁶ *Armidale Express*, 21 November 1951, p.1.

⁹⁷ *Armidale Express*, 30 January 1952, p.2.

⁹⁸ *Armidale Express*, 13 February 1952, p.13.

complete, Council took action to call tenders. In January 1954, Thiess Bros announced it was prepared to commence construction of the Gara River Dam once the Department of Public Works finally accepted the firm's tender of £15 969. By that stage, the Gara scheme which commenced in 1947, had 'cost about £40,000 ... from an original estimate of £96,500'.⁹⁹ Despite difficulties in raising a loan, Thiess Bros agreed to commence construction of the Gara Dam 'provided Council paid 5 per cent on money the Firm outlaid before Council could arrange regular payments'.¹⁰⁰ At the time council proposed to raise a loan of £10 000 to meet the contract price.

City engineer J.D. Brown spoke of the need for £100 000 to bring the water supply to standard in September 1954. 'These works included the laying of bigger mains, local service reservoirs, replacement of white ant riddled wooden pipes, and pressure boosting plants'.¹⁰¹ The editor of the *Armidale Express*, 20 September 1954 supported the stand and commented, 'the community would warmly support any move by the Council to have the possibilities of the Malpas and the Styx investigated'.

The Gara Dam was completed in 1954 with a capacity of 76 million gallons. The concrete wall was 22 feet high.

The imposing of water restrictions in January 1955 at a time when the University of New England, Teacher's College and other educational institutions were still closed led to an expression of concern by the *Armidale Express*. The newspaper commented, 'it is absolutely imperative that the Council take immediate action to solve the problem'.¹⁰² In March council moved for an improved water supply to include: improvements to reticulation mains; investigation of erection of a 100 000 to 200 000 gallon storage reservoir on Soudan Hill and a large storage reservoir of 1.25 million gallons at North Armidale and to get the Public Works Department to approve the site of dam at Malpas.

Council moved to investigate the cost of supplying filtered water to Armidale in April 1955.

Two officers of the Department of Public Works Department investigated potential water supplies in the Armidale district in December 1955 and January 1956. Accompanied by the town clerk, the mayor, the city engineer and a representative of the Dumaresq Shire Council, they visited the Gara River to investigate a new water supply dam at Malpas. At this stage an earth wall was considered in preference to a concrete one because of the cost involved.

⁹⁹ *Armidale Express*, 27 January 1954, p.3.

¹⁰⁰ *Armidale Express*, 10 February 1954, p.8.

¹⁰¹ *Armidale Express*, 17 September 1954, p.2.

¹⁰² *Armidale Express*, 7 January 1955, p.8.

In his 1955 annual report, Mayor Hughes commented: 'Council must ... proceed expeditiously with erection of further reservoirs on Soudan Hill and in North Armidale'.¹⁰³ Council announced its intention in January 1956 to erect a 100 000 gallon reservoir on Soudan Hill at a cost of approximately £10 000. The erection of the reservoir to improve the pressure of the water supply on South Hill commenced in May 1957. That month, council also announced it was to sell land adjacent to the South Hill reservoir and use the proceeds to purchase more suitable land for the storage of heavy materials.

Two officers of the Department of Public Works investigated potential water supplies in the Armidale district in January 1957. They considered the possibility of enlarging the Gara Dam and also investigated the Malpas scheme in the headwaters of the Gara River. The *Armidale Express*, 1 February 1957 reported the scheme was 'Estimated to cost more than half a million pounds' and was 'discarded in view of the high expenditure involved'. In November Ald. Ken Jones presented a detailed investigation of the records and flow of the Serpentine River prepared by the New England Council. Council determined to consider the report in committee and was also prepared to present it to the officers of the Department of Public Works.

As part of the water augmentation scheme, council called on residents in December 1957 to locate and inform council of wells within and in the immediate vicinity of Armidale. Armidale's water supply was again critical in January 1958 and the *Armidale Express*, 3 January 1958 commented: 'there is no immediate prospect of an easing of the severe restrictions imposed to conserve the supply for urgent uses'. A comprehensive report on water supply proposals was tabled by the city engineer P.G. Agnew in February 1958. A further report on six major schemes was also forwarded from the Department of Public Works. The schemes were: Duval Creek (upper site); pumped storage near Gara River Dam; Duval Creek (lower site); Malpas Dam and gravitation main; Malpas Dam and pumps at the Gara River Dam and the Serpentine River. The estimated cost of the two major schemes were: Malpas Dam £969 200 and Serpentine River £998 610.

Council adopted in principle the Malpas water supply scheme in May 1958 estimated to cost just under £1 million. In reply to public concern, council took action in July to also survey the Serpentine River as a possible water source. The consulting engineers Z.J. Buzo and Associates tabled a report on this source in December and council forwarded the report to the Department of Public Works for their comment.

The Minister for Public Works, Mr McGrath informed council in September 1958 there would be no grants for an Armidale water supply. He again rejected the request in March 1959. Despite the opposition of the Mayor Ald. P.G. Love and Ald. R.L. Campbell, council took action in May to have the Serpentine scheme investigated to the same extent as the Malpas scheme. In June council appealed

¹⁰³ *Armidale Express*, 14 December 1955, p.14.

directly to the Commonwealth Government for funds on the grounds that the critical water supply in Armidale was a result of the rapid growth of the university.

Work began in March 1960 on a six months project, costing £30 000 to relay the Dumaresq pipe line from the Dumaresq Dam to the filtration plant. In May 1960 the Department of Public Works recommended the Malpas Scheme in preference to the Serpentine. Debate between the supporters of each scheme dominated the press for the next few months. Council sought assistance from the Department of Local Government in August to discuss financial aspects of a major water supply. Following financial submissions, council rejected any proposal for the Malpas scheme without government subsidy in September

The governor approved a £12 000 loan for water supply works in October 1960. At the same time, the city engineer P.G. Agnew announced plans for additional storage water tanks on South and North Hill. The engineer presented a further report to council in November 1960 and referred to the urgent need for major augmentation. He reported the 10 inch woodstave main from Puddledock was finally abandoned in 1958; a 12 inch cast iron main carried the main flow from Puddledock and a booster pump was installed on this main during 1959. Replacement of the original gravitation main from Dumaresq commenced in March and was completed in January 1961. Engineer Agnew announced in November that council could not design the water towers for South and North because of inadequate engineering staff.

Early in 1961, the Chancellor of the University of New England, Dr. P.A. Wright warned a meeting of Armidale representatives and the Minister for Public Works that development of the University of New England would be restricted if a water supply was not assured. In May 1961 council decided to adopt the Malpas water scheme. A public seminar was held in Armidale on 6 July, organised by the Community Development Committee and the Department of Adult Education of the university, to discuss the critical water supply problem. Over 100 attended the seminar and speakers included the city engineer, Professor J.P. Belshaw, Professor A.F. O'Farrell and Associate Professor R. Roe.

In a statement to the Legislative Assembly on 26 October 1961, Davis Hughes outlined the critical situation because of 'a breakdown in the water main from the Gara Weir'.¹⁰⁴ In an attempt to improve Armidale's water supply, a large booster pump was installed recently on the Department of Public Work's advice so that 40 000 gallons of water an hour could be pumped to the city. Once the booser pump was brought into use, the joints in the pipeline were forced open and council was forced into a costly patching process. Aware that the Minister of Public Works would arrive in Armidale on 17 November 1961, he appealed to the minister to consult with the Premier, Minister for Local Government and Minister for Highways to solve the problem.

¹⁰⁴ Armidale City Council File 57B. Subject: Water Supply Dams and Storage Reservoirs W1.

The Minister for Public Works came to Armidale on 17 November 1961 to discuss the water supply but the minister informed council in January 1962 'it will be many years before Armidale will get a subsidy for the £500,000 Malpas Dam Scheme.'¹⁰⁵ Consequently council decided to investigate possible minor schemes for water storage but the editor of the *Armidale Express*, 19 January 1962 warned: 'Bitter experience has shown that neither Dumaresq or Puddledock have any real capacity to supply water for "over-flow" dams'.

In August 1960 the University of New England lent £3500 to council to finance improvements to the university water supply. In October 1961 council agreed to carry out £22 000 worth of work at the university's cost.

In March 1962 council took steps to call a conference with the Premier, the Minister for Local Government and the Minister for Public Works 'to discuss the procedure now to be worked out' in the council's 'struggle for a 50 per cent subsidy for the £1 million Malpas water supply scheme'.¹⁰⁶ At that stage, the Armidale scheme had been admitted in August 1958 but was 36th in the list of public works priority.

City engineer P.G. Agnew reported to council in May 1963 on the need for extensions to the filtration plant, a 100 000 gallon storage tank on North Hill and a new large main to the university in May 1963. The Ben Venue Progress Association wrote to Council in May 1963 expressing the need for a water supply in the higher parts of Armidale. In reply, council stated the question of improving the water supply is being considered and a report is being prepared for an additional storage in Armidale North at an estimated cost of £44 000.¹⁰⁷ Negotiations to buy land at North Armidale for the reservoir commenced in November 1963. Stage 1 was to be the construction of the £2000 reservoir and the laying of pipes to cost £19 580. Stage 2 included the construction of a main to the university at a cost of £11 000.

The drought of 1964 to 1965 meant that action was taken to augment council's water supply. Permission was sought of the Premier Mr. Renshaw in January 1965 to commence preliminary work on a major water supply for Armidale. The water supply showed marked improvement when the 100 000 gallon reservoir costing £28 000 near Link Road came into operation in January. In May Ian Sinclair M.P. and Davis Hughes M.L.A. agreed to meet council aldermen to discuss finances for a major water supply. Continued drought in the district led to a decision that month to install crest gates at the Gara dam to lift Armidale's water storage by 10 per cent. In September council applied for a £15,000 loan for the gates.

¹⁰⁵ *Armidale Express*, 17 January 1962, p.14.

¹⁰⁶ *Armidale Express*, 11 March 1962, p.4.

¹⁰⁷ Armidale City Council Files, 57B. Subject: Water Supply Dams and Storage Reservoirs W1.

Council decided in October 1963 to confer with the New England County Council concerning co-operation in the provision of a major water supply scheme. But no action was taken and it was not until 23 June 1965 that representatives met 'to examine County Council proposals for water diversion schemes in the Serpentine River area'.¹⁰⁸ At the meeting, representatives were told the two councils could draw water from a diversion of the Barwick and Bullock Creeks and the Serpentine River for Armidale's water supply and the Oaky River hydro station. The aldermen were now confronted by three schemes: the Malpas, Serpentine and Bullock Creek dams.

A four member council deputation met the Minister for Works Davis Hughes in Sydney on Wednesday 16 June. The deputation was told 'the Government would give Council a subsidy of £700 000 for a major water scheme from 1967'.¹⁰⁹ Hughes urged council to make decisions to ensure completion of the scheme by 1971. To help the decision Town Clerk Browne provided estimates for construction of the two proposals based on material prepared by the city engineer and the Public Works Department. The Malpas scheme would cost £1 428 469 whilst the Serpentine scheme would cost £1 986 000 and Bullock Creek £2 153 000.

At a council meeting held on Friday 25 June 1965, the decision was made to 'ask the Snowy Mountains Authority to send an expert to examine the schemes, and give an opinion to Council'.¹¹⁰ Difficulties arose because this authority was a Commonwealth Department and the water scheme was a state project. Thus the authority was not prepared to provide an engineer unless there was a formal request from the Department of Public Works; a request the department was not prepared to give.

