

**Adversity and Identity: A history of
Rockhampton's domestic water supply 1861-
2014**

James Lionel Lindley

BA, BB, MM

*Submitted in partial fulfilment of the requirements of the Master of Letters in
History*

School of Education and the Arts

CQUniversity Australia

24 July 2015

18,000 words (approx).

Declaration

I declare that this Dissertation has not been submitted previously to any University for a Degree or Diploma. To the best of my knowledge, this Dissertation does not contain any previously published material written by any other person except where the correct referencing has been made.

Signature Redacted

Student Signature:



Date: 23 JULY 2015

Abstract

In history, the progress of a city's water supply often parallels the growth of the city, and in Rockhampton's case, also reflects a number of adversities that the local councillors had to overcome. This dual local and water history dissertation explores the history of Rockhampton's water supply. In doing so it engages with themes within local history such as politics, local government, adversity, resilience and identity. This history also reveals patterns of local power relations. These themes are set against the backdrop of broader Australian history in order to provide context.¹ Rockhampton sits astride the large Fitzroy River, but despite this fortune of geography, the city has had a history of challenges in securing a safe and reliable water supply. The forethought of mayors and local government officers was an integral feature of directing Rockhampton away from using unhygienic lagoon water, to having possibly one of the safest and best water supply systems in Australia, and this can only be appreciated by understanding the history of this local area. The development of Rockhampton was a phenomenon unlike most towns in Queensland. The duffer's gold rush at Canoona, bringing in hundreds of people almost instantly, prevented Rockhampton developing slowly like other towns, which depended mainly on agriculture. The challenge for the leading citizens in a new town that virtually grew overnight was to source adequate drinking water for a town on the bank of a salty river.

Local history narratives like this rely on the stories of people in the area. This local history narrative encompasses some local political history, although Councillors were not politically aligned in the early days of Rockhampton. The significant water history events that are explored in this thesis include the following, and each represents progress in ideas and technology. The first resolution passed by the first Council in 1861, was to apply to the Queensland Colonial Government for permission to cart water from Yeppen Yeppen Lagoon, later known as Yeppen Lagoon as the town water supply. In 1875 a more sophisticated reservoir was built to supply water to approximately 1,400 houses with lagoon water and by the 1926, a pumping station and water treatment works were built at Yaamba and potable

¹ Beverley Kingston, "The Use and Functions of Local History," in *Locating Australia's Past: A Practical Guide to Writing Local History in New South Wales* (Kensington: University of New South Wales Press, 1988).

water was piped the thirty-five kilometres to Rockhampton. In 1970 a barrage was built across the Fitzroy River at the “Rocks” to prevent tidal salt water contaminating the fresh Fitzroy River water. Subsequently, a new pumping station and water treatment works were built within the city at Glenmore in 1971. The thesis argues that the people who progressed Rockhampton’s water supply faced adversity in achieving a continuous articulated potable water supply for the city. The city is adjacent to a saltwater river, yet the incremental progress made encouraged large businesses and even adjacent towns to eventually flourish, as well as helped to green Rockhampton. Furthermore, this water history shows Rockhampton’s distinctive identity when it obtained its iconic Council-owned Barrage.

Contents

Declaration	2
Abstract	3
Contents	5
Acknowledgements	6
List of Illustrations	7
Significant events and developments	8
Warning	9
Introduction.....	11
Chapter 1: <i>A most essential necessity</i> : The early days of lagoon water, 1855 - 1919.....	15
Chapter 2: A grandiose idea: Yaamba pumping station, 1919 - 1949.....	32
Chapter 3: <i>A grand project</i> : The Barrage, 1949 – 1998	47
Chapter 4: <i>Making water</i> work: Ideas to harvest and store water and flood-proof Rockhampton	56
Conclusion	60
Bibliography.....	62

Acknowledgements

I am pleased to be able to acknowledge the kindness and assistance that special people have given me during the research and writing of this thesis. I express my thanks to the staff of the library, CQUniversity, North Rockhampton Campus for their assistance in finding material, and especially for organising a replacement micro-film reader for the continuation of this thesis. I also thank the Mayor of Rockhampton, Councillor Margaret Strelow for expediting contact with various Regional Council departments and special thank you for Councillor Strelow's telephone calls to direct me to sources of information. I would also like to express my appreciation to Peter and Kay Baggett for sharing their stories of the Fitzroy with me.

I am grateful to Emma-Leigh Nissen for her assistance in obtaining photographs in difficult terrain, that as a disabled person, I could not access. The weekly meetings with Emma-Leigh brought sanity into my life and she encouraged me to persevere with the thesis. I am pleased to express a very special thank you to my supervisor, Dr. Michael Danaher for his understanding, his unfailing patience, his historical knowledge and his ability to motivate me when I felt that I could not complete this thesis. Please accept this as my personal appreciation.

Significant events and developments

1824 - Penal settlement at Brisbane established

1853 - Colin and William Archer 'discover' and name the Fitzroy River

1855 - William Wiseman, Crown Lands Commissioner, arrives in Rockhampton

1856 - First census of Rockhampton taken, (35 white people counted)

1858 - Gold discovered at Canoona, near Rockhampton

1858 - 25 October, Rockhampton proclaimed a "town or village"

1858 - Rockhampton is surveyed & first land sale occurs

1859 - Colony of Queensland proclaimed

1860 - Rockhampton acquired its restricted municipal status

1861 - First Council elected in February

1875 – Water turned on from the Reservoir on the Range

1926 – Rockhampton City Council opens the Yaamba water supply scheme

1954 - Census records 41,283 people in Rockhampton

1970 – Barrage across the Fitzroy River opens

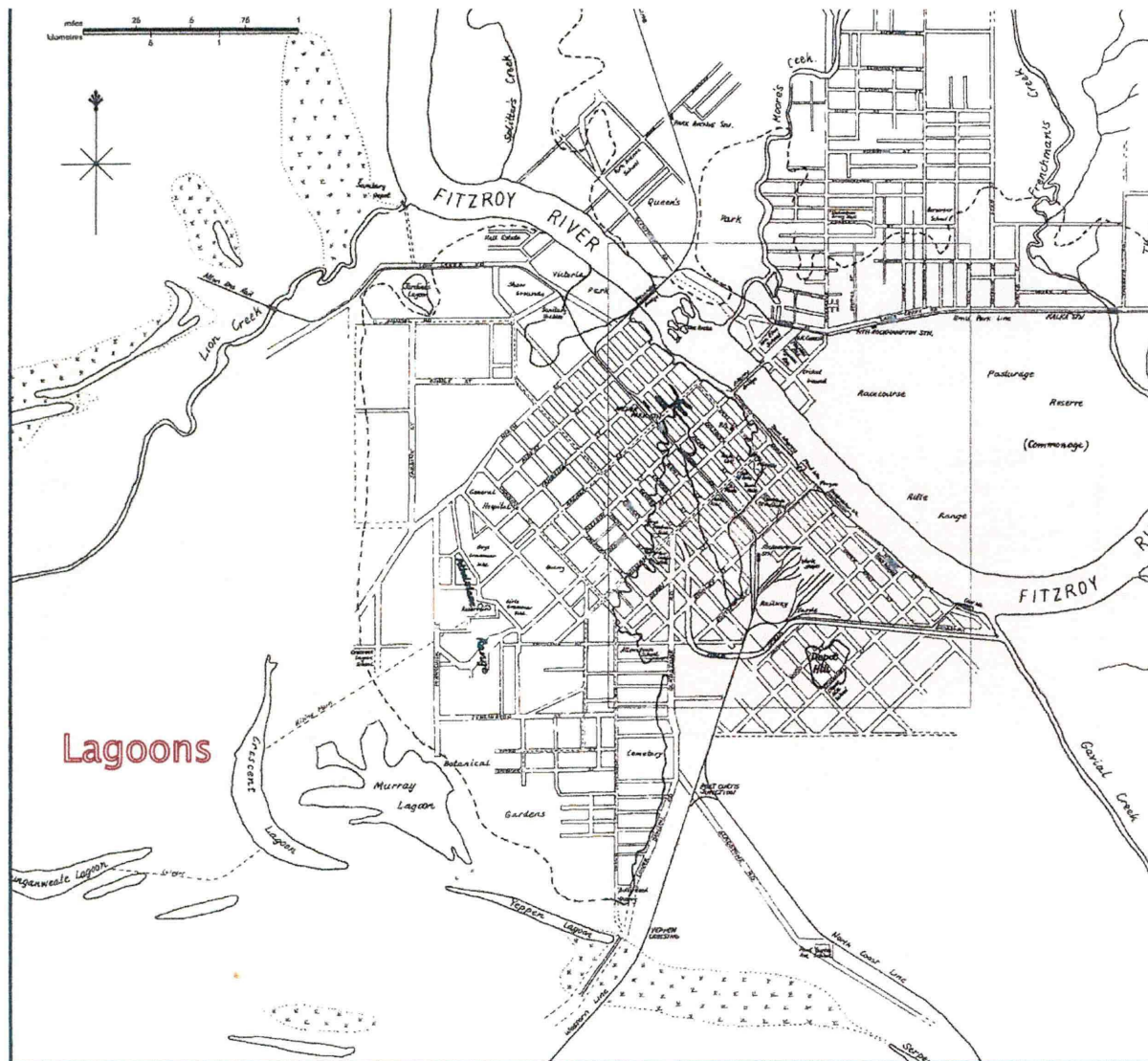
1971 - Glenmore Treatment Plant commissioned

2014 – Rockhampton's population reaches 83,629

Warning

At various times throughout the text, I have used language that might cause offence to various ethnic groups and to the First Australians. This language has been used historically, to give depth and meaning to the feelings and understanding of people long dead. For example, in some cases, words like 'businessmen' rather than 'businesspeople' are used because that was the language of that time in history; Aboriginal men are referred to as 'boys', Aboriginal women as 'gins' and Aboriginal people as 'blacks'. Some of these terms are offensive today, but their use is justified because of historical grounds and the colloquialism of those times and should not be taken as a personal insult. I acknowledge the Darumbal Aboriginal people of Central Queensland and in the text; I have used some of the names they gave to geographical features in the Central Queensland area.

Figure 1: Fitzroy River, with Lagoons on the south side of the city



Source: Adapted from Barbara Webster, *Marooned*.²

² Barbara Webster, *Marooned: Rockhampton's Great Flood of 1918* (Indooroopilly: Cooperative Research Centre for Coastal Zone, Estuary and Waterway Management, 2003).

Introduction

Rockhampton's first water supply was making people sick, and even killing some, until the arrival of an extraordinary doctor. The idlers, unkempt children as well as their rough and ready parents must have been startled to witness the arrival in 1861 of a well-dressed young man who marched down the gang-plank of a schooner newly arrived from ports south. Doctor William Callaghan had arrived at the canvas-tent and bark-hut outpost on the banks of the Fitzroy River, hundreds of kilometres from the Queensland Colonial Capital of Brisbane. When word that he was a Doctor of repute circulated, and that he was here in Rockhampton to stay, the mothers of the sick children and others must have been relieved. Doctor William Callaghan is one of the first of the Rockhampton identities who encountered some of the adversities that beset the fledgling town in terms of a safe and continuous water supply, and was influential in progressing changes. It was going to be many years later when the local authorities were able to overcome these kinds of water supply issues and provide Rockhampton with safe and continuous water from the adjacent river rather than rely on unhealthy lagoon water. Doctor Callaghan's persistent partitioning to Councillors to improve water quality did not eventuate during his lifetime. Doctor William Callaghan is merely the first of the Rockhampton identities that struggled with the adversities that beset the fledgling City of Rockhampton.

Local history studies are best set in a broader context of national and or state history. Bill Gammage, in one of his early local histories from 1986, *Narrandera Shire*, acknowledges the problem in his introduction to the work:

The great difficulty in writing local history is to relate local events and interests to Australian themes. Local people, although interested in their place in the world, expect the former; historians, although knowing that their generalizations about Australia urgently need testing by local studies, expect the latter.³

³ Bill Gammage, *Narrandera Shire*: (Narrandera: Narrandera Shire Council, 1986), xiii.

In this dissertation, Rockhampton's water history is set against the backdrop of regionalism, or more specifically, against Rockhampton's development as a regional hub. Without the ability to harness the water of the Fitzroy, it is arguable whether Rockhampton would have developed into the important regional city it has become. There was no European name for this spot on the Australian map where thousands of people were virtually marooned after the failed gold rush at Canoona sixty-five kilometres north, further up the Fitzroy River. Most of these people were without money, or horses for transport, and these early gold miners, with their women and children were in serious trouble. This spot on the banks of the salty Fitzroy River, 800 kilometres north of Brisbane, where people gathered for safety from the marauding Aborigines was as far upstream as small ships could navigate. There were no shops, no businesses and no substantial buildings.