The government was prepared to provide an immediate £30 000 to cover half the cost of survey, design and planning but application had to be made before the end of August. At the council meeting on Monday 26 July 1965 council decided on the Malpas scheme. Once the decision was made, council moved quickly to advertise for the appointment of civil engineers to plan construction of the dam and pipeline. Application was made to the government for the subsidy of £30 000 and for permission to raise up to a further £30 000 for the initial costs for design, survey and planning.

In June 1965 council announced water mains extension, mainly in South Armidale to cost £3000.

¹⁰⁸ *Armidale Express*, 9 June 1965, p.6.

¹⁰⁹ *Armidale Express*, 18 June 1965, p.1.

¹¹⁰ *Armidale Express*, 28 June 1965, p.2.

Davis Hughes advised council in August 1965 'the Public Works Department will be directly responsible for expenditure, and any variations in costs, of the Malpas Scheme'.¹¹¹ In the following month council decided to apply for a £15 000 loan for crest gates on the Malpas dam to raise the dam's capacity by 34 million gallons to 110 million gallons. An access road was built to the site in November and drilling to investigate the foundations was carried out in early in 1966.

A scheme to ensure the water supply reticulation for the next twenty years was outlined to council in January 1966. A Sydney firm of consulting engineers suggested the work will be carried out in four stages. The State Government approved the inclusion of additional works in the augmentation scheme in July 'increasing the estimated cost of the approved subsidised program from \$2.97 million to \$3.29 million'.¹¹² The major additional work was the construction of a 116 million gallon reservoir and a pumping station to cost £244 000.

Council was asked by the Public Works Department to purchase four houses for supervisory staff on the works in August 1966. Six houses were eventually provided by council and the department. The Minister for Public Works, Davis Hughes announced in December that the Sydney contractor D.C. Hamilton was awarded the tender for the initial works for an access road, an access bridge, an outlet works tunnel and a diversion tunnel. Work on the Malpas Dam began in 1967 and was funded jointly by the Department of Public Works and the Armidale City Council. 'The coffer dam was commenced in May, 1967 and the main wall in September'.¹¹³

The Malpas Dam was built in a deep valley on the Gara River some five kilometres to the south east of Guyra and about twenty kilometres north east of Armidale. It was originally surveyed in 1927 and detailed investigations were completed in 1956. But it was not until 1966 that a 50% government grant was made available. Work began in September 1967 on construction of the main dam wall. Other features of the scheme involved the building a twenty two mile pipe line to Armidale, trebling of the capacity of the filtration plant and installation of three high level reservoirs in the city. The water supply augmentation scheme was designed for completion in two stages. Stage one provided storage of 2870 million gallons to serve a population of 40 000. The second stage involved the addition of flood gates to the spillway to store 5660 million gallons for a population of 70 000.

Construction of the dam was completed in October 1968 at an estimated cost of \$1.27 million. Other costs included provision of the pipeline (\$1.62 million) and filtration and distribution (\$0.83 million). The dam was of earth and rock fill construction some 430 metres in length and thirty metres in height with an initial

¹¹¹ *Armidale Express*, 25 August 1965, p.2.

¹¹² *Armidale Express*, 18 July 1966, p.1.

¹¹³ Council of the City of Armidale, Entry in 1970 A.R. Bluett Memorial Award.

capacity of 2 870 million gallons with the provision to raise the capacity at a later date to 5 660 million gallons by the provision of flood gates in the spillway. The dam was officially opened by the Minister for Public Works and Member for Armidale, Davis Hughes on Saturday 9 November 1968.

By October 1968 work had commenced on the laying of a 12 inch main by Humes Ltd. from the Garibaldi Street reservoir to the new reservoir to be constructed in Dumaresq Shire near the orphanage. At the stage of the dam's opening, work had started on construction of the pipeline to Armidale; increasing capacity of the filtration plant and four high level reservoirs in the city.

By January 1969 a 500 000 gallon water reservoir on South Hill off Galloway Street was under construction. The floor of the new reservoir was complete and works on the walls was underway. At that stage, there were two other reservoirs on South Hill: a 400 000 gallon reservoir built in 1895 and a disused steel reservoir. A pump house was also being built at South Hill next to the reservoirs to lift water to Soudan Hill. On North Hill a 500 000 gallon reservoir was to be completed about half a mile from the North Hill reservoirs. Council also intended to build a million gallon reservoir off Link Road next to the present reservoir. It was in March 1964 that the estate of A.J. Fittler offered to give about two acres of land on Eldervilla on the Link Road provided water is connected for three nearby properties. The *Armidale Express*, 25 March 1964 also announced 'the reservoir, which will supply high areas of North Armidale, will cost £28,000'. In January 1965 the city engineer K.O. gentle reported that 'water pressures in North Armidale have been increased ... since the new 1000,000-gallon reservoir near Link Road came into operation'.¹¹⁴

Tenders for the extension of the filtration plant were called in April 1969. Contracts for over a quarter of a million dollars were awarded by the Department of Public Works in July to R.J. Bennett Pty. Ltd. for the filtration plant and to Monier Preload Industries Pty Ltd. for construction of the service reservoir. By June 1970 the two settling tanks at the filtration plant were nearing completion and it was expected to finish on 31 October. 'As part of the Malpas Project a new filtration plant with a capacity of 170,000 per hour was constructed to augment the previously existing plant of 60,000 per hour. In this new filtration plant, water is purified by filtration and chlorination'.¹¹⁵ The new filtration plant was unveiled on Saturday 12 December 1970 by the Minister for Public Works, Hon. Davis Hughes MLA and the Mayor John W. Failes.

The first stage of Malpas Dam was completed by January 1971 at an estimated cost of \$3.9 million. The dam cost \$1.27 million; the pipeline \$1.62 million and filtration and distribution \$0.83 million. A boating regatta was held to mark the opening of the Malpas Dam and 'this led many Armidale residents to anticipate

¹¹⁴ *Armidale Express*, 6 January 1965, p.3.

¹¹⁵ *New England Readings*, p.284.

that it would be used for aquatic recreation'.¹¹⁶ Following presentation of the report 'A Framework for the Multiple Use of Municipal Water Supply Storage Areas' council decided in September 1970 to ban sports with body contact such as swimming. Professor John Burton of the Department of Natural Resources at the University of New England was requested by council in 1972 to investigate the possible use of the reservoir for recreational purposes, particularly water sports. In January 1975 Professor J. Burton released a report in which he said council should establish a planning and research program aimed at the overall management of the Malpas reservoir and catchment.

The report presented to council proposed a 'progressive programme of recreational development' under controlled conditions. A major local controversy erupted and council rejected the proposal but the State Pollution and the Health Commission intervened. The Commission offered Burton a research grant to investigate the recreational use of the reservoir and despite some opposition, council granted Professor Burton permission to carry out a case study in October 1976. A combination of the interim management plan published in 1976 together with the 1978 guidelines prepared by the Health Commission resulted in a final adaption plan for the recreational use of the reservoir.

By November 1977 a Malpas Dam Recreation Committee had been formed including Mayor Hewitt, Aldermen Burton, Cainero, Harvey and the health and building surveyor with Professor J. Burton and J. Nightingale representing the New England Sailing Club. At the 30 November 1977 meeting, consideration was given to proposals for fishing, canoeing and rowing. The Armidale Rotary Club was also investigating a scheme for the provision of a picnic area with trees and barbecue area with council to provide toilets and parking area.¹¹⁷

In October 1968 the Armidale Tourist Bureau Committee discussed the possible uses of the Dumaresq Dam when the Malpas Dam came into use. At that stage considered possible uses included trout fishing, swimming, row boating, canoeing and a wildlife park. In December 1971 council announced plans to develop the dam area as a recreation reserve. They immediately allocated \$500 to develop an entrance grid, picnic area and fencing of both ends of the dam wall. The Rotary Club offered to undertake most of the construction work. Council also agreed to allocate \$1200 for next year's budget for vehicle access to the water's edge, provision of a beach area, toilet facilities and garbage receptacle.

In September 1969 the Armidale Police Citizen's Club was considering the formation of a rowing club and applied to council for use of the Dumaresq Dam. Council refused the application 'as it still forms part of Armidale's Water Supply

¹¹⁶ J.R. Burton, Recreational Development of Malpas Reservoir: an Operational Management Plan, Malpas Dam Recreation Committee, Armidale City Council, September 1981, p.4.

¹¹⁷ Armidale City Council Files 104A. Malpas Dam- Use of the Dam for Water Sports, W 1/7, 1978-1983.

Scheme'.¹¹⁸ The city council and its recreation and playing fields advisory committee favoured the use of the dam for recreation by December 1970. In a report presented to council that month, the committee recommended the development of sandy beaches, swimming and paddling areas as well as a car park, picnic and barbecue area. The Chamber of Commerce also supported development of the dam as a recreation centre. In March 1972 the Dumaresq Dam became a recreation area as it was no longer a source of the city's water supply. The University of New England presented a proposal for the leasing of part of council's waterworks reserve at Dumaresq Dam from 1974 to 1975.¹¹⁹

By September 1973 a safety barrier fencing had been erected at each end of the wall; a floating safety barrier warned boats of the wall; basic boat launching facilities and approach track were completed; construction of a beach; installation of garbage receptacles, installation of barbecue facilities and provision of picnic tables. In order to match the grant approved by the Maritime Services Board, \$600 was required in 1975 to provide council's share of the cost of a boat launching ramp. Council received a comprehensive report on maintenance and development of the Dam in May 1976. The Department of Water Resources reported in April 1977 that the cause of erosion upstream of the Dumaresq Dam 'is the remains of a concrete structure on the right bank'.¹²⁰ The department recommended the demolition of the concrete and protection of the left bank. In September council called tenders for construction of a picnic shelter. Site preparation was undertaken by council staff; the tender was awarded to P.C. Pitman for \$3749 and the shelter completed by June 1978. Log barriers were completed by the Rotary Club around the swimming area by February 1979; a new steel barbecue was erected by August with a water tank to be connected to the amenities block. In 1981 council completed improvements at the reservoir and reserve including the completion of a log barrier fence around the central recreation area and extension of the parking areas and boat rigging area. Funds were provided by a 50% State Government vote-to-assist grant. Playground equipment was also added to the park.

The 1984 council annual report indicated the difficulties encountered by the water supply system. There was reduced supply pressure locally at high elevations in several locations. Difficulties were also emerging in maintaining water quality in an environment of recurring algal blooms. The 1986 annual report referred to the augmentation of pumping capacity in the city and the design of the augmentation of the water treatment plant to 41 megalitres per day capacity. The 1988 Bluett Award report stated that the council was the 'first authority to design and specify a powdered activated carbon system for removal of algal tastes,

118 Armidale City Council File 57B. Subject: Water Supply Dams and Storage Reservoirs. W1.

119 Armidale City Council File 80E. Dumaresq Dam 1972-1974, W 1/2/4.

120 N.S.W. Department of Water Resources, Armidale Council Dumaresq Creek Erosion Control, File no 1449212.

odours and toxins'.¹²¹ At the time, council was working with the University of New England to research the control of algae.

The \$10 million Water and Sewerage Augmentation Scheme which commenced in 1983 was completed in 1988. The project was funded by the Department of Public Works (50%) and City Council (50%) at a total cost of \$6.375 million for the water supply and \$2.595 for the sewerage.¹²² Wal. Murray, Deputy Premier, Minister for State Development and Minister for Public Works officially opened the Armidale Water scheme on Saturday 29 April 1989. It emanated from strategy studies commissioned by the council to address deficiencies in water supply services and delivery capacities within the reticulation system.

¹²¹ Armidale City Council, 1988 Bluett Award Report.

¹²² Ibid.

Sewerage

In contrast to demands for an adequate water supply, the same demand did not arise for the provision of a sewerage system. As with other country councils, Armidale arranged for the collection of night soils and disposal by contractors.

In April 1882 council voted £40 for purchase of a night cart. Concerned at the presence of typhoid fever, scarlet fever and diphtheria in Armidale, the editor of the *Armidale Express*, 26 May 1882 commented: 'The origin of nearly all these maladies is ... the absence of any system of drainage, and the want of Municipal control in the matter of removal of night-soil. A month later the *Armidale Express* approved of the possible action by the inspector of nuisances in June to compel residents to keep their premises in a clean condition. The correspondent commented 'the town will never be really wholesome until cesspits are abolished within its boundaries, but the inspector may accomplish a great deal by seeing that these pits are as little offensive as possible.'¹²³

In October 1882 council set aside £20 for construction of a new house for the water cart and night cart. Council also moved that a sum of 5s per night was to be charged for use of the night cart and all night soil be deposited on the town common north of the city, on a site to be selected by council.¹²⁴ That December, council accepted a recommendation from the inspector of nuisances that applications be called for the night cart fixing charges at £2 for private closets and £5 for public houses.¹²⁵ Two weeks later, council agreed to call applications from parties willing to undertake entire management of the night cart. T. Kohne's application for removing night soil was accepted by council in January 1883. In August council agreed to the application by Frederick Gruber to pay 2s 6d for the use of the night cart and to remove night soil at 30s per cubic yard.

The *Armidale Express*, 5 October 1883 drew attention to the fact that 'frequently of late years we have called attention to the insanitary condition of Armidale'. The newspaper urged council to take necessary action to have the Nuisances Prevention Act extended to the municipality. The by-laws of the act were extended to the borough on 1 July 1886.

An application by C. Heap for use of the night cart was granted for 2s 6d per night. A month later aldermen discussed complaints about the possible overcharging of residents. It was resolved that ratepayers could take the cart themselves for 2s per night.

Aldermen Brown and Apps moved in July 1887 that dry earth closets be used instead of cesspits throughout the municipality because they would be more

¹²³ *Armidale Express*, 23 June 1882, p.4.

¹²⁴ Council minutes, 3 October 1882.

¹²⁵ Council minutes, 5 December 1882.

conducive to public health. The motion was withdrawn but in view of the new by-laws where council could prosecute for the creation of illegal water closets. It was not until February 1892 following the expression of resident's concern, that the council meeting altered the by-laws so that the further use of cesspits was prohibited and the dry earth closet system was to be adopted throughout the municipality.

A letter from W. Palmer concerning night soil was received in December 1887 but council advised it had no jurisdiction outside the municipality. Tenders were called in December for the use of the night cart at 2s 6d per night with the applicant to state charges to remove nightsoil by the cubic yard. No tenders were accepted for nightsoil and fresh tenders were called, doing away with the necessity of sinking holes for 'depositing the night soil in'.¹²⁶ Two weeks later, George Clutterbuck Jnr.'s tender for removing night soil at 13s 6d per cubic yard was accepted. At the same meeting, concern was expressed about Clutterbuck not cleaning out some closets and his insubordination to the inspector of nuisances. Then in September, further trouble arose with the night cart not being paid for by Clutterbuck. Council decided to provide a padlock and key with the inspector of nuisances to have control.

A Mrs Horden complained about night soil being deposited near her residence and 'causing a great nuisance'¹²⁷ and the improvement committee was instructed to select a suitable site for the depositing of night soil. In May 1889 Clutterbuck complained about the inspector of nuisances letting the night cart out and thus preventing him from using it. Council requested that he pay his licence before hearing his case. In July a night-man's licence was granted to C. Heap but only for emptying dry-earth closets. The inspector of nuisances was instructed in August to see about the removal of night soil and filth allowed to flow into the gutters.

Taylor and Mason's tender for a night cart was accepted in January 1890 with the decision taken that no other 'night men' tenders be accepted except C. Heap's for dry earth closets. In February 1891, council decided to dispense with the position of sanitary inspector and the services of Frank Schaupp and applications be invited for persons willing to carry out whole duties at £75 per year. At the same time, Ald Lonsdale moved unsuccessfully 'that the Council write to the medical men of Armidale, asking them if they will be good enough to act as a board of advice, with regard to the sanitary conditions of the Borough'.¹²⁸

Borough engineer J.T. French was elected as sanitary inspector and inspector of nuisances in March 1891 to replace Mr Rutter and Frank Schaupp. Because of the deplorable sanitary state of the town, there was an attempt to appoint a sub

¹²⁶ Council minutes, 10 January 1888.

¹²⁷ Council minutes, 25 March 1889.

¹²⁸ *Armidale Express*, 27 February 1891, p.3.

committee consisting of Mayor Drew and Aldermen McKinlay and Meallin to assist French in April 1891. The motion was lost and French resigned as sanitary inspector in June and W. Stimson was appointed as inspector of nuisances in July.

The problem of nightsoil again arose in October 1891 with the inspector of nuisances wanting to sue various people for illegal dumping. He stated: 'Complaints are made by people who live just beyond the town boundary in Marsh-street to the effect that night soil is deposited close to their residence'.¹²⁹ He was empowered to select a site with all nightsoil to be deposited there. An attempt by Ald. Butler to have the dry system of pits introduced to replace cesspits in Armidale was defeated because aldermen felt that an adequate supply of water was required.

Again in January 1892 the inspector of nuisances 'reported that night soil was not being properly disposed of, and that the contractors complained that C. Heap had emptied cess-pits'.¹³⁰ The inspector was authorised to cancel any permission to deposit night soil on private property unless it was properly trenched and action was taken to separate tenders for emptying cess-pits and earth closets. In February the mayor suggested council employ a person to remove the night soil and collect the money from ratepayers. In March there was an attempt by the mayor to authorise the inspector to collect all amounts for the removal of night soil within the borough and deduct 19% from expenses in connection with this. The motion was amended so the clause relating to the clearing of cesspits be not altered until the by-laws were revised. Contractors Mason and Taylor were now paid 10s 6d per cubic yard for cesspits and 6d per pan for emptying pans for earth closets.

Cesspits and pans in Armidale were again in the news in April 1892. The inspector of nuisances was instructed to deal with C. Heap who apparently employed unlicensed workers to collect night soil. The mayor cancelled the licence of Mr Heap and this action was endorsed by council. In May Heap applied for permission to complete his contracts. Aldermen supported his application provided he provide a list of his contracts and provided that he write to the other contractors, Mason and Taylor 'asking if they objected to him furnishing his contracts'.¹³¹

Ald. Solomons informed council in March 1893 that contractors were dumping nightsoil on the surface of the ground just beyond the boundary of the town on Rockvale Road. The inspector visited the site and ordered the nightsoil to be covered with earth. In the following month, Police Superintendent Garvin informed council of 'the disgraceful condition of some of the drains in the city'.¹³²

¹²⁹ *Armidale Express*, 27 October 1891, p.5.

¹³⁰ *Armidale Express*, 29 January 1892, p.7.

¹³¹ *Armidale Express*, 13 May 1892, p.7.

¹³² *Armidale Express*, 14 April 1893, p.4.

The report was supported by District Surveyor, R. McDonald and the inspector was instructed to prosecute the worst cases. Following an inspection of a Mr Stinson's premises by the general purposes committee, he was granted permission to dump night soil there in October.

The *Armidale Express*, 23 May 1893 expressed concern over offal and rubbish being dumped in Dumaresq Creek. An appeal was made to council for 'a notice board warning people against depositing rubbish in the creek'. The correspondent also claimed 'many people regard the bed of the creek as the municipal cesspit'.

At the council meeting in February 1894 it was reported that the night cart was in bad shape. It was decided not to repair it but keep it on hand 'in case of accident'. To provide new contracts were called to which was added 1d. per pan and 1d. per cubic foot for cesspits in lieu of 2s 6d for hire of the cart. All premises where earth closets existed must register and fees paid in advance. If not paid no cleaning service would be provided and the bylaws relating to dirty premises would be invoked. The fines introduced for slovenly work and missing pans were: 2s first offence; 3s second and 5s third and 2s 6d first, 5s second and 7s 6d third. Nightsoil was now only to be deposited in dumps decided by council.

J. Starkey was appointed the new night soil man at 3d per pan and 7s per cubic yard for cesspits in March 1894. In April he was given given permission to keep the nightcart at his premises if no nuisance was created. He was also concerned about the state of the cart and was instructed not to empty any more cesspits unless a dire emergency until a new cart was procured. Action was taken to order a night cart from G. Ferrier of Wollongong.

Council had accepted a temporary common of 890 acres from the Department of Lands in March 1894. Council took action to call tenders to fence a night soil depot at the common in June. At the same time it was reported to council that the new night cart had arrived but was not constructed in a workmanlike manner. Council took action to inform Mr Ferrier that it was not prepared to accept the cart.

The inspector of nuisances presented a report on the sanitary conditions of the municipality in August 1894. It included a list of houses 'with a detailed report of every yard and closet showing that 778 yards and 896 closets had been inspected'.¹³³ Two weeks later, the general purposes committee presented a report concerning the most effective way to dispose of nightsoil. Consideration was given to a Katoomba Destructor but the cost of £3150 was out of council's reach although it was a most effective way of disposing of night soil and garbage. An alternative tried by Tamworth was construction of a pit three feet deep with alternate six inch layers of night soil and tar until the pit was filled. This was allowed to stand for 5 to 6 months and when it was all absorbed it was ignited. It smouldered away without odour. Council decided to trial the process.

¹³³ *Armidale Express*, 17 August 1894, p.4.

Council decided in September 1894 to hire C. Heap's night cart while the new cart was being altered. Council also decided to have a new body put on the old night cart and to inform Mr Ferrier that the night cart supplied by him was 'unsatisfactory in every way'. He was to be asked to put the cart into a workable condition 'for his own credit'.¹³⁴ It was estimated that repairs to the old cart would cost from £15 to £20. Concerned at the high tenders received for repairs the general purposes committee referred them to council for consideration in October.

Following prolonged action concerning repairs, the night cart was eventually altered by an Armidale coach builder Mr Dewhurst. The night cart was tested by the committee on 3 November 1894 and found to work satisfactorily. It was taken over and was now in 'constant use'.¹³⁵ A month later Council decided to purchase an iron cart based on the general purposes committee recommendation that 'Mr Butler's offer to construct such iron cart be accepted'.¹³⁶ Council announced in May 1896 tenders were to be called for another iron nightcart similar to the new one.