Drinking water had to be carried from a distant lagoon, first by hand and later when horses became available, probably by sledge until horse drawn drays were built or imported. The only food available to the impoverished, stranded hopefuls would be bush-tucker. However, a suitable landing place for the small ships of those days was developed, so the settlement was perfectly sited to develop into an important regional city if sufficient and sustainable fresh water was available. The fresh water lagoons close by (see Figure 1), could only support minimal livestock and humans before they dried up during times of drought. The Archer brothers were aware that the lagoons dried out during drought because it was necessary to dig a well to get water for their camp in 1855.⁴ The adversity encountered by the stranded gold miners, who were to become the first citizens of Rockhampton, was almost impossible to contemplate. There were very few businesses or buildings and in some cases no money, and therefore no escape for the people who had arrived. There was very little food and even the foul water was in short supply. Rockhampton came into being by having the population and almost nothing else. This dissertation will examine the challenges for, and foresight of, the city fathers and councillors over time as they attempted to sure up a safe and continuous supply of water. As the population increased and droughts recurred, new challenges arose, and Rockhampton's water supply infrastructure developed accordingly, but it was never straightforward. Water

⁴ William Clark, "The Founding of Rockhampton and the Archer Brothers, 1917," *Journal of the Royal Historical Society of Queensland*, 1 no. 6, 1919, 327-337.

supply is a theme of importance to nation building and to regionalism, so this water supply history is a dominant national and regional narrative that needs to be told. The literature on Rockhampton's water supply history is quite sparse, therefore much reliance has been placed on Local and State Government records, newspapers and periodicals. Local histories both written at the time and since, such as Lorna McDonald's *Rockhampton*, have been used to obtain an insight into the local characters, their personalities, their assertiveness and stubbornness to get their own way.

Our Water Supply, a series of articles printed in *The Morning Bulletin* from 1924, has been most useful to gather knowledge of the Yaamba scheme. Local historian Lorna McDonald and other local historians have written much about the building of Rockhampton, but have not expanded on the theme of adversity that water, or lack of water, has played in the development of the city and surrounds. Water is, understandably, often a minor theme in these broader local histories. Another local historian, Carol Gistitin, has fairly recently written a chapter on the history of water supply to Yeppoon, but not on Rockhampton. Bores supplied nearby Yeppoon with water until 1955.⁵ After that water came from Water Park Creek until the Livingstone Shire Council tapped into the Fitzroy by 2009, which was a legacy of the Barrage. This research will uncover the many difficulties encountered by the citizens of Rockhampton in their attempt to acquire enough safe water to drink and for the city to grow. Rockhampton was only a modest but growing town in 1861 when the population realised that the nearby fresh, but quite unhygienic lagoon water was the only alternative to tank water storage. The methodology employed in this dissertation is empirical. Rockhampton Council archival records, newspapers, local and regional history specialist books and periodicals provide the main sources of primary and secondary evidence about specific issues. This is a significant study because it offers a more complete history of Rockhampton's articulated water supply from the birth of the town to the present day. The narrative style of writing suits this study and the use of photographs enhance the thesis by providing visual representation of the development in a chronological order. This study is guided by the local history theme of resilience in the face of adversity. The thesis highlights the main challenges and hurdles that had to be overcome in order to supply water

⁵ Carol Gistitin, "An urgent necessity: Town water supply and sewerage", in *Community, Environment and History: Keppel Bay Case Studies*, eds. Steve Mullins, Mike Danaher and Barbara Webster (Central Queensland University Press, Rockhampton, 2006), 113.

to the growing regional city of Rockhampton, as well as highlighting the foresight of the individuals and Councils, as well as significant engineering projects.

Chapter One explores the challenges that the forefathers of Rockhampton faced in securing a safe and reliable water supply. It covers the period from the time Europeans began living on the banks of the salty Fitzroy River until the work on the Yaamba scheme began after the Great War. From these humble beginnings, we will see how Rockhampton's water supply infrastructure became more sophisticated and set against a backdrop of some unique problems that had to be overcome. Chapter Two covers the period from 1919, when people realised that there was a serious water shortage in the township and drastic action was needed if the town was to grow and prosper. The first sod was turned in 1924 to signal the beginning of a herculean task to pipe water to the distant township of Rockhampton from Yaamba, situated upstream and on the banks of fresh water. Though most local residents desired this pipeline, they also realised the enormous challenge and costs involved. Thirty-five kilometres from Yaamba to Rockhampton was a dreadfully long way in the days of mostly horse-back or horse and buggy travel, and the scheme was going to be very costly. Chapter Three considers the reasons why the decision was made to source fresh water from within the city limits, which resulted in the building of the iconic Barrage between 1966 and 1970. This satisfied Rockhampton's long-term water needs, and enabled the greening of the city to take place. Chapter Four explores issues in Rockhampton's water history in more recent times, and takes note of schemes designed to take more water from the Fitzroy for mainly agricultural projects around the city.

Chapter 1

A most essential necessity: The early days of lagoon water, 1855 – 1919

Naturally a city cannot exist without an adequate supply of fresh water. Although in 1853, a city was not a consideration of squatters Charles and William Archer and their party, as they sat astride their sweaty stock-horses on the crest of a range of mountains some fifty kilometres inland from the coast and some 800 hundred kilometres north of the former convict settlement of Brisbane.¹ From the top of the mountain range, the party could see a large river and a most beautiful grass filled valley that in the future would be called “Rockhampton”. After their discovery, some of the party remained while others returned south to gather their flocks for the long drive to this new grazing locale. There were nine Archer brothers according to William Clark.² When they returned on 10 August 1855, the Archer brothers were leading their flocks of sheep to the suitable grazing land they had earlier discovered, towards an area where explorer Ludwig Leichhardt believed a large river existed where all the interior tributaries that he had discovered and named hitherto, should flow into. The Archer brothers ‘discovered’ the river in 1853 and named it the Fitzroy in honour of the Governor of New South Wales, Sir Charles Fitzroy.³ With all those tributaries, the river carried a huge amount of fresh water.⁴ Their disappointment in finding the river they came upon to be salt water was relieved only by the numerous fresh water lagoons they had encountered nearby.

The two years from the time the Archers first saw the area until they returned in 1855, must have been filled with work and speculation because during these years, people began arriving and in 1855 the Land Commissioner arrived followed by the surveyors in 1858, and the first land sale in the area took place. The Archer brothers were aware of the number of

¹ Lorna McDonald, *Rockhampton: A History of City and District*, (St. Lucia, University of Queensland Press, 1981), 17.

² William Clark, “The founding of Rockhampton and the Archer Brothers, 1917”, *Journal of the Royal Historical Society of Queensland*, 1 no. 6, 1919, 327-337.

³ Ibid

⁴ Lorna McDonald, *Rockhampton: A History of City & District*, 2nd ed. (Rockhampton, Qld: Rockhampton City Council, 1995), 18.

rivers and tributaries that flowed into the Fitzroy because of the exploration of Ludwig Leichhardt, but they would not have been aware of the vast quantity of water that flowed to the sea during flood time. No doubt the first flood that the Archers experienced was in 1859, a few months after the duffer's gold rush at Canoona.⁵ The Fitzroy is one of Australia's largest rivers and a source of much fresh water, but in the early days, fresh water was difficult to access and then harness. The four major rivers that flow into the Fitzroy are the Mackenzie, with 1,150 kilometres of tributaries, Isaacs with 836 kilometres of tributaries, the Dawson with 1,227 kilometres of tributaries and the Nogoa with 953 kilometres of tributaries, and the Fitzroy's minor tributaries total 745 kilometres.⁶

The total of 4,911 kilometres of waterway to drain 144,174 square kilometres of land (almost the size of England) makes the Fitzroy catchment only second to the Murray Darling system in Australia.⁷ The Fitzroy River proved to be navigable and soon the Brother's ketch, the *Ellida*, was bringing in cargos of foodstuffs and returning to Gladstone laden with wool bales.⁸ The City of Rockhampton in Central Queensland was an afterthought. When the Archer brothers chose to settle at Gracemere in 1853, it was to establish a grazing property to run their sheep. The numerous fresh water lagoons and the suitable grazing land in the area would have been a delight to any passing squatter. The Archers were the first European people to see and claim the area. The fact that the Fitzroy River flowed gently to the sea only a few kilometres from their choice of a homestead site was a blessing. Supplies could be brought to the area by boat rather than through the trackless bush, and the wool clip from their flocks of sheep could also be dispatched by boat rather than the onerous overland route through the bush and mountains. The brothers chose a boat-landing place below a spur of rocks that prevented large boats from going further upstream.

This spur of rocks that is mostly covered by water at high tide was the reason for naming the small hamlet Rockhampton. The long stretch of the river from Rockhampton to the sea is navigable with care and, although many boats have littered the shallows in the past, many larger boats have completed the voyage without mishap. William Henry Wiseman was

⁵ A.E. Hermann, "The Fitzroy River and its Early Floods", CQ Family History Association Inc. <http://www.rootsweb.ancestry.com/~auscqfha/floods.htm>, (accessed July 17, 2014).

⁶ Ibid

⁷ Ibid

⁸ Lorna McDonald, *Rockhampton: A History of City and District*, 2nd. ed., 19.

appointed Crown Lands Commissioner for the district and it was he in conjunction with Charles Archer who suggested the name 'Rockhampton' in 1856.⁹ The naming of the place, Rockhampton, took place three years after Colin and William Archer 'discovered' the area. The name Rockhampton was first used on official correspondence in 1856 when William Wiseman informed the Chief Commissioner for Crown Lands that he favoured "Rockhampton" as a port.¹⁰ The census taken by H.W. Risien, bookkeeper for the Archer brother's homestead in 1856, indicated that two years before the Canoona gold rush, there were 35 white people in the area. The census taken in 1954, almost 100 years later, indicated that the total population was 41,283.¹¹ This remarkable population increase reflects the momentous gains in securing safe and reliable drinking water at the very least.

However, as local historian Lorna McDonald points out, the Rockhampton Council was "plagued throughout the first phase of its existence by an inadequate water supply".¹² Above the rocky barrier that gave Rockhampton its name, the river is again navigable for many miles. However, only small boats can traverse the narrow passageway between the rocks and the riverbank, near the southern bank. Figure 2 shows the barrier of rocks, looking down-stream from the Alexander Bridge, which prevented ships traveling further upstream on the Fitzroy River and were responsible for the name, Rockhampton. Had ships been able to navigate further upstream and the town established beside the fresh water, then perhaps Rockhampton would not have such challenges securing an adequate supply of water.

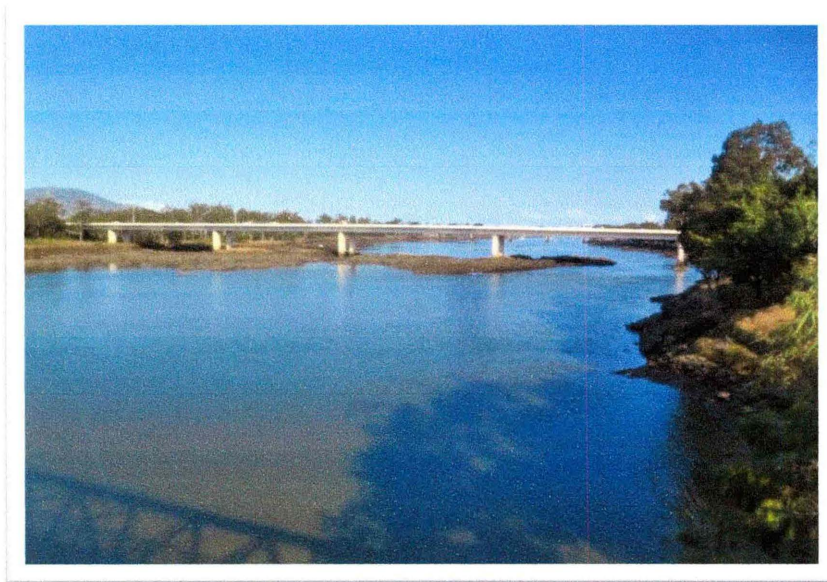
⁹ Matthew J. Fox, *History of Queensland: Its People and Industries*, Vol. III, (Brisbane: State Publishing Company, 1923), 197.