The inspector of nuisances informed council in January 1895 that the sanitary condition of the municipality was satisfactory. W. Butler of Dangar Street, constructed a sanitary cart for council and handed it over in January 1895. Constructed of iron it had a carrying capacity of over two yards and had 'an ingenious tipping arrangement fitted to the side'.¹³⁷

A Department of Land's letter was received in June 1898 indicating that the survey of the permanent nightsoil depot was completed. The nightsoil depot, reserve no 28702 was notified on 21 December as part of the temporary common, on the south east side of the municipality. T.J. Adams was granted permission in April 1899 to have the nightsoil taken onto his premises on the Grafton Road until the depot was ready. The tender for the sinking of wells at the depot was accepted in May and 'four acres of clearing required at the nightsoil depot' was also offered 'to the present contractor, at the rate of £2 5s per acre'.¹³⁸

As the name night cart implies, it was only allowed to be on the streets at night and in September 1900 council took action to buy a pair of new lamps. But in May 1901 council received a complaint that the night cart is being brought into town at unauthorised hours. Joseph Cook's request to bring the cart into town at sundown was refused and he was informed he must keep to the terms of the contract.

¹³⁴ Council minutes, 11 September 1894.

¹³⁵ Council minutes, 13 November 1894.

¹³⁶ *Armidale Express*, 14 December 1894, p.3.

¹³⁷ *Armidale Express*, 1 February 1895, p.4.

¹³⁸ *Armidale Express*, 12 May 1899, p.4.

The general purpose committee made enquiries concerning a new sanitary system, but because of higher costs recommended in March 1902 that the present system be adopted for a further 12 months. Applications were invited for a further 12 months from 1 April 1902 at rate of 21/2 per pan; 7s per cubic yard for cess pits and 4s per yard for slop pits.

In June 1903 the inspector of nuisances was instructed to institute immediately proceedings against those residents cleaning their own cess pits.

Approval was given in December 1904 for the purchase of a new night cart and for repairs to be completed on the old one at an estimated cost of £40. The tender of S. Edgar of £15 15s for construction a cart shed at the sanitary depot was approved in November 1905 and action was also taken for construction of a small shed for the inspector's horse at a cost of £2.

Communication with the Board of Health was received in March 1906 concerning an application to have the municipality gazetted as a sanitary area under the Health Act. In December council received a letter from the Department of Public Health concerning the proclamation of Armidale as a sanitary area and enclosing a copy of the model by-laws. In January 1907 council decided not to gazette the Borough as a sanitary area but wrote to the board for information on advantages of declaring such an area. Following complaints about the sanitary depot, council approved the opening of new ground for the burial of night soil. A special committee report hoped the 'evil will be abated'.¹³⁹ In April, Ald. Higinbotham suggested the health committee consider the establishment of a septic system to serve the area between Dangar and Falconer Streets.

Under the ordinances of the Local Government Act 1906 it was compulsory for councils to adopt an airtight pan sanitary service after 31 March 1908. The general purposes committee recommended that the service be adopted and council agreed to purchase a whole plant required for the service at a cost of £1000. Money available in the sanitary account was to be used with council to apply for the Governor's approval to raise funds for the balance.

Ald. Hawke drew attention to the insanitary state of East Armidale in March 1908. After a heated debate, council moved 'that the Sanitary Inspector visit the locality, and make a report to the council'.¹⁴⁰

In May 1908 council in committee decided that in future all sanitary fees were to be collected by council and the sanitary contract was to be let for 5 years. New tenders were to be called for a day and night service with a deposit of £25 with each tender. Tenders closed on 2 June and were awarded to J. Boler. In July he sought permission to enter the sanitary depot to erect buildings and machinery for

¹³⁹ Council minutes, 26 January 1907.

¹⁴⁰ *Armidale Express*, 6 March 1908, p.3.

the new contract and requested a date to commence the contract. Council applied to the Board of Health for permission to use the Zolmer airtight duplicate pan system in September. Boler commenced operations under the new approved system on 1 October.

In July 1908 council borrowed £400 from the gasworks account to be placed in the sanitary account to extend the water mains to the eastern boundary of town. That month, a tender was awarded to M.J. Mahony to extend the water mains to the sanitary depot at a cost of £533 12s 6d with the work to be completed in eight weeks.¹⁴¹ The Dumaresq Shire engineer, T.W. Spencer granted permission to lay the pipes to the sanitary depot in September. That month council announced that, under the sealed pan sanitary system, the contractor will remove night-soil between the hours of sunset and sunrise as from 1 October 1908.

Town clerk Thomas Jones in February 1909 drew attention to the need for a system of sewerage. He felt the cost to Armidale would be the same as the present duplicate pan system. Council forwarded a report to the Board of Health concerning the sanitary condition of Armidale on 5 May 1911. In reply the board highlighted the lack of action on aspects including the collection of night soil, the provision of a spray pump, urinals at public institutions and schools as well as the appointment of a qualified sanitary officer. The report concluded 'the establishment of a garbage removal service should not be delayed'.¹⁴²

In November 1911 Mayor Ald. Solomons submitted the following minute to council: 'I beg to suggest that the Council take into its earliest consideration the question of establishing a sewerage scheme in Armidale in its more congested parts'.¹⁴³ A committee was appointed to investigate and report to council and the editor of the *Armidale Express*, 8 December commented: 'The Mayor deserves every commendation for his progressiveness and foresight.' In January 1912 the sewerage committee reported an application had been made for an officer of the Department of Public Works to visit and report on a sewerage scheme. The committee also suggested a survey be made and an estimate be prepared of the cost of the scheme proposed.

The sanitary contractor, J.H. Boler reported to council in September 1912 that the old road to the sanitary depot is being fenced in because the Department of Lands is subdividing the temporary common. In October council recommended that a new road be formed, the tender of J.H. Boler be accepted for the removal of trees obstructing the road and that an application be made to the Lands Department for dedication of the road.

¹⁴¹ *Armidale Express*, 31 July 1908, p.3.

¹⁴² *Armidale Express*, 26 May 1911, p.3.

¹⁴³ *Armidale Express*, 1 December 1911, p.3.

Mr V.H. Turner, a civil engineer in the Department of Public Works arrived in Armidale in October 1912 with a team of surveyors to take levels and contour surveys and make an exhaustive inquiry into the best means of developing a sewerage scheme. The proposed area included Douglas to Butler Streets and from the creek to Mann Street at an estimated cost between £30 000 and £40 000. The engineer also investigated the water supply situation. A lengthy report resulting from the inspector's recent visit to Armidale was tabled and published in the *Armidale Express*, 24 December 1912. It recommended a number of necessary improvements re garbage and septic tanks etc.

In September 1917 the Public works Department forwarded a report of Superintendent Engineer Fleming to council. He commented: 'It will be seen that the result of the investigations shows that it is impracticable to design a sewerage scheme for the town at such cost as to be within the financial reach of council'.¹⁴⁴ That December council found that the cost was beyond the borrowing powers of the council.

In order to save costs, council increased the sanitary contract from three to five years thus resulting in a saving of £200 to the ratepayers in August 1923. The contract was again awarded to J. Boler.

A new pan washing shed, costing £75 was erected at the depot in 1924.

Aware of the need for a water and sewerage system for the new Teacher's College, aldermen moved in December 1928 that the Department of Public Works be asked to provide a revised estimate of sewerage installation. At the same time health concerns arose when Dr. Taylor, assistant government analyst of the Public Health Department and W.T. Anderson supervising engineer, Department of Public Works submitted a report in January 1929 on the condition of Dumaresq Creek. 'An analysis of the water in Dumaresq Creek, at the foot of Marsh Street, showed there was little difference between the creek and a sewerage effluent'.¹⁴⁵ Council was advised to commence work on the construction of a sewerage system as soon as possible. Following a further inspection of the septic tanks in Armidale, inspector Stoney of the Department of Health reported that the increasing number of systems must be regarded as a potential danger to the pollution of natural water courses and there is 'an urgent need of a sewerage system for the city'.¹⁴⁶

That December council received a map showing levels and position of sewers and was now awaiting a statement of the estimated cost of the scheme. Full details of the proposed sewerage scheme were given to council by the Public Works Department in January 1930. The estimated cost of the operation was £101 285

¹⁴⁴ *Armidale Express*, 14 September 1917, p.2.

¹⁴⁵ *Armidale Express*, 1 February 1929, p.5.

¹⁴⁶ *Armidale Chronicle*, 17 July 1929, p.2..

with an annual cost of £7 337. The scheme involved a gravitation scheme for the higher levels and main portion of the town and a low level pumping station for portion of the town near the Dumaresq Creek.

To be in readiness to proceed at once with the proposed Armidale sewerage scheme, council took action in July 1930 to have a detailed survey made. The Public Works Department informed council in August the preliminary survey would cost £1800. Despite Mayor Watson's support, the aldermen voted against the expenditure in September. In October the Chief Secretary's Department enquired of the present position concerning the provision of a town sewerage scheme but at this stage the scheme had been shelved. By February 1931 opposition to the scheme reduced as aldermen realised that a sewerage scheme was one way to reduce local unemployment. Although some were still concerned about the added cost to ratepayers, council decided to ask the mayor to put a case to the Local Government Association to ensure that all councils are charged an uniform rate of interest for such works. In April the Hon D.H. Drummond, MLA, Mayor Watson, Ald. J.B. Sullivan and the Town Clerk F.W. Milner met the Minister for Works to investigate the possibility of installing sewerage in Armidale.

The Minister for Education, D.H. Drummond MLA forwarded council's application for a loan of £100 000 for sewerage work to the Unemployment Relief Council in July 1932. The *Armidale Express*, 17 October 1932 claimed in October the conservative nature of council prevented its acceptance of a grant of £50 000 and thus commencement of the sewerage scheme. The correspondent stated: 'sewerage is a public service that must become ... and in the interests of citizens, ratepayers, and all others it is essential that steps be taken immediately to commence the work'. That month council took action to ask the Public Works Department to complete a detailed survey of the city. In December the Hon D.H. Drummond MLA advised council he would again take up the matter of sewerage with the Unemployment Relief Council.

The Hon. D.H. Drummond announced in January 1933 that the Unemployment Relief Council had agreed to make available £67 000 for the installation of the gravitation section of the Armidale sewerage scheme. At the same time, surveyors T.G. Wilson and R.E. Doyle of the Public Works Department arrived in Armidale to commence a survey. Doyle 'intimated that the treatment works would be located at the north east corner of the town beyond the showground, and it was from this point that the survey would commence'.¹⁴⁷

A special meeting of council on Friday 27 January 1933 approved the sewerage plan and a call was made by petition for a referendum but council representatives believed that an immediate decision was imperative. Money was made available on the basis of a £33 500 grant and a £33 500 loan at 5% for 40 years for a gravitation scheme to serve South Armidale. Council also decided to make

¹⁴⁷ *Armidale Express*, 9 January 1933, p.4.

application for a further plant to cover North Armidale. However, in March notification was 'received of the inability of the Unemployed Relief Council to provide an additional £40,000 for sewerage North Armidale'.¹⁴⁸

By June 1933 surveyor 'A.H. Cornish had completed the maps of his survey of the city for a household sewerage system and a system of council sewer mains'.¹⁴⁹ Construction work commenced in July with thirty men employed and it was expected that the scheme would eventually employ 150 men.

Initially the Department of Public Works selected a site for the proposed sewerage treatment works which was satisfactory on economic and engineering grounds, close to the eastern boundary of Armidale. Council made its initial protest in June 1933 about the location of the works and in August determined 'under no consideration will the Armidale Municipal Council approve of the site recommended by the Department'.¹⁵⁰ In January 1934, the Armidale P.A. & H. Association protested against the works to be located within half a mile of the showgrounds. Similar stands were taken by De La Salle College and The Armidale School and thus council adhered to its original decision to have the sewerage works erected two miles out of town on portions 77, 78 and 119 at the junction of Dumaresq and Tilbuster Creeks.

The new site was approved by the Department of Health in February 1934 and the Public Works Department informed council in April that the site had been altered to the Tilbuster Creek site. This meant an additional gravitation main of two and a half miles and 'owing to the amount of rock to be bored the extra cost would amount to £8000'.¹⁵¹ Funds were available to allow for the extension but not for the low level system from North Armidale.

Following council's request for an increase in the hours of men engaged in emergency relief work, the Minister for Local Government informed council in June 1934 'that an amendment had been made to provide for single men to be given four hours and married men eight hours additional employment each month'.¹⁵² Estimated costs from the Department of Public Works were also received and council agreed to proceed with the complete sewerage of Armidale. The Minister for Labour was to be asked to provide 'the additional amount of £33 000 on the same terms' as for 'the central and southern portions of the city- half loan and half grant'.¹⁵³

¹⁴⁸ *Armidale Express*, 8 March 1933, p.7.

¹⁴⁹ L. Gilbert, *An Armidale Album*, New England Regional Art Museum Association, 1982, p.118.

¹⁵⁰ *Armidale Express*, 9 August 1933, p.9.

¹⁵¹ *Armidale Express*, 2 May 1934, p.3.

¹⁵² *Armidale Express*, 13 June 1934, p.3.

¹⁵³ *Ibid.*

A deputation of Armidale unemployed men met D.H. Drummond in May 1934 to discuss the extension of sewerage to North Armidale. To present their case, he met the Minister for Labour and Industry, Mr Dunningham who in turn referred the matter to the Minister for Public Works. Aldermen M.H. O'Connor and L. Dawson met as a deputation in June with Mr Dunningham to present Armidale's claims to complete the sewerage works.

Council received an initial £67 000 on a half-grant, half-loan basis on the understanding that council would undertake water and sewerage works for the relief of unemployment. The minister was unable to further assist council and suggested an application should be made to the Minister for Public Health, Mr Weaver. The chairman of the Unemployment Relief Council informed council in July that 'Armidale has had very fair consideration'¹⁵⁴ and further money could not be forwarded to complete the sewerage of North Armidale. The secretary of the Department of Public Works acknowledged council's request to proceed with the sewerage of North Armidale in August 1934 but advised council loan money was not available this year.

Not to be deterred in the extension of sewerage, council requested in August an estimate of the cost of sewerage the Garibaldi Street area. To support the council, Mr Drummond approached the Minister for Public Works Mr Weaver who promised 'the matter' of the North Armidale Sewerage 'would have early consideration'.¹⁵⁵ A month later, the department advised council the proposed extension south of the railway line to serve twenty nine houses would cost £2600.

Council proposed an oil engine for the pumping station but the Public Works Department in October 'advised that the design of the works was not suitable for such a unit ... a supply of electricity was deemed essential'.¹⁵⁶ Despite council opposition, the department 'decided on an electric plant ... at a cost for the line of £884'¹⁵⁷ in November.

By November 1934 the laying of sewerage mains for South Armidale was practically completed and the outfall sewer was under construction. Council expected the treatment works would commence shortly but efforts to gain sewerage for North Armidale had failed.

By the end of 1934, the amount spent on the sewerage works totalled £36 658 and by 30 March 1935, £46 000. In March 1935 council learnt that the sum of £33 000 was available for completion of the sewerage work at North Armidale and agreed to accept the loan to cover the work in April. However by December 1935, no start had been made.

¹⁵⁴ *Armidale Express*, 9 July 1935, p.4.

¹⁵⁵ *Armidale Express*, 19 September 1934, p.3.

¹⁵⁶ *Armidale Express*, 17 October 1934, p.7.

¹⁵⁷ *Armidale Express*, 28 November 1934, p.8.

By early January 1935, three filter beds and sedimentation tanks were under construction at the treatment works.

The Minister for Works and Local Government travelled to Armidale to meet with the City Council and Dumaresq Shire on Friday 22 November 1935. Part of the agenda was to confer with the council concerning the completion of the sewerage and the appointment of an engineer. He 'made it quite clear that before any more money is made available from consolidated revenue, the City Council must give a guarantee that a qualified engineer would be entrusted with the supervision of works'.¹⁵⁸

Council agreed to the Public Work's request to call tenders for fencing of the treatment works in December 1935. Responsibility for the care and management of the partially constructed sewerage works passed from the Public Works Department to the Council on 20 December 1935. The works for the high-level portion of the town included 'reticulation mains and gravitation main, treatment works, ventilation, pumping plant and machinery and incidental works'.¹⁵⁹ A number of the aldermen expressed concern over the uncompleted work but the inspector of health and sewerage stated from 'what I personally saw there is nothing wrong with the reticulation scheme'.¹⁶⁰

Mayor M.H. O'Connor met again with the Minister for Local Government and Works Mr Spooner at Grafton in January 1936 to discuss the 'completion of the Armidale Sewerage works to take in the North Armidale area'.¹⁶¹ In March the newly appointed city engineer Botham urged council to press strongly for the North Armidale sewerage scheme. In April the government was prepared to make available the sum of £9000 as part of the cost of the work. The Commonwealth Bank informed council in June that the application for a £23 000 loan for the North Armidale sewerage scheme would receive consideration if certain information was provided.

Council received information from the Department of Works and Local Government in October 1936 that all future water and sewerage schemes undertaken under subsidised conditions must be carried out under contract. The department also advised council of the need to submit an application for approval to borrow its share of the cost of the proposed sewerage work. That month the initial plan to sewer Armidale was complete and the State Monier Pipe Company removed its plant. Since the original decision and plans, council decided to sewer North Armidale and 3000 more feet of piping was required. Council had made the decision some time earlier and it was felt that the unwarranted delay on the

¹⁵⁸ *Armidale Express*, 25 November 1934, p.4.

¹⁵⁹ *N.S.W. Government Gazette*, No. 214, 20 December 1935, p.4868.

¹⁶⁰ *Armidale Express*, 22 January 1936, p.2.

¹⁶¹ *Armidale Express*, 5 February 1936, p.7.

part of the Department of Public Works and Local Government prevented the possible manufacture of the additional pipes before the removal of the plant. Consequently additional expense was now required.

The Commonwealth Savings bank was prepared to provide a loan of £23 000 in January 1937 to complete the works. That month the Department of Works and Local Government approved council's suggestion of financing the North Armidale sewerage. Subject to the Returned Soldier's Act, council decided in March to restrict work on the scheme to unemployed bona fide Armidale residents. News was received from the Minister advising that the Governor-in-Council had approved of an ordinary loan of £23 000 being raised to defray the costs'.¹⁶² Work commenced in June 1937 but Engineer L.G. Botham expressed his concern about the employment of men from outside Armidale on the project.

The Hon. D.H. Drummond made personal representations to the State Government concerning the eligibility of applicants for employment on the Armidale low-level sewerage works. The cabinet amended its previous decision and 'decided that those applicants with twelve months local residence who are employed for six months will be given first consideration, subject to the provisions of the Returned Soldiers and Sailors Employment Act'.¹⁶³ By September the North Hill section of the sewerage works was completed.

Based on Department of Works and Local Government advice, council accepted the tender of T.J. Jay of £297 10s for construction of the supply of pumping plant and accessories in November 1937. By November, the concrete work in connection with the North Armidale sewerage was nearing completion and 50 000 feet of main had been laid. The Department of Works and Local Government forwarded a fresh agreement providing for a grant of £9000 towards the scheme costing a total of £32 170 in March 1938.

Prior to the installation of sewerage, 90 000 sanitary services were rendered and in October 1938 health inspector L. Brown reported the number of services given last year was approximately 13 500. Council implemented a policy to assist people who could not afford to pay for sewerage connections but by November few residents had applied for assistance. By February 1940 only three people had sought assistance from council to have sewerage installed despite a number of orders being issued to residents.

City engineer, L.J. Botham informed council in June 1938 pumps for the Armidale low level sewerage had been installed and tested. The North Armidale low level sewerage scheme was completed in 1938 and by December 670 premises were connected. Twelve months later, 886 premises were connected out of 1522 Armidale premises although sewerage was not available to most residents

¹⁶² *Armidale Express*, 12 May 1937, p.3.

¹⁶³ *Armidale Express*, 6 August 1937, p.4.

in Eastwood and south of the railway line. Nine hundred and forty residents had been connected to the sewerage by December 1941.

The government stock inspector had recommended to council in August 1933 that they should consider the advisability of establishing a sewerage farm some fifteen miles east of Armidale as a means of using effluent from the sewerage works. Because of the distance involved, council only tabled the letter at that stage. In January 1936 council announced it was considering agistment rights at the catchment works. Following an inspection of the sewerage treatment works by Aldermen Harvison and Watson in August 1943, council decided to investigate use of the land for cultivation. At that stage, 'about 100,000 gallons of 90 per cent. pure water escaped daily' and Ald. Harvison was asked to 'investigate the question of using the land'.¹⁶⁴ In May 1946 the building health, and general purposes committee advised that the use of farm land at the sewerage works was under consideration. By June 1947 thirty acres of land had been ploughed at the sewerage treatment works with seven acres sown to grass and fencing of the ploughed land was in progress. By January 1949 'a tomato growing project had been developed by the Australian Inter-state Company ... at the sewerage works'.¹⁶⁵ In June plans were announced to place eighty of the 150 acres at the sewerage works under cultivation. The additional acreage was prepared to grow phalaris grass, for seed, lucerne and oats. By December land at the sewerage works had been used for crops of oats, maize, lucerne and phalaris grass planted for sale. The unused land at the works was under lease by December 1952 and by March 1954, 'the main purpose of the irrigation plant at the treatment works was the distribution of sludge'.¹⁶⁶ Plans were announced in December 1971 to declare the treatment works land of over fifty acres a sanctuary.

The Local Government Act gave council powers to make agreements with users outside their boundaries with charges to be agreed upon. De La Salle was being connected with sewerage in March 1943. That year council spent £3000 on means to provide sewerage at the New England Girls School but a dispute arose with the school over the payment of an amount of £80 per annum.

Following an approach by D.H. Drummond MLA, the Minister for Education informed council 'he would investigate council's request for monetary assistance in connecting the New England University College with sewerage and gas'.¹⁶⁷ The Minister for Post-War Reconstruction also informed Mr Abbott MHR that the request had been forwarded to the Federal Treasurer. But in the mayor's 1946 annual report, he commented the University sewerage is still in abeyance. Council received news of a grant of £6000 for the extension of sewerage and gas mains to the New University College in April 1947. Council agreed to the

¹⁶⁴ *Armidale Express*, 5 September 1943, p.6.

¹⁶⁵ *Armidale Express*, 19 January 1949, p.5.

¹⁶⁶ *Armidale Express*, 5 March 1954, p.11.

¹⁶⁷ *Armidale Express*, 17 October 1945, p.7.

conditional connection of a sewerage supply to the New England University College as soon as possible in June provided the government contribute the grant as promised. By August 1948 construction work at the University sewerage line had been completed as well as installation at the Rugby League Park.