¹⁰ Lorna McDonald, *Rockhampton: A History of City and District*, 18-20.

¹¹ CQ Family History Association Inc. "Discovery of Rockhampton,
http://www.rootsweb.ancestry.com/~auscqfha/archer_bros.htm

¹² Lorna McDonald, *Rockhampton: A History of City and District*, 2nd. ed., 113.

Figure 2: The barrier of rocks in the Fitzroy River



Source: James Lindley, 2014

When the news of the brother's 'discovery' of the Fitzroy River and adjacent grazing land reached other parts of the colony, other settlers started to arrive to claim land titles. Numerous people began moving into the area when word of a gold strike in 1858 at Canoona, upriver from Rockhampton, reached the outside world. Over 15,000¹³ hopeful miners descended on the area twenty kilometres north of the Archer brother's wool loading docks on the Fitzroy River.¹⁴ When the gold strike proved disappointing, a duffer's rush, many of the hopeful miners were stranded by lack of money and sought whatever employment they could find.¹⁵

No doubt many tents and humpies were hastily erected close to the Archer brother's docks, because that was as far up-stream as large boats could go because of the bar of rocks that are a severe deterrent to navigation. The most immediate necessity for this hastily established bush camp was a reliable supply of fresh drinking water. The only fresh water available was from nearby lagoons and sometimes, when it rained, the water harvested from the roofs of the hastily erected shacks. The shantytown had been established in the

¹³ *Townsville Daily Bulletin*, 11 March 1954, 7.

¹⁴ Lorna McDonald, *Rockhampton: A History of City and District*, 2nd ed., 30.

¹⁵ *Ibid.*, 22.

area of the Archer brother's landing place because the Europeans thought that they had much to fear from the local Aborigines, and grouped together for defence. The Aborigines, who lived in the area of the Yeppen Lagoon, relied on the lily-bulbs and waterfowl that thrived in the fresh Yeppen water and other lagoons in the area. Reports of numerous Aborigines swimming in the lagoon for recreation and to obtain food did not please the Europeans who carted their drinking water from this same lagoon.¹⁶ The Europeans renamed it Yeppen-Yeppen Lagoon in those early days. The only other source of water was the stained supply of rainwater from the shingle and bark roofs of the hovels. The rainwater was difficult to harvest in those days, because the only receptacles available were wooden kegs and a few small square ship tanks of uncertain hygiene.

This then, was Rockhampton after the failed gold rush in those early days of 1858 to 1861, until the town Council was formed. Just five years after the Archer brothers first saw the area in 1853, Rockhampton was proclaimed a "town or village" on 25 October 1858.¹⁷ Queensland was proclaimed a separate Colony in December 1859.¹⁸ Municipality status was granted to Rockhampton on 15 December 1860 and on the 26 February 1861, six men were elected as the first town councillors, with John Palmer, the earliest resident, elected as Mayor.¹⁹ The Council was sworn in by the Police Magistrate, W. H. Wiseman who had been Land Commissioner when Rockhampton was surveyed. Wiseman and the new Mayor were soon to be in dispute over a fence that Wiseman had built at the Yeppen Lagoon.²⁰ The first resolution of the Council was to apply to the government to use Yeppen Lagoon as the official town water supply. Prior to that, water was carted from Emerson's Lagoon, opposite the site of the then, future Ulster Arms Hotel on Gladstone Road. Emerson's lagoon was drained to allow construction of the western railway line later on.²¹

Hundreds of tents and shanties crowded together on the southern bank of the salty Fitzroy River, occupied by men, women and children fearful of Aboriginal attack, starvation, thirst and disease. It was at this time that Doctor Callaghan arrived. William Callaghan, born

¹⁶ Lorna McDonald, *Rockhampton: A History of City and District*, 2nd. ed., 136.

¹⁷ *Ibid.*, 19.

¹⁸ J.T.S. Bird, *The Early History of Rockhampton: Dealing Chiefly with Events up till 1870*, 1904, 36.

¹⁹ *The Capricornian*, 5 July 1902, 9.

²⁰ J. Ryan, *Our Water Supply*, *Morning Bulletin*, Rockhampton, 1926, 8.

²¹ *Morning Bulletin*, 9 July 1936, 19.

in Ireland in 1832, was 29 years of age when he arrived in Rockhampton.²² The *Bulletin* reported that Doctor Callaghan was “painstaking and attentive” and he soon traced some sickness in children to the lagoon water they were drinking. Doctor Callaghan arrived in Rockhampton in 1861. He had practised in Melbourne previously and was quickly appointed Government Medical Officer and District Coroner. Doctor Callaghan must have been quite a character because J.T.S. Bird reported that it was “hard to think that he had been in practise for forty-three years, seeing him ride past on bicycle or horseback each day”.²³ Doctor Callaghan was instrumental in encouraging the Town Council to supply water from the Yeppen-Eppion Lagoon as the Aborigines had named it, because it was the most hygienic in the area.²⁴ Doctor Callaghan, being a trained medical man, must have been aware of the danger of drinking polluted water. Here in the wilds of Queensland, all he could do was to advise people. The townspeople did not have the ability or the money, or perhaps even the knowledge to purify water, so he speedily found himself with a growing practice. Clean drinking water was a most essential necessity, and a Council was formed to oversee the growing community. Later there were crude attempts to purify the lagoons, but these attempts were largely ineffective.

A town Council of six businessmen was formed in 1861 to oversee the immediate future and health and hygiene of a town without any planned infrastructure. One of the first projects of this Town Council was to regulate the water carriers, and on advice of the Government Medical Officer, Doctor Callaghan, to take water from the Yeppen Lagoon only, in order to prevent further sickness in children. Doctor Callaghan and the new Town Council at this point in time clashed with William Wiseman, whose authority as Land Commissioner appears to have given him a false sense of grandeur. When the Rockhampton Town Council wrote to the Queensland Government for permission to take water from Yeppen Lagoon adjacent to Wiseman’s property for domestic supply, Wiseman objected. Land Commissioner Wiseman, who had built his cottage on the southern end of the Athelstane Range overlooking the Yeppen Lagoon and the road to the south, fenced off his land adjacent to the Lagoon. Wiseman’s fence prevented the Council taking water from an easily

²² *Morning Bulletin*, 6 December 1924, 12.

²³ J.T.S. Bird, *The Early History of Rockhampton*, 28.

²⁴ Lorna McDonald, *Rockhampton: A History of City and District*, 2nd ed., 21.

accessible place.²⁵ At first, the Government supported Wiseman's right to fence off his property adjacent to the Yeppen Lagoon. He had, it appears, friends in high places because he had been presented to the Governor, Sir George Bowen, at a reception during the Governor's visit to Rockhampton on 10 October 1862.²⁶

The Mayor wrote to the Governor that, "an abundance of fresh water was a most essential necessity for the advancement and progress of a tropical city and that the Municipality of Rockhampton finds that access to the only permanent lagoon was prevented by the fence that Wiseman had built".²⁷ The government reply said it was Mr. Wiseman's land and the government could not see that the public had been denied water access with the only access denied being the use of Mr. Wiseman's 'stage', which is an access that we would call a 'jetty' today. The Mayor replied that Mr. Wiseman would not be troubled except that he had fenced the whole of the accessible portion of the lagoon.²⁸ Eventually the Town Council was permitted to take water from the lagoon but not before a protracted argument. This was the fledgling's town first official water supply source. The southern end of the lagoon, where the Council wanted to take the water from was at the southern end of the Athelstane Range where the track ran between Rockhampton and the Archer brother's property at Gracemere. It is now the main east coast highway for traveling from Brisbane to Cairns and from Rockhampton to Emerald.

When water was no longer available from Emerson's Lagoon, water was bucketed into casks on horse drawn wagons from the Yeppen Lagoon and delivered to households at the rate of two and a-half gallons for 1 penny (eleven litres for one cent).²⁹ However, local historian J.T.S. Bird informs readers that the cost was half-a-crown per cask of not more than fifty gallons and three casks was a load. Bags were placed over the top of the casks to reduce spillage and the delivered water was less than salubrious.³⁰

²⁵ Ibid

²⁶ J.T.S. Bird, *The Early History of Rockhampton*, 61.

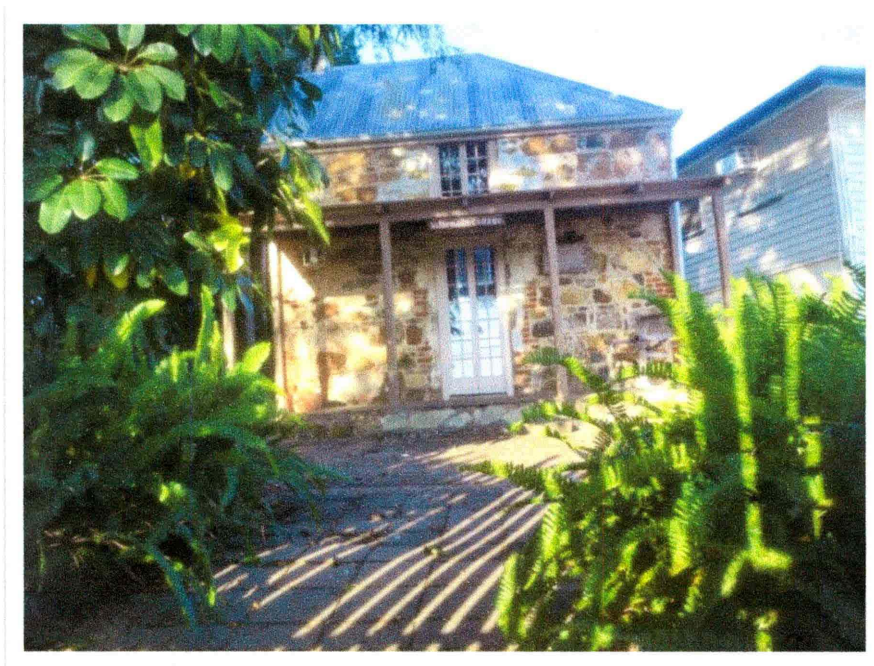
²⁷ J. Ryan, *Our Water Supply*, *Morning Bulletin*, Rockhampton, 1926, 9.

²⁸ Ibid

²⁹ J. Ryan, *Our Water Supply*, 11.

³⁰ J.T.S. Bird, *The Early History of Rockhampton*, 59-60.

Figure 3: Land Commissioner William Wiseman's cottage built in 1858, named Mount Athelstane in memory of an Anglo-Saxon King of England



Source: James Lindley, 2014

The only water available was lagoon water and that had to be carried many miles by horse wagon. When sufficient money became available much later on, a reservoir holding lagoon water was built on the Range and pipes were laid to reticulate unfiltered water to parts of the town. This was Rockhampton's first water supply infrastructure, and was completed in 1875.³¹ The Council realised that the adverse situation they were in was nowhere near satisfactory, but there seemed to be no other option. Wells were dug in an effort to find better quality water but although the quality improved somewhat, quantity failed dismally. Long before a bridge was built, some people crossed the river by boat to establish, what in the future, would be called North Rockhampton. The southern side where people were camped was to be called Rockhampton and there was no food or water unless they found it for themselves. The beautiful but salty Fitzroy River was in front of them, with its crocodiles and sharks, and the Australian bush and roving Aborigines behind them and very little food and water to sustain life. Their only lifeline to the outside world and safety, were the few boats that called, but only then if they had the money for passage. Instead of businesses

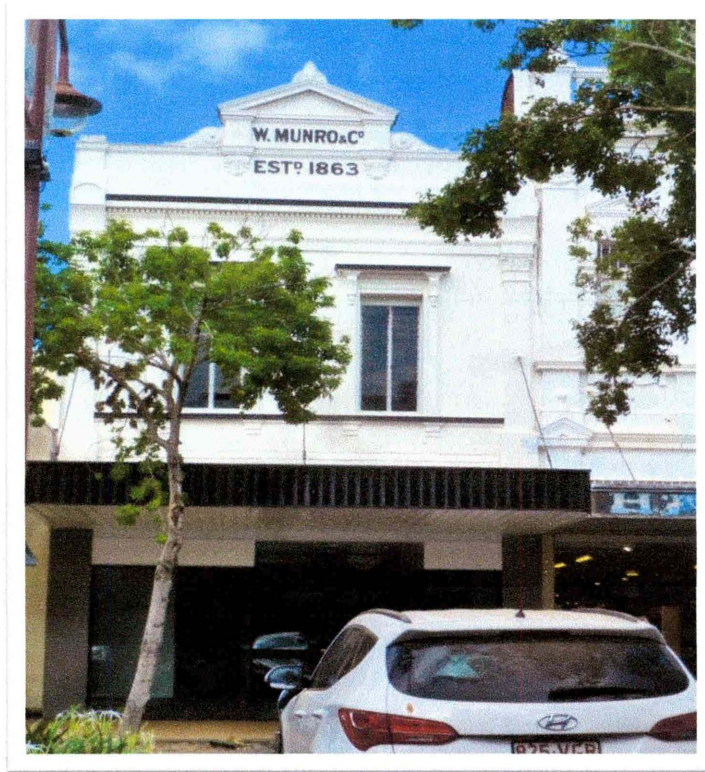
³¹ *Capricornian*, June 4, 1892, 7-8.

and agriculture bringing a population to an area, as a result of the gold rush, Rockhampton suddenly had the population but no businesses. The possibility of grazing land brought the few hardy pioneers, but the lure of gold had brought the fortune hunters. The first land sales took place in 1858 and those with sufficient money built their business and dwellings. With the population in place and land for sale, soon came more businesses. Many of the stranded miners gained employment on developing farms or in the growing town. There were shepherds, shop assistants, housemaids and labourers and some even began business as water carriers.