The engineer was instructed by council 'to take necessary levels and report as to location of sewerage mains in South Armidale and estimate cost, as early as possible'.¹⁶⁸ By September 1946 the South Armidale sewerage survey had been almost completed and design work was underway. The city engineer J.D. Brown estimated the cost for the scheme was approximately £3310 and reported 'the design had been substantially completed'.¹⁶⁹ Construction of the sewerage for South Armidale was underway by December. In the 1946 annual report the mayor revealed that a 'new law making it Council's responsibility to supply services has greatly increased this department's works and costs'.¹⁷⁰ By February 1947 four thousand feet of sewer pipes had been laid. Some delays occurred and in March the work on the South Armidale sewerage resumed and approximately 600 feet of pipes were laid.

In August 1946 East Armidale residents petitioned council for the installation of sewerage. In reply the water and sewerage committee recommended 'that no action be taken this year and, if possible, a survey of the area concerned be carried out next year'.¹⁷¹ City engineer, J.D. Brown completed the preliminary survey of East Armidale for sewerage in November 1947. He reported 'approximately 200 chains of sewerage mains would be required and a tentative estimate of the work was £7000'.¹⁷² Two months later, the editor of the *Armidale Express*, 21 January 1948 wrote 'it is a matter of immediate interest and concern that East Armidale should have the benefit of a sewerage system'. That month, council determined to prepare a case for a special grant for the project estimated to cost £8000.

The Hon Drummond MLA promised 'support to the question of a grant to assist in the work of installing sewerage at East Armidale'¹⁷³ in June 1949. Council took action in July to borrow £12 000 for the extension of the East Armidale sewerage and to carry out main extensions. In November, council received news from the Minister for Local Government J.J. Cahill, that the Council is not eligible for a Government grant towards the capital costs for the East Armidale sewerage. Despite the setback, council took action on December to raise a loan and proceed with the work.

¹⁶⁸ *Armidale Express*, 6 March 1946, p.13.

¹⁶⁹ *Armidale Express*, 2 October 1946, p.11.

¹⁷⁰ *Armidale Express*, 13 December 1946, p.5.

¹⁷¹ *Armidale Express*, 21 August 1946, p.10.

¹⁷² *Armidale Express*, 26 November 1947, p.4.

¹⁷³ *Armidale Express*, 8 June 1949, p.3.

The sewerage of East Armidale finally commenced in February 1950. Once the work commenced council introduced a levy of £4 and the East Armidale Progress Association immediately protested. The association was informed 'that once money for sewerage purposes was borrowed, council was entitled to levy the rate'.¹⁷⁴ Council approved the first sewer connections to be made in East Armidale in June.

In his 1938 annual report the health inspector recommended 'a combined sanitary and garbage service, to be run by council, and not let out to a contractor'.¹⁷⁵ The Armidale City Council commenced a sanitary service to the shire adjacent to the municipality on 1 December 1948. The charge was 2/- per pan removal. Council purchased its own plant and commenced a sanitary and garbage service from 1 January 1949.

In January 1954, the health and building inspector Les Brown revealed further sewerage plans. Sewerage connections of the Armidale Teacher's College hostel at the corner of Mann and Taylor Streets meant extensions to a large unsewered area in the vicinity of Kentucky and Taylor Streets were now possible. In the past, 'the fall of the land in the area made sewerage connections uneconomical because of the small number of houses there'.¹⁷⁶

Armidale Council and Dumaresq Shire met in March 1955 to discuss water and sewerage for a number of houses at Ben Venue outside the serviced area. In October 1959 council set aside £2500 for the cost of sewer extensions to War Service homes in Douglas Street. The extension was to be a continuation of the Housing Commission property in that street. Following a report by the health surveyor R. Esdaile, council decided in June 1960 that all premises within the city must be connected to the sewerage system and the water mains. At that stage, 'there were about 180 houses in the city not connected to the sewerage scheme'.¹⁷⁷

In July council approved the expenditure of £1000 from loan funds for improvements at the sanitary depot. Reserve No. 83234 for sewerage purposes on Long Swamp Road was notified on 16 June 1961.

In March 1964 the Public Health Department warned that the Commissioners Waters was highly polluted. Two weeks later, council acted immediately in April to extend the mains at the treatment works beside the Dumaresq Creek in an attempt to reduce pollution of the creek and Commissioner's Water.

¹⁷⁴ *Armidale Express*, 26 April 1950, p.8.

¹⁷⁵ *Armidale Express*, 18 January 1939, p.7.

¹⁷⁶ *Armidale Express*, 20 January 1954, p.4.

¹⁷⁷ *Armidale Express*, 10 June 1960, p.13.

Council rejected an offer by Weaver, Gentle and Harrison to lend money without interest for the purpose of extending the water main to the new Bellevue subdivision in May 1961. In June 1965 council announced an extension of the sewerage costing £5200 to new housing areas in North and South Armidale as well as Bellevue. This work was to 'leave only one major unsewered pocket in the developed areas of Armidale- several streets east of De La Salle College (now O'Connor High School)'.¹⁷⁸ By December 1971 there was one major area in East Armidale requiring installation of sewerage including a Housing Commission estate.

Council announced in April 1966 it would ask the firm of Sydney consultants that completed the survey of the water reticulation system in 1965, to undertake the survey of the city's sewerage system. Council intended to seek 'a loan of \$148,000 for the work'.¹⁷⁹ In 1967 a firm of consulting engineers was engaged to consult on the existing sewerage reticulation scheme. Following a meeting of Mayor Piddington, Ald. Hewitt vice-chairman of the finance committee and the Minister for Public Works and Member for Armidale, Davis Hughes, council took action to call tenders for augmentation of the sewerage treatment works in November. Work began on the £148 000 works in March 1968; the 40 week contract was won by D.C. Hamilton of Sydney. 'This work entailed the complete duplication of the existing works and provided for more-up-to date sludge digestion with a heated sludge as fuel for the boiler'.¹⁸⁰ The work was completed in 1970 at a total cost of \$373 000.

A report published in the *Armidale Express*, 23 January 1970 demonstrated the extent of the work associated with the engineering department of council. Some seventy men were employed on mainly outdoor works and major projects included a \$200 000 recently completed sewerage treatment works extension and a \$111 000 sewerage pipeline extending three miles from the treatment works in Armidale.

City Council Engineer David Hegarty recommended to council in September 1976 that an immediate start be made on a number of major water and sewerage programs. A strategy report by consultants, Sinclair and Knight indicated that there was a backlog of works.

A letter from the State Pollution Control Commission in August 1980 requested information concerning 're-use of treated effluent, particularly for irrigation of golf-courses, racecourses, playing grounds and parks and gardens'.¹⁸¹ The commission was informed council recycles sewerage waste water into Dumaresq

¹⁷⁸ *Armidale Express*, 9 June 1965, p.13.

¹⁷⁹ *Armidale Express*, 6 April 1966, p.8.

¹⁸⁰ Council of the City of Armidale, Entry in 1970, A.R. Bluett Memorial Award.

¹⁸¹ Letter from State Pollution Control Commission, August 1980, Armidale City Council, Rep A, 60 E, Water Analysis.

Creek and surface water is diverted into a large disused brick pit owned by the Armidale Golf Club to be used for the watering of greens and fairways.

In 1984 council completed a trunk sewer main from Douglas Street via the creeklands to St. John's Avenue at a total cost of \$1.2 million. It 'relieved the frequent sewer surcharges associated with heavy rainfall in the West and Central Armidale'.¹⁸²

In December 1987 council approved the construction of two sludge lagoons to cost \$45 000 as an additional part of the augmentation of the city's sewerage system. In 1991 'Council entered into a subsidy agreement with the Department of Public Works for development of a comprehensive asset management system for council's extensive water and sewerage systems'.¹⁸³ That year consultants were engaged to undertake a pilot study of part of the sewerage system.

A 105 ha property adjacent to the Sewerage Treatment Works was purchased in the 1995 to 1996 financial year.

Health.

The Municipalities Acts of 1858 and 1867 gave councils power to appoint inspectors of nuisances but the shortage of funds and apathy towards health matters prevented most councils from appointing such officers. It was not until 1896 that the first Public Health Act was passed which provided for health officers and sanitary officers. The health officer was a fully qualified medical practitioner appointed by the government as permanent salaried officers in charge of health districts. The main duty was to report on sanitary conditions of district. The sanitary officers had no qualifications and was appointed at the discretion of a local council. Only if unsatisfactory conditions were proved could council be forced to appoint an officer. The Board of Health developed an oversee relationship with council but could require local government to conduct duties in relationship to:

maintenance of clean premises, suppression of nuisances, regulations of conditions determining the sale, conveyance and storage of food, and slaughtering, sewerage, drainage, night soil removal, refuse collection, cemeteries and lodging houses.¹⁸⁴

The newly established Armidale Borough Council was quickly confronted by health issues and in June 1864 Joseph Scholes and R.S. Jenkins 'requested that all slaughter yards and piggeries within the municipality be removed as early as

¹⁸² City of Armidale, 1984 Annual report.

¹⁸³ Armidale City Council, Annual report and Community Directory 1991/1992, p.26.

¹⁸⁴ F.A. Larcombe, *The Stabilization of Local Government in New South Wales. A History of Local Government in New South Wales: Vol. 2*, Sydney University Press in association with the Local Government Association of New South Wales Shire Association of New South Wales, 1976, p.135-136.

possible'.¹⁸⁵ Council promised to take action if the gentlemen could identify the offending premises.

The chairman of the improvement committee, Ald. Mulligan recommended, on sanitary grounds, the appointment by the council of an inspector of nuisances in November 1865. Police Senior Sergeant du Vernet was to undertake the duty for twelve months but the matter of an appointment was again raised in January 1866. Du Vernet had not been in Armidale for several weeks and many complaints had been made. Consequently the overseer was appointed to the position of inspector.

Messrs Kennedy and McKinley, two members of the local board of the Denominational School asked for the removal of the Armidale tanneries in September 1866. Mr J. Brown and others also complained of the tannery of Ald. Tysoe and another to be erected by Ald. Mulligan. In October the mayor reported that he, Ald. Fitzgerald and Ald. Schmidt had visited Mr Tysoe's tannery and intended to submit a by-law to prevent nuisances in the municipality.

Early in December Ald. Tysoe called for the appointment of an inspector of nuisances 'to keep the streets clear of bullock's heads, dead dogs etc'.¹⁸⁶ At the same time, it was reported the market square was a receptacle for rubbish. The correspondent in the *Armidale Express*, 8 December 1866 supported Ald. Tysoe and appealed to council to take action and 'adopt some means for making the square what it should be'.

Ald. Frederick announced his intention to table a motion for the appointment of an inspector of nuisances in September 1871 and in November the council clerk, W. Ewins was appointed to the position at a salary of £12 per annum. In April 1873 Armidale Inspector Davidson was asked to provide a member of the police force to be inspector of nuisances. Contable P. Rafferty was appointed in May and his duties established.

In January 1886, an Armidale resident A.P. McKinlay requested council demolish 'a cottage near his residence where several cases of typhoid fever had recently occurred'.¹⁸⁷ According to the *Armidale Express*, council had little power to act as there were no applicable by-laws and there was no inspector of nuisances to enforce existing by-laws. Later that month, George Grills was appointed inspector at an annual salary of £12 but then resigned on 1 March. Frank Schaupp was appointed on 30 March at a greatly increased salary of £25. New by-laws were framed under the Nuisances Prevention Act 1875 and extended to the Borough on 1 July 1886 by council. The inspector was also given the duty of becoming the bailiff and collecting arrears in rates.