Horse and carts were used to carry fresh water from lagoons behind the Range to the new town (see Figure 1). This was the first challenge and is what gives Rockhampton's water supply history a point of difference from many other city water histories. The growing town was surrounded to the north by water in the form of a large tidal river, but it was salty up to the reaches above the town. Businesses were interested in establishing themselves and they, no doubt, expected the town council to supply the town with hygienic water so that even more people would be drawn to the town. One such business was W. Munro and Co., booksellers and stationers, who were still in business 150 years later in 2014. Two years after the first town council was formed, W. Munro and Co., built a new building to cater for the people of Rockhampton.³² The faith that these early business owners displayed in the future of the city, that had only been surveyed five years before, and was only a collection of hovels, is a testimony to the pioneering spirit and to the optimism at that time, and the belief that an adequate supply of water would be established.

³² *The Capricornian*, May 14, 1898, 34-35.

Figure 4: W. Munro's Book Shop, established in 1863



Source: James Lindley, 2014

The population census of the new Queensland colony taken in April 1861 revealed a population of 30,059. Brisbane's population of 6,051 saw the sexes being nearly equal, but found that Rockhampton had a population of 698, of whom 439 were male and 259 were female.³³ With a ratio of nearly 2-1, it would have been expected that those frontier women would be cared for to a certain degree. Their desire for fresh water as a basic necessity of life, particularly the health of their children, would encourage their menfolk to acquire better quality water than the questionable and stained water harvested from their shingle rooves of the hovels. In 1862 the Yeppen pump and stage were installed and *The Courier* reported that the Council has compelled all water transporters to take domestic supply water from Yeppen Lagoon. The correspondent from *The Courier* wrote that the Council deserved public thanks for this step, because Doctor William Callaghan, the Coroner, had

³³ J.T.S. Bird, *The Early History of Rockhampton*, 28.

traced some sickness in children to the previous water supply point.³⁴ The domestic water was so bad that the steam tramway that began running in 1909 was suspended indefinitely by the end of the year because impure water was choking the boiler tubes.³⁵ How strange it seems to us nowadays that town councillors failed to attribute the high sickness rate among children to the impure water supply.³⁶ More likely, the Council could not do anything about the sickness at that time because there was no other drinking water available. This change of water supply and the extra distance from the drained Emerson's Lagoon to the Yeppen Lagoon, led to the water-carriers increasing the price of a cask of water from one shilling and sixpence, 1s 6d (16 cents) to 2s 6d.³⁷ However, according to the Rockhampton City Council records, a load of water cost residents six pence and they state that the water was so contaminated with weeds and mud that charcoal or ashes were used to settle the dirt.³⁸

The Council ordered six of their own water carts in 1863 in an effort to check the extortionate charges of water carters who were reputed to cart the most deadly fluid, reeking with decomposed animals and vegetable matter that required charcoal to settle out the sediment. One Alderman who had been boating on the Yeppen Lagoon considered that it was as clear and beautiful as spring water, while an onlooker commented that it tasted and stunk beautifully.³⁹ The Yeppen Lagoon was not fenced so that cattle and horses could puddle the mud and leave unsanitary deposits. At one time a large group of 'blacks' was seen swimming in the Yeppen Lagoon. Reflecting the racism of the time, this prompted outrage and the comment; "Apparently the Council prefers the Yeppen Yeppen water with a soupcon of blacks in it, in order to give it a flavour and a good body. Whether the public taste will endorse this extra-ordinary preference on the part of the Council for black draughts is by no means certain. For our own part, we prefer the Yeppen Yeppen without blacks in it, young or old, male or female. We now pay for gin and water".⁴⁰

³⁴ "Rockhampton", *Brisbane Courier*, December 29, 1862, 2.

³⁵ Lorna McDonald, *Rockhampton: A History of City and District*, 118.

³⁶ *Ibid.*, 121.

³⁷ "Rockhampton: Yeppen Yeppen Water", *The Courier*, December 29, 1862.

³⁸ Rockhampton Regional Council,
http://www.rockhamptonregion.qld.gov.au/Council_Services/Fitzroy_River_Water/About_Us_history.
(Accessed August 8, 2014).

³⁹ J. Ryan, *Our Water Supply*, 13.

⁴⁰ *Ibid*

A report by the Government expert on municipalities regarding water supply, Mr. J. Brady, agreed with local Engineer, Mr. Thomas Burstall, that Rockhampton had ample water supply and needed the Government to loan enough money to build a reservoir and erect pumps.⁴¹ Unfortunately the government refused the loan so the Council erected another three pumps to cater for the water carriers.⁴² The city fathers had by now secured the right to take water from Yeppen Lagoon, so they installed a platform and pumps, and leased the water cartage rights. No doubt they felt confident the town would no longer lack fresh water, but in fact the water was foul, a great disadvantage to the town.⁴³ Large areas of farming land above the salty reaches of the Fitzroy River were quickly taken up and people kept arriving, among them stonemasons and builders. The sandstone deposits at Gracemere were mined and used as building material for many of the substantial buildings in Rockhampton that stand to this day. As the town expanded, supply of drinking water became more of a problem. Soon the town council realised that the health of the townspeople would be affected if a better and greater supply of water was not available. Eventually, steam pumps were installed to pump water from the lagoons behind Athelstane Range to a reservoir on Government Hill; now called Athelstane Range, or 'The Range', and pipes were positioned to carry water down to the town.

Apparently the water was not filtered until the Council built a gravel filter in 1884.⁴⁴ When the river flooded, the series of lagoons behind the Athelstane Range, which at earlier times formed the bed of the river it was believed, would fill with water, but in times of drought the water was in short supply. At the close of 1867, town surveyor and engineer, Thomas Burstall, proposed to pump water from Yeppen and Crescent Lagoons to two reservoirs on top of the Athelstane Range. However, in 1875, by an Act of Parliament, the construction of the Council waterworks did proceed and fourteen and a half years after Rockhampton became a municipality, the water was turned on.⁴⁵ The Rockhampton Waterworks Act of 3 September, 1875 resulted in the Council drawing water from the Yeppen, Murray, Dunganweate and the Crescent Lagoons and pumping it to the reservoir that had been built on the Athelstane Range and capable of holding 300,000 gallons, sufficient for four days'

⁴¹ *ibid*

⁴² *Ibid*

⁴³ Lorna McDonald, *Rockhampton: A History of City and District*, 2nd. ed., 113.

⁴⁴ J. Ryan, *Our Water Supply*, 22.

⁴⁵ *Ibid.*, 14.

supply.⁴⁶ The Athelstane Range is a short, low range between the Gracemere Flats in the west and the town and river in the east. The four large lagoons were on the Gracemere Flats with Yeppen Lagoon the most southerly and the shortest way to carry water around the end of the Athelstane Range to the town.

Thirteen thousand pounds was allotted to complete the waterworks; however another eleven thousand, seven hundred and sixty seven pounds was required to complete the scheme. An eight inch delivery main ran down William Street towards the river.⁴⁷ Four inch mains were laid down both sides of East Street from Archer Street to William Street and to various other locations, reducing to two and a half inches in parts in the town. Fifty fireplugs were installed along the main water lines.⁴⁸ The reservoir contained 300,000 gallons when full. Thomas Parker, the town surveyor, presented a report on the water situation, which he had been engaged for some time, to the Council meeting on Monday, 30 May, 1892. The Mayor considered it an "exhaustive and valuable document, on which Mr. Parker is to be highly complemented".⁴⁹ Furthermore, he stated that the report showed that the water supply at that time was inadequate and that even the supplies from the lagoons were doubtful. This warning was a catalyst to further plans to establish Rockhampton with a reliable supply of water, but nothing was straightforward. Alligator Creek, a distance of twenty-six kilometres, and only nine kilometres closer to Rockhampton than Yaamba, although a favourite source of water by some, would prove expensive and Mr. Parker doubted there would be an adequate supply for the growing town.⁵⁰ Therefore, a dam was considered upstream of the growing city at Stewart Creek, which is as far up river as Boolburra on the Dawson River. Because Stewart Creek does not run into the Dawson and Fitzroy Rivers at Boolburra during drought, a dam would have to be built. Mr. Parker estimated a dam could hold 937 million gallons but this would not last through a prolonged drought.

Adversity was dogging Rockhampton once again. The Report continues, "There are only three places on the river that would be possibilities; The Rocks, at Splitters Creek within the

⁴⁶ Ibid

⁴⁷ Ibid

⁴⁸ Ibid., 16-17.

⁴⁹ Ibid

⁵⁰ Ibid., 27.

town boundary, the Eighteen Mile Island and Yaamba”.⁵¹ The Rocks/Splitters Creek scheme would cost an estimated 483,000 pounds and the Eighteen Mile Island a similar figure because a dam would have to be built in either place to prevent salt water entering the system during drought.⁵² Even in 1860 a person who wished to remain anonymous, fortuitously proposed that a cement weir be built across the Fitzroy River just above the Rocks, at Splitters Creek to convert the length of the Fitzroy River from the Rocks to Yaamba into a huge reservoir of “pure and fresh water”.⁵³ However, Mr. Parker recommended Yaamba over the Splitters Creek scheme. His idea was to take the water from the southern side of the river at Yaamba and pipe it down the southern bank⁵⁴ (See Figure 5). Of course this scheme never eventuated because the Council disagreed, but although water was sourced from Yaamba, the water was piped down the northern side of the river and then crossed over to the south side via the bridges. Jason Plumb of the Rockhampton Regional Council commented that both the traffic bridges have water pipes slung under them.⁵⁵

⁵¹ Ibid

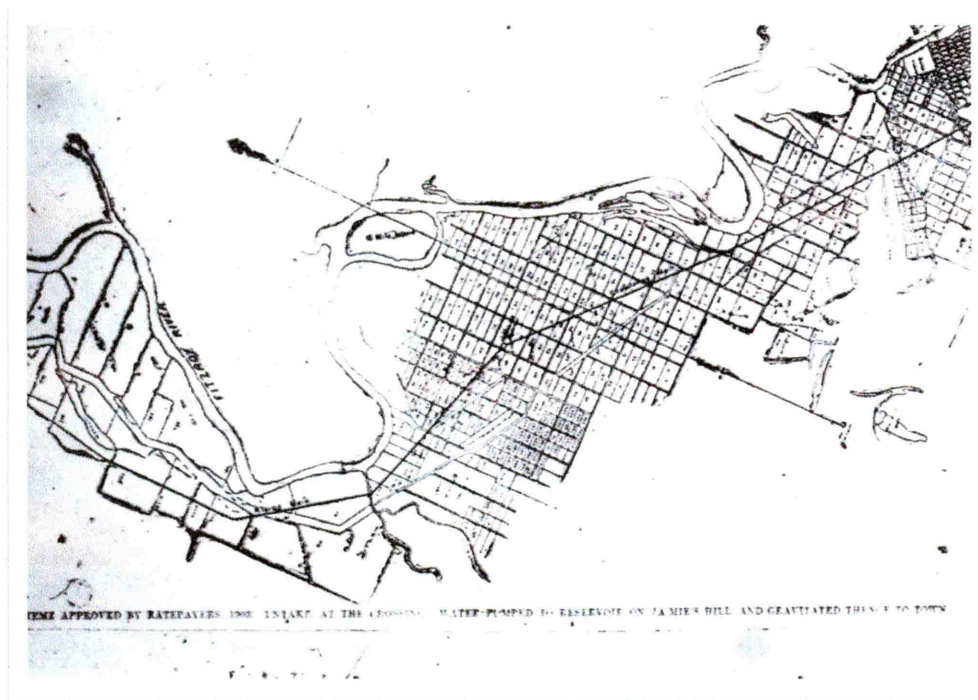
⁵² Ibid., 28.

⁵³ Ibid., 23.

⁵⁴ Ibid., 28.

⁵⁵ Jason Plumb, Coordinator Treatment and Supply, Fitzroy River Water. Interviewed by James Lindley, 17 June, 2015.

Figure 5: Proposed pipeline from Yaamba on the southern bank



Source: *The Rockhampton Morning Bulletin*, February 1, 1924

By 1883 a second reservoir was required on the Range at a cost of 3,111 pounds and when completed, there was sufficient water for the Council to open public baths in Bolsover Street across from the City Hall on 15 November 1883.⁵⁶ On that day, at the conclusion of business, all the Aldermen with their towels witnessed the Mayor jump into the pool; then the Aldermen followed. The Mayor then named the building, "The Rockhampton Swimming Baths" and toasts were drunk.⁵⁷ Possibly as an offshoot from the prudish Victorian times, mixed bathing was forbidden at the public baths, so women formed a Ladies Swimming Club and days were set aside for female only bathing.⁵⁸ Edward A. Smith took possession of the premises and charged an admittance fee of two pennies, but the lack of gaslights prevented the baths being opened in the evening. The absence of a partition to screen the baths from

⁵⁶ *Ibid.*, 19-21.

⁵⁷ *Ibid.*, 20.

⁵⁸ Lorna McDonald, *Rockhampton: A History of City and District*, 2nd ed., 115.

the entrance meant ladies would not attend until this was remedied. Five days later with the partition in place, the baths were opened for ladies for the first time.⁵⁹ According to the *Bulletin* at that time, “There was no longer any reason for the town youths to swim in the river risking attack by alligator or sharks”.⁶⁰

Alligators appear to have been the accepted name for salt-water crocodiles in those early days, because J.T.S. Bird reports that one “alligator” killed in the Fitzroy River was twenty three feet long (seven meters) and of immense girth.⁶¹ The joy of safe swimming was short lived because in 1885, the baths were closed due to lack of water.⁶² This problem of recurring intermittent water supply plagued the early councils, and had to be remedied. During 1884 a representative of a large engineering company visited Rockhampton and suggested that his firm build a filtering scheme for 4,000 pounds.⁶³ A noted physician advised that passing the water from one vessel to another was sufficient to filter water.⁶⁴ Although the Council did not accept the offer of a 4,000 pound filtration plant, they did build a pile of stones, covered with wire-netting to filter out the decaying vegetable matter.⁶⁵ The Council, it seems, was prepared to pay 3,111 pounds for a reservoir holding 300,000 gallons of water, but not 4,000 pounds to filter the water.

During the Government discussions in 1885, the member for Rockhampton, John Ferguson, suggested building a dam below the junction of the Mackenzie and Dawson rivers to form “a grand inland lake and irrigating the country by a grand canal coming down the Fitzroy, near Rockhampton. With a great head of water at a considerable elevation, it would flow through the main Fitzroy channel, supplying Rockhampton with abundant and never-failing supply of pure water”.⁶⁶ This was another grand idea to confuse the Council, a Council with little money and technical knowhow. In those days of 1887, the Traffic and Fire Inspector in Rockhampton held a Cambridge Senior Certificate, equivalent to year twelve

⁵⁹ “Our Brisbane Letter”, *Capricornian*, Rockhampton, December 15, 1883, 12-14.

⁶⁰ Lorna McDonald, *Rockhampton: A History of City and District*, 2nd. ed., 115.

⁶¹ J.T.S. Bird, *The Early History of Rockhampton*, 62.

⁶² Lorna McDonald, *Rockhampton: A History of City and District*, 2nd. ed., 115.

⁶³ J.M. Powell, *Plains of Promise Rivers of Destiny: Water management and the development of Queensland 1824-1990*, 1992, 17.

⁶⁴ Ibid

⁶⁵ Lorna McDonald, *Rockhampton: A History of City and District*, 2nd. ed., 22.

⁶⁶ *Capricornian*, August 13, 1895.

today, and was considered an educated man.⁶⁷ Some interesting 'Letters to the Editor' in 1896 show that the citizens of Rockhampton were very interested in obtaining a better water supply.⁶⁸

⁶⁷ Lorna McDonald, *Rockhampton: A History of City and District*, 2nd. ed., 115.

⁶⁸ *Capricornian*, 5 December, 1896, 26.

Chapter 2

A grandiose idea: Yaamba pumping station, 1919 - 1949

By the end of the 1800s, people were persistent in their demand that a new and better water supply was needed if Rockhampton was to become any more than a forgotten outpost in the Queensland bush. The name 'Town Council' was changed to 'City Council' in 1903.¹ Unfortunately a grand name change did not lessen the greatest adversity that Rockhampton faced at that time, the lack of continuous fresh water. Because many people were out-spoken on the subject is probably why the town council was so dithering. There was no easy and inexpensive way that a better water supply could be sourced. Henry Bridson, a resident since 1895, indicated that he had previously written to the Editor of the local newspaper in support of building a 'wall' across the river at the Rocks near Splitters Creek. He stated that Mr. Parker, the City Engineer, supported the idea but because of the cost of 80,000 pounds, Mr. Parker would not advise construction.² Answering letters from Henry Beak³ and Henry Mills, supported the construction of this 'wall', and gave their reasons.⁴ Other people were in favour of a dam at Boolburra where Stewart Creek joins the Fitzroy River or at Alligator Creek, closer to Rockhampton than Yaamba, or even at the Eighteen Mile Island in the Fitzroy River.

The situation saw engineers suggesting certain places to access water and then abandoning the ideas because of the costs involved, and residents having their own ideas of where to access water, but with no idea of the costs involved. Council appeared not to know what to do. At the time Council could do nothing to satisfy everyone except bumble along hoping that something would happen that would not cost much and at the same time allow them to please most people. Although councillors and the townspeople realised that a better and more permanent supply of fresh water was still needed, no one seemed to be able to decide where it should be taken from. There still was no councillor with the

¹ Lorna McDonald, *An Overview of Rockhampton's History*, 2003.

² *Capricornian*, 14 November, 1896, 10.

³ *Ibid*

⁴ *Capricornian*, 5 December, 1896, 26.

necessary leadership ability on the water issue and it seems not one councillor was prepared to make a decision and support his decision. There was not one particular incident that necessitated a new water supply, but the lagoon water was unclean and in short supply during drought time. Suggestions from building a large dam at "The Gap" upriver from Rockhampton, to building a dam at the rocks in the river at Rockhampton were still considered. However, these were ideas for the future when money would become available, and so for the time being, water from the reservoir on the Range, which was pumped from the lagoons, was all that was available and had to satisfy Rockhampton's water requirements.

The Great War in Europe, 1914 to 1918, affected progress by limiting money and labour. The climate of this untamed land, with its floods and drought brought heartbreak too. Perhaps it was fortunate that the *Brisbane Courier* newspaper was receiving correspondence from Rockhampton. Reports in that newspaper did keep people in the Capital aware of the problems in Rockhampton. An apparent conflict arose when the Mayor, Alderman J. Morrison chaired the Council meeting on the 7 April, 1916. There was a bare quorum to discuss a report from Mr. H.W. Parkinson, the City Engineer. Alderman C.O. Gough declared that the position was pretty clear to him that it would be a considerable time before whatever water supply scheme was adopted and passed. He considered that the Engineer should receive six months' notice, (which probably means 'notice of termination of employment'), or that some other arrangement be made, because it was absurd for the Council to continue going on like it was and no decision being made. Alderman G. Wilkinson complained that Alderman Gough was out of order and the Mayor ruled in Mr. Wilkinson's favour. The Mayor also considered that it was not right to go on with only a bare quorum. An apparently a fiery Alderman Gough stated, "I do not care about accepting any other responsibilities excepting my own".⁵

Even though there was a quorum available for the meeting, the Mayor was concerned that they might take some action on future water infrastructure that the other Aldermen might disapprove of. Alderman Renshaw agreed with the Mayor and Alderman F.O. Foster supported both the Mayor and Mr. Renshaw. Although three of the five Councillors present

⁵ "Water Supply Question", *Morning Bulletin*, April 8, 1916, 4.

appear to be against, it was decided to proceed with the business. The City Engineer's report was read by the Town Clerk and Mr. W.T. Dean suggested bringing Major Johnson, who he understood the New South Wales and the South Australian governments had approached for advice, to Rockhampton for advice about damming the Fitzroy River. It seems that the storm at the beginning of the meeting had not abated because the Mayor stated that if the City Engineer likes to pay to bring Major Johnson up, that he, the Mayor had no objection but the Mayor did not think that the Council should be bound to pay the 1,000 pounds to get him here.⁶ The Council paid the City Engineer 1,000 pounds a-year (\$2,000) and the Mayor did not see that the Council should pay another 1,000 pounds for another civil engineer.⁷ The City Engineer had made two different recommendations, one of damming the Fitzroy River at Rockhampton to supply domestic and irrigation water, and the other to take domestic supply from Yaamba, which did not require a dam. Apparently no decision could be reached at that time during the meeting, so other considerations on whether or not concrete water pipes could be manufactured and used were discussed. Dismay, bordering on panic, must have followed the January 1919 Rockhampton Council meeting because Councillors were informed that there was only two feet of water in the gauge at Crescent Lagoon, despite the 1918 flood. That lagoon would often silt up. Furthermore, they were told that if rain did not fall within the next two or three weeks, Rockhampton would be in "queer street".⁸ Probably this antiquated phrase meant that Rockhampton would have a serious water supply shortage. Just like the feeling of fear when a person places their last lump of coal on the fire, the Councillors must have felt fear in December of the same year, when they were informed that because of drought conditions, water was being pumped from the only lagoon in the area that could still supply the town. The *Brisbane Courier* reported in December 1919 that; "Rockhampton is wholly dependent for its water supply upon the springs at Dunganweate Lagoon".⁹ Not even this approach of disaster could stir the Council to decisive action although in 1920 the City Council did engage Mr. B. W. Holmes, a former New Zealand Government employee, to report on the Splitters Creek water supply scheme.¹⁰ By this time, Council found itself with numerous

⁶ Ibid

⁷ Ibid

⁸ *Brisbane Courier*, 31 January 1919, 4.

⁹ *Brisbane Courier*, 31 December, 1919, 7.

¹⁰ *Brisbane Courier*, 13 November, 1920, 12.

reports from various people, all suggesting different places to access domestic water but without the money, or the knowledge of where or how to apply to get money to implement any one idea. Mr. Parker, the City Engineer, recommended Yaamba, because the advantage of the Yaamba site was that it was above the reach of salt water, so a dam would not be required.

The disadvantage was that thirty-five kilometres of piping would be required to carry the water to Rockhampton. Mr. Parker estimated the finished cost; including an additional reservoir on the Athelstane Range would be 150,000 pounds, which he considered was within the power of the Town Council to meet, although it could not be met at that time. Mr. Parker estimated that the scheme would take seven years to build and the Council would be able to afford it then.¹¹ This must have been exciting news for Councillors and it appeared that the adversity that had in the past hindered Rockhampton's progress, had relented. The Mayor, F.A. Morgan reminded the Councillors that the report was a hopeful one and that a new supply was imperative because of the moderate season. The present population was on 'short commons', meaning that water restrictions were in place. The town would continue to draw its water supply from the lagoons behind the Athelstane Range until the Yaamba scheme was completed. During the previous seven years the annual consumption of domestic water usage had trebled and the Council could only hope that during the next seven year period until the Yaamba supply came online that the population increase would not be so great.¹² Tenders were called for machinery to pump more than double the daily requirements from the lagoons until that time. The error that the Council made in placing the pumping plant at Crescent Lagoon and not the Yeppen Lagoon had to be considered because of the seven year time frame.