¹⁸⁵ *Armidale Express*, 25 June 1864, p.2.

¹⁸⁶ *Armidale Express*, December 1866, p.3

¹⁸⁷ *Armidale Express*, 22 January 1886, p.4.

Duties of Officers.

The Public Health Act 1896 provided for a Board of Health and two categories of officers: firstly, health officers (medical practitioners in charge of a health district) and sanitary inspectors with no stipulated qualifications appointed by local councils. This system remained substantially in operation until 1972. A copy of the council by-laws was forwarded to the Health Department in March 1897 and in November 1900 the inspector of nuisances was given the power to prosecute for all breaches of the by-laws.

The Public Health Act 1902 incorporated the original legislation and other supplementary measures included: Dairies Supervision Act 1901; The Public Health (nightsoil removal), Cattle Slaughtering and Noxious Trades Act 1902 and the Pure Foods Act 1908. The 1906 Local Government Act set down qualifications for town clerks and engineers but despite the importance of public health, qualifications were not established for sanitary inspectors. It was the Pure Foods Act 1908 that widened the duties of the sanitary inspectors beyond the supervision of property and led to the unofficial use of the term health inspector.

In January 1902 council determined the duties of the inspector of nuisances. Duties were not to include the duties of meter reader, account collector and inspector of dairies. But Thomas Mitchell was appointed as inspector of nuisances and dairies in February. Council advertised that a case of typhoid had been reported in town and instructed inspector Mitchell in November to pay special attention to the sanitary conditions of the town. Mitchell was suspended by the mayor in May 1904 and Francis Brown was employed in July.

By April 1908 duties of the inspector of nuisances also included: sanitary inspector; dairies inspector; meter reader of the gas and water meters and collector of gas accounts at a salary of £3 per week. That June Brown was also appointed inspector of vehicles under the Local Government Act 1906 and inspector under Noxious Trades and Cattle Slaughtering Act 1902 and Diseased Animal and Meat.

A report from the Board of Health showed samples of milk adulterated by water in July 1908. The inspector of nuisances was directed to deal with the cases as the law required and the council's solicitor was to be employed.

In November 1914, council took action to apply for a certificated sanitary inspector at a salary of £156 per annum. The Board of Health was to be asked to contribute half the salary. At the time the duties included: ordinances, sanitary inspector, dairy inspector, building inspector, impounding officer and any other duties which may be defined by the council. The *Armidale Chronicle*, 31 October 1914 supported the move for a certificated inspector. Despite twenty seven applications, a former town clerk from Warilada, A.J. Devine was appointed as a non-certificated inspector. The Public Health Amendment Act 1915 was passed and in October council was informed by the Public Health Department of the additional powers 'conferred upon sanitary inspection of hotels in regard to

accommodation for the travelling public, sanitary arrangements and general cleanliness'.¹⁸⁸

In December 1917, council advertised for the combined positions of health inspector and all other inspectorships under the provisions of the Local Government Act and ordinances. The duties of such an inspector now included: inspector of public vehicles, inspector of nuisances and inspector under the Public Health Act and Impounding Officer. In 1919 the term sanitary inspector was replaced by health inspector and after 1933 stipulated qualifications were required.

An adverse report from an officer of the Department of Health was tabled with council in March 1911. The *Armidale Express*, 17 March 1911 claimed the criticisms were unfounded as 'Armidale is one of the healthiest spots in Australia'. In December 1912 a report from the Department of Health recommended a number of necessary improvements to garbage and septic tanks.

Health Inspector W. Fetherstone's car was blown up by explosives at his Barney Street residence in October 1925. The *Armidale Chronicle*, 14 October 1925 commented 'the motive for the crime is undoubtedly spite'.

The report of council for the year ending 31 December 1927 indicated the Health Inspector, W.M. Fetherston had inspected sixty five new dwellings; registered thirteen dairymen and twelve milk vendors; provided licenses for public vehicles, drivers of public vehicles, butchers, smallgoods shops, fish and barbers; maintained a list of notifiable diseases and straying stock as well as organising the cutting of noxious weeds. Seven months later, council forwarded objections to D.H. Drummond and M.F. Bruxner M.L.A.s against 'placing noxious weeds under the control of P.P. Boards'.¹⁸⁹

The office of health inspector was rendered vacant by the sudden death of W. Fetherston in September 1932. The Director-General of Public Health reported to council in November of a number of matters related to public health that caused concern. Matters that included: cleanliness of premises; storage of rubbish; maintenance of Dumaresq Creek and discharge of sullage water. Consequently the Department of Public Health asked the council to appoint a health officer immediately in November 1932. In April 1933 Ald W.H. Watson interviewed Mr Currie of the Board of Health concerning the employment of a certificated health inspector in Armidale. In August the new health inspector and sewerage engineer, Les Brown arrived in Armidale.

At the council meeting on 19 December 1938, it was determined that the health surveyor, in addition to the control of house services will be placed in charge of all sewerage maintenance work as well as treatment work and the pump well but

¹⁸⁸ *Armidale Express*, 15 October 1915, p.3.

¹⁸⁹ *Armidale Chronicle*, 1 August 1928, p.3.

new construction will be in charge of the city engineer. The move to have the water works and sewerage placed under the control of the city engineer failed in October 1939.

In his 1938 annual report the health officer hoped that municipal services will be extended to include the provision of public conveniences, playing areas, 'a municipal incinerator, and investigation of the question of establishing municipal abattoirs'.¹⁹⁰

Council informed the Minister for Local Government in October 1946 of the need for a regular qualified health inspector 'relating to sanitary and garbage, oversight of abattoirs or licensed slaughtering, mosquito control and prevention of malaria'.¹⁹¹

After discussion with Dumaresq Shire, council approached the Minister for Health, A.H. Jago with a plan to share its health surveyor, D.M. Crawford with the shire in August 1967.

In 1969 a Committee on Community Health Services, chaired by Kenneth Starr recommended the creation of a Health Commission to assume full responsibility for public health services in the state. Once created by state legislation in 1972, the commission replaced the former Department of Health, Hospital and Ambulance Transport Services. The Board of Health acted as an advisory body until it was abolished in 1975.

Dairies.

In May 1891 it was announced the provisions of the Dairies Supervision Act would be extended to Armidale. The Act was extended to the Borough of Armidale and a radius of 8 miles outside the boundaries on 1 October 1892. Council also took action that month and appointed W. Stinson as inspector. All dairymen and milk vendors were now required to register with a fine of £20 for non compliance. Dairies registered in January 1893 included J.J. McKeon; Jno Hogan; Jno Sullivan; Mary Fitzgerald; Richard Charlton and Thomas Stuart. That month council informed all dairymen that water in the Armidale Creek was unfit for human consumption and they must prevent their cattle from drinking it. The Board of Health informed council in October there was no need to gazette the appointment of the inspector of dairies. In April 1894 dairymen were instructed to cease the emptying of earth pans on their premises or their registration would be withdrawn. The inspector could report in January 1895 'the dairies within the municipality were kept satisfactorily, and ... the dairy stock were healthy and clean'.¹⁹²

¹⁹⁰ *Armidale Express*, 18 January 1939, p.4.

¹⁹¹ *Armidale Express*, 16 October 1946, p.4.

¹⁹² *Armidale Express*, 11 January 1895, p.3.

The Dairies Supervision Act 1901 provided for the quarterly inspection of dairies and dairy cattle by a council officer. In October 1906 inspector Brown reported that he had inspected all dairies and found them to be all well kept and in good order. Dairies inspected were Mrs Fitzgerald (18 cows); Howard Bros (14); E.H. Marshall (9); W. Mitchell (10); W. Thomas (9); A. Evan (7) and Mrs Stinson (4). In 1921, the health inspector licensed sixteen dairymen and fourteen milk vendors and reported there were no cases of infectious diseases at the dairies.

Council expressed its disapproval in July 1930 of the change in control of dairies from the Health Department to the Department of Agriculture.

Armidale and Tamworth Councils expressed a desire in August 1937 'that all raw milk distributed in country centres be purchased from tubercular-free herds'.¹⁹³ Mr Drummond MLA promised he would advise the Minister for Health of council's concern. The Armidale milk vendors approached council in August 1938 in an attempt to have herds from which their milk supply was drawn as being declared tubercular free. But council was informed in November 1938 by the Department of Agriculture that it did not have the men available to ensure that the municipality was a tubercle-free area for a dairy herds.

Armidale milk vendors approached council in August 1938 for support in having tests carried out to ensure their herds were T.B. free. That month, council sought assistance from the Department of Agriculture to test the herds of E.S. Tombs, an Armidale dairyman. Action was also taken to purchase a milk sediment tester to be used by the health surveyor. By December 1938, there were thirty vendors registered to sell milk within the municipality and twelve dairies within the municipal area.

Mr C.J. King, the district veterinary officer advised council 'that ministerial approval had been obtained for the creation of a tuberculous protected area' for the Armidale municipality and 'for the tuberculin testing of herds'.¹⁹⁴ A week later Glen Innes Council sought co-operation of the Armidale, McIntyre, Guyra and Tenterfield councils in the testing of herds for T.B. but health surveyor, L. Brown 'did not see any advantage to be gained by co-operating'.¹⁹⁵ In October 1947 the health surveyor informed council that 800 cows which supply the city with milk had been tested for T.B. Five infected cows had been destroyed and Armidale's milk was now certified as T.B. free. Council was assisted by the Armidale Pasture Protection Board's stock inspector and tests were to be repeated in 1948 and 1949 then every two years.

Nearly 600 cattle were tested in the T.B. free area in 1953 and no reactors were found. Initially the Department of Agriculture provided testing of cows free but

¹⁹³ *Armidale Express*, 1 September 1937, p.7.

¹⁹⁴ *Armidale Express*, 11 June 1947, p.4.

¹⁹⁵ *Armidale Express*, 18 June 1947, p.8.

in June 1954 council agreed to the department's proposal to charge £10 per hundred cows. The health surveyor R.E. Esdaile announced in December 1962 control of all milk rested with the Milk Board and council would no longer take an active part in T.B. testing of cows apart from house cows.

Public Health in Armidale

A smallpox scare emerged in Armidale in July 1913 and the Secretary of the Board of Health made available sufficient lymph to establish a public vaccination depot. Initially the British Medical Association volunteered its services and Ald. Kearney deputised the Town Clerk, Mr Ayling to establish the depot. The local doctors felt that the scare was unfounded and offered to vaccinate only those patients who could not afford to pay, free of charge at the hospital.

Following Health Department instructions concerning influenza, Dr. W.E. Harris, Government Medical Officer inspected the public school buildings in January 1919. He reported to council the buildings were suitable for housing a large number of patients; the Red Cross and Voluntary Aids be asked to prepare to nurse the sick and volunteers be inoculated straight away. A public meeting convened by the mayor and attended by a large attendance of residents in January made preparations for a possible outbreak of influenza.

In January 1919 the health inspector reported that in 1918 there were twenty nine cases of infectious disease including: one case of enteric fever; two scarlet fever; and twenty six cases of diphtheria. Prior to that there were ninety five cases in 1916 and seventy eight cases in 1917.