Had the rain not come, there was a strong possibility that it would have been necessary to also pump from the Racecourse Lagoon.¹³ The Racecourse Lagoon got its name from the racecourse that had been used for horse racing in West Rockhampton, near what is now Connor Park Aerodrome. Rockhampton's first racecourse was laid out in 1862 and the Fitzroy Jockey Club was formed in 1863. No doubt, the flat land in that area, flat enough to

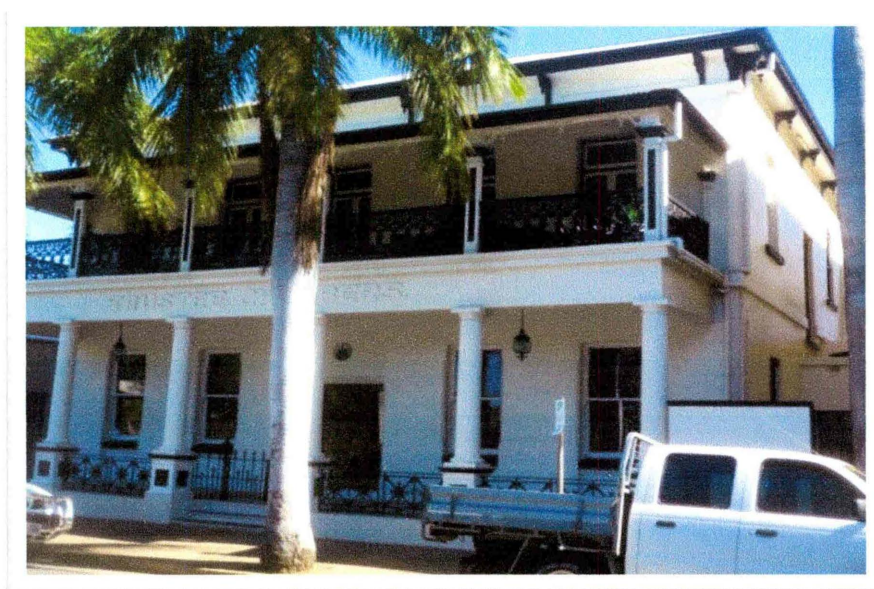
¹¹ *Morning Bulletin*, 4 June 1892, 3.

¹² *Ibid.*, 4.

¹³ *Ibid.*, 3.

become Rockhampton's Airport and a plentiful supply of water from the Racecourse Lagoon was a deciding factor.¹⁴ The Dunganweate Lagoon was formally called the Racecourse Lagoon because Rockhampton's first racecourse was there.¹⁵ As mentioned earlier, Doctor William Callaghan, the Government Medical Officer and Coroner, was well known for his love of horse racing as well as his concern of children's sickness caused by drinking lagoon water. When the Fitzroy Jockey Club lapsed in 1866, the Rockhampton Jockey Club was formed in 1868 and Doctor Callaghan was heavily involved, so the new racecourse was named 'Callaghan Park' in his honour.¹⁶ Doctor Callaghan was born in 1832, arrived in Rockhampton in 1861 and married the daughter of the Dean of Sydney, Miss Aimee Henrietta Cowper, in 1869.¹⁷ They built the now heritage listed building at 170 Quay Street, Rockhampton, known nowadays as The Trustee Chambers as their private home.¹⁸

Figure 6: Doctor Callaghan's eloquent home in Quay Street



Source: James Lindley, 2014

¹⁴ Rockhampton Racecourse Track Map, <http://www.racerate.com/Track%20Info/Rockhampton.htm> (Accessed 25 August, 2014).

¹⁵ J. Ryan, *Our Water Supply*, 21.

¹⁶ Heritage Register, <http://heritage-register.ehp.qld.gov.au/placeDetail.html?siteId=15577> (accessed, 25 August, 2014).

¹⁷ *Morning Bulletin*, December 6, 1924, 12.

¹⁸ Heritage Register.

As early as 1885 the town Council instructed Surveyor James to investigate the possibility of taking water from Alligator Creek. This idea had merit because about five miles of pipeline would be saved. The eleven-foot to the mile grade all the way from Alligator Creek to Rockhampton would give a good head of water to gravity feed to the reservoir on the Athelstane Range.¹⁹ Other inexpensive alternatives included deepening lagoons and digging wells. Although well digging had commenced, they were soon abandoned because of the fear that they would draw water from the Crescent Lagoon.²⁰ Obviously the Council, the engineers and the towns-people could not decide whether or not to take anyone else's advice. The project to dig wells was started then abandoned, and apparently there was not one leader that could be relied on to give directions. Rockhampton had no reliable leader. Such was the adversity that faced the progress of Rockhampton in those days. As far distant in time as 1885 when deep well sinking was considered in the north-western and far western districts for irrigation, John Ferguson, the Member for Rockhampton suggested a dam at the gorge below the Dawson and Mackenzie to form "a grand inland lake". Water from this dam would flow down the Fitzroy River supplying Rockhampton with a never-ending supply of 'pure water'.²¹

However, *The Morning Bulletin* was persistent in its demand that Yaamba should be the source of water supply from early in the 1860s.²² Yet another person proposed that a cement weir be built across the Fitzroy River just above the Rocks. This idea was to convert the length of the Fitzroy River from the Rocks to Yaamba into a huge reservoir of "pure and fresh water."²³ The Council rejected that idea, but in 1914 they unanimously passed the proposal of the City Engineer, Mr. H. W. Parkinson to supply the town with water from Yaamba at a cost of 114, 000 pounds.²⁴ It was to be another ten years before the scheme was implemented though. April 21 1914 was an important history-making day for the people of Rockhampton. On that day, the City Council accepted Mr. Bellamy's scheme to pump water from Yaamba. This appears to be a very daring move by the Council, because

¹⁹ Ibid., 24.

²⁰ "Rockhampton Water Supply", *Morning Bulletin*, May 22, 1919.

²¹ J. Ryan, *Our Water Supply*, 23.

²² Ibid

²³ Ibid

²⁴ *Brisbane Courier*, 22 May, 1914, 6.

Mr Bellamy was a self-styled City Engineer, Surveyor and Waterworks Engineer.²⁵ Perhaps there might have been some objections to the quality of Bellamy's qualifications, or the Council was desperate to be seen to be doing something constructive about a water supply, so this extremely important meeting was held in camera, which means that the meeting was closed to the public.²⁶ Unfortunately for Rockhampton, nine years later, the Yaamba scheme had not been started.

During these years, numerous different ideas for obtaining water for Rockhampton were still discussed. There was much argument amongst the ratepayers and the Council possibly because there were so many alternatives. Again in 1919, the Rockhampton City Council considered a dam on the Fitzroy River to "ensure a plentiful supply of domestic water for the city". This time the Council contacted the Treasurer, Mr. Theodore on 5 May and asked for the Hydraulics Department to send an engineer to confer with the Rockhampton's City Council's Engineer, Mr. M. Creagh, on the site for a dam. The Treasurer replied that regrettably, a competent officer of the Water Supply Department was not available at that time to advise the Rockhampton Council on the proposed scheme of damming the Fitzroy River.²⁷ However, after the war ended in 1918, the Mayor and engineer Creagh, inspected the proposed Yaamba scheme before the poll on Saturday, 25 January 1919. The poll was to gauge people's acceptance or rejection of taking water directly from the river at Yaamba and if the poll was successful, then Mr. Creagh expressed the opinion that there would be no engineering difficulties and the scheme could be implemented.²⁸ Hindsight proved that the people who wrote "Letters to the Editor" of *The Morning Bulletin* asking why pump water from Yaamba when there was a whole river full of fresh water just outside the town should have been listened to more thoroughly. Unfortunately most people, including the Council were not aware of just how bad the situation could become during a prolonged drought.

Many people were opposed to Council spending so much money and could not see any reason for water to be piped all the way from Yaamba, thirty-five kilometres upriver. Splitters Creek at the Rocks was strongly supported by local residents, but Professor A. J.

²⁵ Ibid., 38.

²⁶ Ibid., 51.

²⁷ *Brisbane Courier*, 25 January, 1919, 14.

²⁸ Ibid

Gibson of Messrs. Julius, Poole and Gibson commented adversely upon the proposal.²⁹ Possibly the fear of the 1919 drought only four years before and the approaching drought in 1923 forced the Council to take serious action because in 1923 when another water shortage disaster was approaching, Council managed to agree to connect the Crescent Lagoon and the Yeppen Lagoon with a pipeline costing 1,200 pounds.³⁰ Scrubby Creek, also known as Neerkol Creek,³¹ had already been connected to the Dunganweate Lagoon by a 600 mm pipe.³² This connecting of lagoons was the only way Council could continue to supply Rockhampton with water, until water could be sourced from somewhere and Yaamba became the chosen place. Eventually, when more money became available, a pumping station and a pipeline were built at Yaamba, and water was pumped the thirty-five kilometres to Rockhampton.

Rockhampton had to use foul lagoon water for about sixty years before this eventuated though. Few, if any other regional towns in Australia had their beginning so adversely affected. The Yaamba project, to take water from the river at Yaamba, was commenced in 1924; ten years after the *Brisbane Courier* correspondent wired in May 1914, that a 'motion was unanimously passed approving the proposal of the City Engineer, Mr. H. W. Parkinson, to supply the town with water from Yaamba at a cost of 114,000 pounds'.³³ Surely the people of Rockhampton believed that their water woes were finally over. Eventually, in consultation with the engineers, Messrs. Julius, Poole and Gibson, Council built a pipeline from a pumping station, thirty-five kilometres upriver at Yaamba and work on this project began in 1924.³⁴ The river at Yaamba was above the influence of the saltwater tide and there was thought to be a plentiful supply of water. Most importantly, a dam would not be required, and it was believed, there would be adequate water to supply Rockhampton with water for years into the future. Water shortage had nearly always been a problem for Rockhampton, particularly during drought and during William Charlton's terms as Mayor, from 1921-23, a decision was made to proceed with a water supply from Yaamba.³⁵ The water from Yaamba would supply the whole of Rockhampton at a cost of 400,000 pounds,

²⁹ *Brisbane Courier*, 25 August, 1922, 6.

³⁰ *Brisbane Courier*, 5 April, 1923, 11.

³¹ *Capricornian*, 19 December 1896, 10.

³² *Brisbane Courier*, 24 February, 1919, 8.

³³ *Brisbane Courier*, 22 May, 1914, 6.

³⁴ Lorna McDonald. *Rockhampton: A History of City and District*, 120.

³⁵ J. Ryan, *Our Water Supply*, 88.

providing the Government would increase the loan from 260,000 pounds to 400,000 pounds.³⁶ Councillors realised that Rockhampton needed a greater and more hygienic water supply and by choosing the Yaamba site, fresh clean running water could be accessed above it. The question arose, would this new water supply scheme that necessitated the Council borrowing 290,000 pounds be for a particular part of the city.³⁷

North Rockhampton wanted to be included in the scheme. Mr. J. Stopford, the Assistant Home Secretary decided that the expenditure would be for the whole town, not just the south side.³⁸ This concern was because for many years there had been two councils and although Rockhampton and North Rockhampton were both amalgamated in 1919, it appears that there was still animosity. Webster explains that the need for a new water supply played a major role in amalgamating Rockhampton and North Rockhampton into one large local authority in 1919.³⁹ With both councils requiring substantial government loans for essentially duplicate schemes, the formation of a single authority became a non-negotiable option if the loan was to be made.⁴⁰ Yaamba was selected because it was some eighty kilometres from the mouth of the Fitzroy River and above tidal influence during droughts and even when tides pushed salt water far upstream.⁴¹ However, engineers were not aware at that time that during droughts, Rockhampton's water supply could only be continued by building small gravel weirs in the bed of the river to dam water for the Yaamba pumping station.⁴²

The Minister for Railways, James Larcombe turned the first sod on the 24 January 1924 and commissioned the pumping works operative on 16 January 1926.⁴³ Adversity had not finished with Rockhampton even then. The *Capricornian* reported in May that year that because of a break-down and burst pipes, Rockhampton was back to relying on 1,000,000 gallons of water each fortnight from the lagoons.⁴⁴ Again the residents of Rockhampton

³⁶ *Northern Star* (Lismore), 22 December 1924, 4.

³⁷ *Morning Bulletin*, 9 July 1936, 19.

³⁸ *Brisbane Courier*, 6 January, 1923, 6.

³⁹ Barbara Webster, *Marooned*, 113.

⁴⁰ *Ibid*

⁴¹ A.E. Hermann, "The Fitzroy River and its Early Floods". CQ Family History Association Inc. <http://www.rootsweb.ancestry.com/~auscqfha/floods.htm> (accessed July 17, 2014).

⁴² Lorna McDonald. *Rockhampton: A History of City and District*, 2nd ed, 120.

⁴³ *Ibid*

⁴⁴ *Capricornian*, 22 May, 1926, 26.

must have been disappointed when in November of that year, water restrictions were implemented. Drought conditions were having a serious effect and the hole in the river at Yaamba, from where the water was drawn, was sinking fast. Council hoped that water would trickle down through the sand from holes further up the river.

Water restrictions in the meantime enforced that hand held hoses would be permitted four hours per day. Showery weather caused a drop in water consumption of between 800,000 and 1,000,000 gallons per day, which indicated that approximately half of Rockhampton's water consumption each day was used on gardens.⁴⁵ Fortunately during 1924 the Yaamba scheme progressed well. The 800 feet of 3 foot 6 inch inside diameter pipes, each section 8 foot long and 2 ½ inches thick were ready for installation. At a special Council meeting on 19 May, 1924, a tender was accepted for construction of a reservoir at Mount Charlton. The Mayor, T.W. Kingle chaired the meeting and Aldermen J.J. Kenna, C.E. Crocker, W. Charlton, R. Cousins, R. Creagh, T.A. Dunlop, W. H. Goodson and H.V. Brwan were in attendance.⁴⁶

From the Yaamba pumping Station, the water would be pumped for about 5 ¼ miles to a measuring channel for chemical treatment, then to a sediment basin of about 900,000 gallon capacity and then through sand filters capable of treating 2,500,000 gallons per day, before being stored in a 2,000,000 gallon reservoir.⁴⁷ The pump house at Yaamba would have a water-well dug to below the river level and it would be seventy-three foot below ground level. The Pump House, with the well would be 800 feet from the point of intake from the river and would run on a downwards angle so water would flow by gravity into the 73 foot deep well. Two centrifugal pumps, each with a capacity of 800 gallons per minute would be used to pump water to the Mount Charlton filtering station. The pumps would be driven by vertical electric motors situated three foot (1 metre) above the 1918 flood level.⁴⁸ Up to this point in 1924, the Council agreed with the engineer, however the Council disagreed with the engineer's idea of piping the water down the southern side of the river (see Figure 5). They wanted it piped down the northern side of the river so Mount Charlton could be used as a filtration and water storing point. The Council's wishes were met.

⁴⁵ *Daily Mercury*, September 27, 1926, 2.

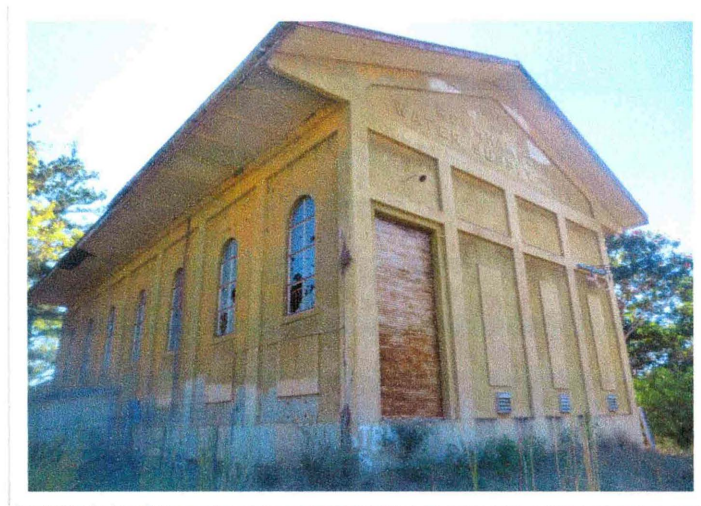
⁴⁶ "Yaamba Scheme", *Morning Bulletin*, May 20, 1924, 8.

⁴⁷ *Ibid*

⁴⁸ *Morning Bulletin*, February 2, 1924, 3.

The Council stressed their intentions that they were in charge of the project and not the engineer, Mr. Creagh, at the Council meeting reported in *The Bulletin*. “We think that our impression of the intelligence of the members of the Council must be clearer than that of Mr. Creagh, as the writer’s recollection of this particular meeting is that the aldermen were fully seized with the advantage gained by the alterations and with the wisdom of making them”. Then also added, “It is obvious to us that Mr. Creagh has not at heart the best interests of the citizens in connection with this matter, but is actuated by a feeling of pique”.⁴⁹

Figure 7: Yaamba Pumping Station where the pumps and the well were situated (note the floor raised to one metre above the 1918 flood)



Source: Emma-Leigh Nissen, 2014

⁴⁹ *Morning Bulletin*, 24 January, 1924, 12.

Figure 8: Transfer reservoir at Mt. Charlton is almost reduced to nature after forty years of disuse



Source: Emma-Leigh Nissen, 2014

The Mount Charlton scheme was opened on the 18 January, 1926 by Mr. Larcombe, the Minister for Railways.⁵⁰ Surely this was the end of the water adversity that Rockhampton had suffered since water was first bucketed from the lagoons, but just ten months later on November 1926, the quantity of water that should have been sufficient to meet all contingencies and the increase in population until 1941, was being used. The *Brisbane Courier* stated that “the council is somewhat alarmed and that drastic steps are to be taken to ensure a smaller consumption.”⁵¹ No doubt people cried, ‘All that money and we still do not have enough water’.

The river could not provide the 2,400,000 gallons per day being used.⁵² During 1935 the Council threatened the population that more drastic restrictions would be enforced if excessive use of water continued.⁵³ By 1936, Rockhampton was using 3,010,000 gallons of treated water per day,⁵⁴ although only 2,500,000 could be filtered according to a 1924 report.⁵⁵ Because of the growing population and demand for water, it was clear that the

⁵⁰ J. Ryan, *Our Water Supply*, 140-141.

⁵¹ *Brisbane Courier*, November 11, 1926, 27.

⁵² *Daily Mercury*, 24 November, 1926, 4.

⁵³ *Toowoomba Western Star and Roma Advertiser*, 23 November 1935, 8.

⁵⁴ *Maryborough Chronicle, Wide Bay and Burnett Advertiser*, 13 November 1936, 8.

⁵⁵ “Yaamba Scheme”, *Morning Bulletin*, 20 May 1924, 8.

much trumpeted Yaamba scheme was not going to be a long term solution for Rockhampton's water woes.

Either the *Maryborough Chronicle* was wrong or unfiltered water was used because shortly after the Yaamba scheme came on line in July, consumers cried out "verily we have spent half a million and the mud is still with us". The engineer explained that it was because of abnormal wet season bringing down continual freshes.⁵⁶ Five years after completion of the Yaamba scheme, Rockhampton was once again in trouble with their water supply. Peak consumption had been reached and the engineers, Messrs. Julius, Poole and Gibson warned that within five years the Council would have to do something about the water supply to the city. The principal engineer, Professor Gibson commented that Rockhampton had no trouble with water supply quality and that there was no fear of typhoid or anything else, but water should be metered. People pay for electricity so why not water.⁵⁷ Rockhampton had advanced from unfiltered lagoon water to a half a million pound water scheme that was insufficient for the growing town. Rockhampton appears to overcome one difficulty with its water supply then another appears. People in authority could not possibly know how fast a town would grow or what quantity of water a tropical city would need, so perhaps it is not the fault of the Council that these continual adversities kept arising.

By 1945, Rockhampton's water consumption had reached 4,078,000 gallons per day and the *Townsville Bulletin* printed an article as to the sorry state of the Yaamba pipeline equipment only twenty years after installation.⁵⁸ The thumb-nail history of the Yaamba scheme presented to Townsville readers explained that the Yaamba pumping station was 24 miles from Rockhampton. The water is pumped through a 30 inch pipe for three miles then through a 20 inch pipe for a further three miles to the 4,500,000 gallons a day treatment works at Mt. Charlton. The water is then transferred from the 400 feet above sea-level Mt. Charlton to the city reservoirs, one of 2,000,000 gallons and two of 1,000,000 gallons. The first eight miles from Mt. Charlton are 22 inch and the remainder are 24 inch pipe. Although the line is capable of carrying 4,500,000 gallons per day, sediment build-up has reduced this

⁵⁶ *Townsville Daily Bulletin*, 26 July, 1926, 9.

⁵⁷ *The Central Queensland Herald*, September 3, 1931, 47.

⁵⁸ *Townsville Daily Bulletin*, 29 November, 1945, 3.

to about 3,000,000 gallons per day.⁵⁹ The Rockhampton Council had purchased one mile of new 24 inch, cement lined pipes to replace any condemned sections and the re-conditioning is estimated to cost 234,000 pounds.⁶⁰

Townsville City had also reached the 4,000,000 gallons per day, and later it will be seen that Rockhampton was able to better cope with water problems than Townsville. When compared with Townsville over a thirty-year period, from before and after the Barrage was built, Rockhampton was a clear winner. However, Townsville also had similar problems as Rockhampton with piping the water from weirs to the city.⁶¹

		Rockhampton	Townsville
Properties with reticulated water:	1952	90.3%	75.1%
	1982	97.6	74.5%
Properties with Sewerage:	1952	65.7%	41.8%
	1982	94.4%	74.2%

Rockhampton needed a better water supply scheme, particularly so that the sewerage system could be expanded.⁶² During the re-conditioning, the pipes were being re-laid on concrete beds above ground that were built to carry a second pipeline when duplication becomes necessary.⁶³

⁵⁹ Ibid
⁶⁰ Ibid
⁶¹ Doug Tucker, Transforming a Provincial City; the Pilbeam Mayoralty in Rockhampton 1952-1982. *Queensland Review*, Vol. 10, Issue 1 May 2003, 171.
⁶² Ibid
⁶³ *Townsville Daily Bulletin*, 29 November 1945, 3.

Figure 9: Gravity fed water pipeline from the holding reservoir at Mt Charlton to Rockhampton reservoir on Athelstane Range follows the Northern Highway (note the footings in place to carry a second pipeline when consumption exceeded supply)



Source: Emma-Leigh Nissen, 2014

Once again adversity struck Rockhampton's water supply. Although the pipeline support was in place, the duplicate water pipeline was never constructed because drought conditions in the past had necessitated the desperate building of gravel weirs to direct the last of the river water into the pump house at Yaamba. This had proved that there was barely enough water flowing down the Fitzroy River for the Yaamba pumping station to continue the present supply through one pipeline. This shortage of water during drought times was certainly a problem because in other ways, for example architecturally, "Rockhampton was advancing more than any other provincial city in Australia".⁶⁴ The long silver pipeline following the Bruce Highway into North Rockhampton is also a distinctive feature of the city.

⁶⁴ *Morning Bulletin*, 7 January, 1965, 12.

Chapter 3

A grand project: The Barrage, 1949 – 1998

After World War Two it was clear that if Rockhampton was going to expand into one of the most important regional cities in Queensland, something drastic needed to happen. The latest drought had proved that there was insufficient water at Yaamba even for the number of residents in the city at that time. Water restrictions had to be imposed quite often and definitely during drought. The city could not support many more new businesses and certainly there was insufficient water to green the city and expand public gardens. Although the pipeline supports were in place for the second pipeline to be laid when demand exceeded supply, adversity again cropped up because of the lack of water particularly during drought. The second pipeline would never be laid. The Council appears to have returned to its dithering state, similar to before the building of the Yaamba scheme. Obviously the old ideas of building dams resurfaced, but the question was where to build it? Also, where was all the money to come from? Thousands of pounds had already been spent on the Yaamba scheme, but the city was still short of water during drought time.

According to the *Rockhampton Morning Bulletin*, an accountant arrived in Rockhampton in 1949 to work for the Rockhampton Show Society¹. This hard working man, who will be discussed later, improbably became mayor of the city and was a strong supporter of building a Barrage across the Fitzroy River at the "Rocks". He improbably became mayor, because he was an 'outsider', an 'unknown' who had been in the city for only three years. The name, Rex Pilbeam, became a household word around Rockhampton, and there will probably never be another mayor of his like. The Rockhampton Show Society had employed him in an effort to improve the finances of that debt-ridden society. History shows that he had a flair for organisation, because in just three years, he reduced the Show Society's debt by 4,500 pounds.² Prior to that, the Society had managed to reduce their debt by 1,500 pounds in thirty years. The electrifying effect he had on the citizens of Rockhampton must

¹ *Morning Bulletin*, 7 June, 2013.

² Doug Tucker, "Transforming a Provincial City: the Pilbeam Mayoralty in Rockhampton 1952-1982", *Queensland Review*, 10, no 1, 2003, 160.

have been enormous because after just three years in the city, in 1952, he stood for mayor and won.³ Rockhampton people may have taken into account that Rex Pilbeam was born in Longreach, Queensland, went to school in Emu Park and then to the Rockhampton High School. Rex Pilbeam must have been a serious student because he passed the Junior Public Examination in the top fifty of 1,300 students in Queensland.⁴ At this point, it is necessary to jump ahead in time and to condense Mayor Pilbeam's thirty years in the Mayoral Chair to understand what he did for the city in those thirty years, which included building the Barrage.