In September 1921 the health inspector, W.M. Fetherstone allowed the *Armidale Express*, 24 September access 'to the documents defining the duties and powers of the citizen as well as those of the local authority (City Council)' because of the concern about the rat nuisance.

The report of the health surveyor presented to Council in January 1931 indicated there was a big increase in infectious diseases during 1930 as compared to previous years. Diphtheria and Scarlet Fever were significant diseases in Armidale during the 1930s and a report published in the *Armidale Express*, 19 January 1938 showed the extent of diseases from 1933 to 1937:

	1933	1934	1935	1936	1937
Diphtheria	25	24		10	22
11					
Scarlet fever	7	2		5	4
10					
Puerperal septicamemia				1	
Poliomyelitis			4		

In 1936 the incidence of diphtheria was high throughout the state and Armidale was not spared. Concerned about the diphtheria epidemic the correspondent in the *Armidale Express*, 16 September 1936 stated: 'There has been a measure of tardiness in dealing with the matter by the City Council, if not by its officers, but regrets are vain, and it is hoped that no further valuable time will be lost'.

Although council received information in June 1938 that there had been a marked decrease in the notification of diphtheria, council decided to continue the scheme. Health Inspector L. Brown tabled the incidence of diphtheria in Armidale from 1935 to June 1939; 1935 ten cases; 1936 twenty two; 1937 eleven; 1938 five and twelve in 1939. He reported 'of sixty cases occurring, 73.32 per cent. of them were in children from 1 to 15 years of age, or pre-school to school age'.¹⁹⁶ The State Government informed council in November that assistance will be provided to local government for diphtheria immunisation programs but in 1939 only ninety five children were immunised and in 1940, seventy five.¹⁹⁷

Sixty one infectious diseases were notified in 1941 and immunisation against diphtheria was given to 116 children. This was the sixth year of operation. Aldermen expressed concern in March 1943 about the spread of diphtheria and decided to support the September immunisation programme. Later council withdrew its support but the decision was rescinded and the campaign placed in the hands of the health surveyor after the Armidale Hospital declared its support for the campaign. Following council's request, the Minister for Health 'promised consideration would be given' and action 'taken to control the spread of diphtheria and tuberculosis'.¹⁹⁸

Acting on the advice of council, the health surveyor provided a detailed report on the prevalence of rats in Armidale to the *Armidale Express*. The report showing the best means of destroying the pests was published in the *Armidale Express*, 19 April 1944.

Believing that mass immunisation 'created an anxiety neurosis', the municipality of Mascot contacted councils seeking an end to mass immunisation. In considering the matter Armidale City Council felt that their immunisation scheme was satisfactory and 'suggested that immunisation be declared compulsory'.¹⁹⁹ Following the Department of Health's appeal for council support for a publicity campaign for the immunisation of children, Ald. L.E. Dawson expressed concern over the 'Department of Health's reluctance to have diphtheria immunisation made compulsory' at a Council meeting held in February 1946'.²⁰⁰ At the Local Government Conference held at Grafton in October 1947, Ald. L.E. Dawson

¹⁹⁶ *Armidale Express*, 7 June 1939, p.8.

¹⁹⁷ *Armidale Express*, 11 December 1940, p.8.

¹⁹⁸ *Armidale Express*, 5 April 1944, p.5.

¹⁹⁹ *Armidale Express*, 14 November 1944, p.8.

²⁰⁰ *Armidale Express*, 6 February 1946, p.8.

proposed that immunisation against diphtheria be made compulsory but the proposal was defeated seventy five votes to seventy.

The reserve set aside for a mental hospital was still available in November 1948 and the Armidale City Council 'decided to press for the establishment of a mental hospital at Armidale'.²⁰¹ The Minister for Health, C.A. Kelly in reply to questions from D.H. Drummond doubted whether the medical profession would wish to go there.

The changing incidence of infectious diseases for the period 1951-1952 was published by the health officer in his 1953 annual report.

Infectious diseases	1951	1952	1953
Polio	22	2	5
Diphtheria	Nil	Nil	2
Scarlet fever	1	Nil	1
Encephalitis			1

Diphtheria immunisations in 1952 were twenty and forty nine in 1953. Council expressed its concern about the small numbers.

The Mayor, Ald. W.P. Ryan was the first to be x- rayed at the N.S.W. Anti-T.B. Asociation's clinic held in the Literary Institute in July 1951. Four thousand bookings were taken for the campaign.

Despite some concern by Ald. R.B. Madgwick, the City Council took action to co-operate with the government in the national poliomyelitis campaign in April 1956.²⁰² In the following month, the Armidale Lion's Club 'asked for the responsibility of providing for 'preschoolers 'and for those attending the public schools in the city'.²⁰³

Some friction between the Lions Club and local doctors concerning the anti-polio campaign was discussed by council in June 1958. That August a joint meeting of the City Council, Dumaresq Shire and Lions Club determined that the club would only take a minor role in the campaign. The conference recorded the appreciation of the work of the club in holding the eleven clinics from July 1958 to July 1959. It also recommended that all future adult clinics would be arranged and conducted by the City Council; the Dumaresq Shire would provide clerical assistance and the club voluntary workers at the clinic.

In 1964 monthly immunisation attendances at council clinics averaged 150 to 160 whilst injections given during the year numbered 1764. During 1975 council held

²⁰¹ *Armidale Express*, 10 November 1948, p.8.

²⁰² *Armidale Express*, 18 April 1956, p.4.

²⁰³ *Armidale Express*, 30 May 1956, p.8.

monthly immunisation clinics to give 703 doses of Sabin Vaccine. Clinics had also been held to immunise against whooping cough, diphtheria and tetanus.

Control of Mosquitoes

The proprietors Coroneo and Sourry, provided the Arcadia Theatre free of charge to council to screen the film 'Mosquitoes' from the publicity officer, Department of Public Health, Sydney. Co-operation was also sought with the Parents and Citizen's Association and screening of the film took place at the Arcadia on 20 November 1929.

In October 1932 the acting health inspector was directed to take all necessary steps to assist in preventing the breeding of mosquitoes. Action continued throughout the 1930s and in October 1939 the health surveyor issued a detailed eradication program for mosquitoes which involved: oiling of all stagnant pools; house inspections; the supplying of material to schools as well as the preparation of press articles, display posters and the printing of circulars. In November 1938 a man was employed 'to treat all pools of stagnant water in the municipality to eradicate mosquitoes'.²⁰⁴

Prior to 1938, council placed £25 each year on the estimates for mosquito prevention. When relief labour was available, a gang of men was employed to fill in puddle holes or drains, Once this employment scheme disappeared attention had turned to the treatment of waterholes with the use of kerosene. In September 1938 council allocated £30 on a clean-up campaign to prepare for the 'Back to Armidale' celebrations but also 'directed chiefly at the mosquito nuisance'.²⁰⁵ In May 1939 council decided to seek co-operation with the Dumaresq Shire to check mosquito breeding and to inform residents of their responsibilities.

Many Armidale residents sank wells for a water supply and in March 1943 Ald Wilson drew attention to the continued mosquito menace and stated 'Council should have a register of underground tanks'.²⁰⁶ At that stage the Dumaresq Creek was treated daily and the alderman felt that council should ensure that owners carried out their duties regarding breeding grounds. Three years later the practice of dealing with mosquitoes continued and it was reported 'Oiling of the creek to prevent breeding of mosquitoes had commenced'.²⁰⁷

Fluoridation of the Water Supply.

Council instructed the town clerk, W.H. Quin to ascertain the annual cost of the fluoridation of the water supply in January 1954. Based on a recommendation from the building, health and general purposes committee, council took action in February 1954 to seek a report from the Health Department concerning a proposal

²⁰⁴ *Armidale Express*, 23 November 1938, p.7.

²⁰⁵ *Armidale Express*, 14 September 1938, p.4.

²⁰⁶ *Armidale Express*, 16 March 1943, p.6.

²⁰⁷ *Armidale Express*, 6 March 1946, p.3.

to fluoridate Armidale's water supply. A special meeting of council was held on 12 September and a public meeting on 14 September 1956 to consider fluoridation of the water supply. At the public meeting Professor N.D. Martin, Head of the Department of Preventive Dentistry, presented a case for fluoridation. He was accompanied by Eric Gee, vice-president of the N.S.W. branch of the Australian Dental Association. In October 1956 council again deferred a decision pending further advice from the Department of Public Health.

The Fluoridation of Public Water Supplies Act 1957 authorised and regulated the addition of fluoride to public water supplies as well as the payment of subsidies to assist the installation of the necessary equipment. Following information that the State Government had passed legislation making fluoridation of water legally possible, the city engineer was asked in March 1958 to prepare a report.

In September 1959 action was taken to form a sub-committee of dental, medical, university and council representatives to determine the economic and technical considerations resulting from the fluoridation of the water supply. The committee which consisted of Professor R.H. Stokes (chairman); Dr. F. Dudley; B. Burns (dentist); town clerk R.A. Browne; city engineer P.G. Agnew and city health surveyor R.E. Esdaile submitted a report to council in the early 1960s. In August 1962 council adopted in principle the fluoridation of the water supply and agreed to consider costs in the 1963 estimates. Council reaffirmed the decision to fluoridate the water supply in March 1963 provided the State Government met the full costs but by January 1964, it had not been possible to obtain the necessary funds. Council felt that the Department of Health should meet the full capital and running costs. In March council again agreed to fluoridate the water supply provided 'the State Government instal the plant and pays the full running costs'.²⁰⁸ But in June 1965 council again deferred a decision on fluoridation until the end of the year.

A motion calling for a new report on fluoridation was defeated in council in May 1966 but council affirmed the decision for a referendum on fluoridation in November. A local government by-election was held in February 1967 and a poll of electors was held to ascertain voter's views on the fluoridation of Armidale's water supply. Of a total of 5 044 electors, 2 439 voted yes whilst 2 441 voted no with 164 informal votes. Concerned at the result the *Armidale Express*, 13 February 1967 commented: 'had the city not been deluged with such a flood of propaganda from sources outside the district, Armidale would have voted "yes" by a substantial majority'. Two weeks later, council deferred a decision until October because of the numerous motions and amendments moved in the debate. Fluoridation of the city's water supply was rejected in 1967.

In November 1969 Ald. Holmes attempted to have the debate reopened but it was not until October 1970 that health surveyor D.M. Crawford recommended that council reconsider fluoridation. In December council took action to set aside

²⁰⁸ *Armidale Express*, 13 March 1964, p.6.

\$6500 in the 1971 budget for fluoridation. A move by Ald. Chappel to delete the allocation was defeated by six votes to four with one abstention and a motion by Ald. I.P. Callcott for a referendum was defeated six votes to five. Plans and specifications for fluoridation equipment and filtration plant were forwarded to the Public Works and Health Departments for approval in December 1971.

Following a heated debate twelve months later, the Mayor Ald. D.A. Hewitt used his casting vote to approve fluoridation at a council meeting held in November 1972.

The Gara Scheme

Estimated to cost £95 000 the augmentation scheme involved the construction of a concrete weir at the Gara River; a rising main to pump the water from the Gara to a filtration plant constructed at North Armidale ; a storage plant with a capacity of one and a quarter million gallons and the renewal of the Puddledock pipe line.

Country Towns Water and Sewerage Act 1880

These provisions ended 1935.

Country Towns Water Supply and Sewerage Debts Act 1937- facilitated debt repayment.