Rex Pilbeam was mayor of the city and is one of the people that pushed for the Barrage to be built, so it is important that history recalls the type of person he was. One of the many enterprises he championed was the acquisition of paintings for the local art gallery. The Australian Arts Council was subsidising paintings by living Australian artists, so a fund raising drive was established in 1975, which raised \$500,000.⁵ The art collection has greatly appreciated since 1975 and is now valued at more than \$14 million.⁶ Building of the Second World War Memorial swimming pool, the road up Mount Archer and the building of the Pilbeam Theatre are a few of the other great works that Rex Pilbeam was, as Mayor, responsible for. Rex Pilbeam had patriarchal views on women's place in society. In 1976 he insisted that female library assistants vacate their positions when they got married to make way for unemployed, unmarried females. Married women had a husband to support them, so he dismissed his female staff, employees of the Council, when they got married.⁷ Rex Pilbeam's career and life nearly came to an end when he was shot.

Mayor Pilbeam survived the gunshot wound, and possibly because his female lover had shot him as a result of a lovers quarrel, he resigned as mayor.⁸ There were some apparently virtuous people in Rockhampton, and it seems that the Rockhampton Agricultural Show

³ Spent Memory, Bull at a Gate: Rex Pilbeam, <http://www.spentmemory.com/2012/02/2-rex-pilbeam-bull-at-gate.html> (accessed November 18, 2014)

⁴ Doug Tucker, "Transforming a Provincial City", 161.

⁵ A History: Rockhampton Art Gallery, http://www.rockhamptonartgallery.com.au/About_Us/History (accessed November 18, 2014)

⁶ Rockhampton Regional Council: Rockhampton's multi-million dollar art collection to have national audience, http://www.rockhamptonregion.qld.gov.au/About_Council/News_and_announcements... (accessed November 18, 2014)

⁷ Marg O'Donnell, "Not Just Good Girls", <http://griffithreview.com/articles/not-just-good-girls/>, (accessed July 8, 2015).

⁸ Doug Tucker, "Transforming a Provincial City", 163.

Society members, who first employed him as an accountant, and to get them out of debt, may have been among them.⁹ On September 10, 1953, eleven days after he resigned as mayor, the Show Society dismissed Pilbeam's appointment forthwith, even though it had been Pilbeam's brilliance that had reduced the Society's debt by 4,500 pounds. How embarrassing it must have been for the Show Society Committee to meet the mayor of Rockhampton at social and civic events after they had dismissed him. Even more so after the people of Rockhampton voted Pilbeam back to office as mayor on October 31, less than six weeks later.¹⁰ Rex Pilbeam might well be judged by what he did for the people of Rockhampton according to Bede's Death Song:

Facing that enforced journey, no man can be
More prudent than his call to be,
If he considers, before his going hence
What for his spirit of good hap or of evil
After his day of death shall be determined.¹¹

Rex Pilbeam was a forceful man in his position as Mayor and that 'force' probably comes from his position as Warrant Officer with three years overseas service during World War Two.¹² When the Labor Aldermen of the Council conspired to vote as a team, Pilbeam, as an Independent, with other Independent Aldermen were having difficulty in fulfilling his campaign pledges. Obviously frustrated but not beaten, Rex Pilbeam decided to fight fire with fire and formed his own Civic Independent Group who usually delivered the vote that the Mayor needed.¹³ Mayor Pilbeam is credited with solving the city's water supply problem which, in turn, met the industry and residential growth.¹⁴ With this water problem solved, Rockhampton's sewerage system could be expanded, which meant the end of the 'night carts'. When these 'things' that Mayor Pilbeam did for the city are assembled together it is easy to see why the population of Rockhampton respected him. But now, back to when Rex Pilbeam became the Mayor of Rockhampton. Mayor Pilbeam was fortunate that when he took the Mayoral chair, the Town Clerk was about to retire, but the City Engineer still had five years before retirement. Nevertheless, Mayor Pilbeam was able to hand-pick his new

⁹ "Pilbeam dismissed at Show Society Meeting," *Courier Mail*, September 11, 1953, 1.

¹⁰ "Pilbeam voted back to office as Mayor," *Rockhampton Morning Bulletin*, November 2, 1953, 4.

¹¹ Bede's Death Song, "The Cambridge Companion to Bede, ed. Scott De Gregorio, Cambridge University Press, Cambridge, 2010.

¹² Doug Tucker, "Transforming a Provincial City", 164.

¹³ *Ibid.*, 166.

¹⁴ *Ibid*

Town Clerk and so be in a position to dominate both the Council meetings and persuade the Town Clerk to agree with Mayoral decisions.

Five years later, when the City Engineer retired, Mayor Pilbeam was able to hand-pick his new City Engineer.¹⁵ Arnold Philp and the Mayor worked well together and soon the engineer completed a feasibility study of building a barrage across the river. With this document Mayor Pilbeam campaigned to the Local Government Department to gain funding for the barrage. The Local Government Department was suitably impressed with the idea and commissioned the Engineering Department at the Queensland University to construct a scale model.¹⁶ After three years of testing in March 1963, the University reported that the Barrage would prevent the salt water from contaminating the fresh water up stream and could be safely built.¹⁷ Importantly it would be close to the city, unlike Yaamba. Mayor Pilbeam's idea of building a Barrage on the Rocks at Splitters Creek was to proceed for Rockhampton whether people agreed or not. He did not ask for decisions from people, but told them what was going to happen. The headline in *The Morning Bulletin* stated "Tell people about barrage scheme".¹⁸ The newspaper story continues that a public meeting would be held at the Municipal Theatre so that the Council could tell people about the Barrage. "It was not for the people to decide. The Council as the elected representatives had made the decision".¹⁹ Work on constructing the Barrage began in 1966.²⁰ Pilbeam was looking ahead.

The adversity that Rockhampton suffered from the time the first settlers arrived appeared to be at end. The difficulty of obtaining fresh water from the lagoons, the difficulty of obtaining water from Yaamba and the difficulty of obtaining government permission to build the Barrage that would end the disastrous lack of sufficient water for Rockhampton was at end, or it seemed so. The adversity that bothered Rockhampton's water supply from the start did not finish with permission to build the Barrage. Almost as soon as the money to build the Barrage was made available, certain people in the community expressed their concern that the Barrage might not be a good idea. The Fitzroy Shire Council contacted the

¹⁵ Ibid., 168.

¹⁶ Ibid

¹⁷ Ibid., 169.

¹⁸ *Morning Bulletin*, 3 February, 1965, 4.

¹⁹ Ibid

²⁰ Fitzroy River Water pamphlet. "Fitzroy River Barrage".

Department of Local Government requesting information on the effect the Barrage would have on residents above and below the Barrage.²¹ Rockhampton was blessed not to have a flood during 1969 while the Barrage was being constructed; in fact, it was reported the river did not run at all for nine months.²² However, Alan Titman, a boilermaker on the project is reported as saying that the river flooded at least twice during construction. At one time a “huge leak” developed which the pumps available could not stop. Alan said, “a massive pump with a 600mm diameter outlet was sourced from Melbourne to find and fix the leak”.²³

Figure 10: Caricature of Rex Pilbeam, always having his eyes on the road ahead



Source: *Morning Bulletin*, 7 June 2013

During the opening of the Barrage celebrations in March 1970,²⁴ the Premier, Sir Joh Bjelke-Peterson pressed a secure button and a warning hooter sounded as the gates began to rise. Fireworks burst over the mighty Fitzroy River Barrage as the Premier concluded his speech of congratulation to the Mayor, Rex Pilbeam at the official Barrage opening. The

²¹ *Morning Bulletin*, 10 March, 1965, 3.

²² *Morning Bulletin*, 10 May, 2005.

²³ *Morning Bulletin*, 27 December, 2014.

²⁴ Fitzroy River Water pamphlet, “Fitzroy River Barrage”.

Premier paid tribute to the determination, persistence and enterprise of Rex Pilbeam and Councillors for overcoming decades of “official discouragement”.²⁵ The Barrage, with its set of gates that can be raised, permits flood water to escape to the sea, but in drought times, gates can be closed to prevent salt water from flowing upstream into the fresh water. No other city in Australia has a Barrage like it. Public gardens such as the Kershaw Gardens could now be established, and slowly the greening of Rockhampton took place, a realisation that was highly unlikely before the Barrage was built.

The Glenmore water treatment plant was commissioned in November 1971, at a cost of 6.3 million dollars, by N.T. Hewett, the Minister for Conservation. The Glenmore Treatment Works has the capacity to supply 140 ML per day but at the present time, 2014, 50ML per day, or the equivalent of 25 Olympic pools, are treated. From the 1 July 1998, the Rockhampton City Council commercialised the Barrage water impoundment area as a business unit of the Rockhampton City Council and in 1999 registered the business name of “Fitzroy River Water”. At that time the Fitzroy River Water supplied bulk water to Fitzroy and Livingstone Shires and to 60,000 residents of Rockhampton with treated water and sewerage services.²⁶

Figure 11: The Barrage, front/left, where Splitters Creek enters the Fitzroy River above the Rocks



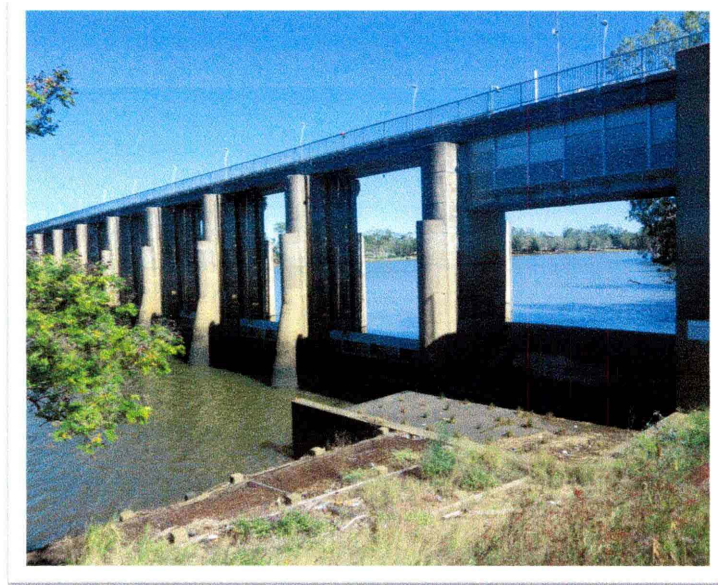
Source: James Lindley, 2015

²⁵ Michelle Gately, “Project that Transformed a City,” *Morning Bulletin*, 10 January, 2015, 11.

²⁶ Carkeek, J.R.T., *Rockhampton's water supply: Its policies and administration*, Rockhampton City Council, 1971.

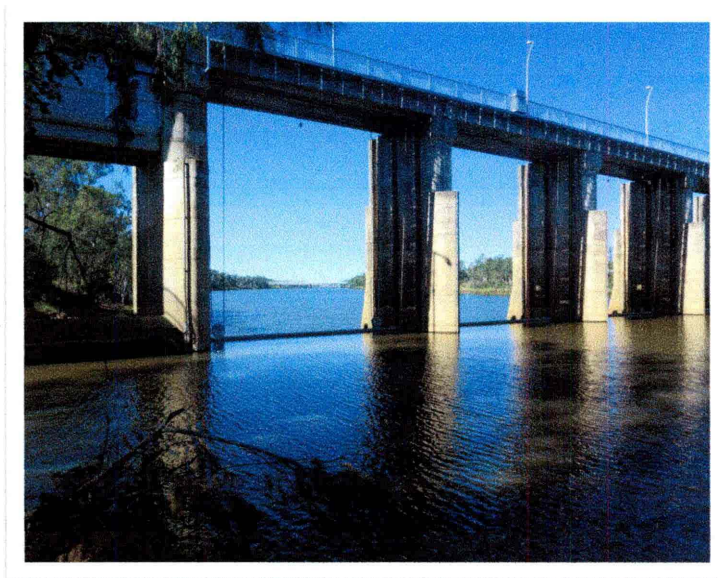
Figures 12 and 13 below are photographs taken at half-tide, with all gates closed. A set of pullies allow the gates to be lifted up to the walk-way at the top to prevent damage during flood. Amazingly, to an observer, these gates appear totally waterproof as no water escapes around the edges.

Figure 12: Northern bank of the Barrage, looking upstream, from salt to fresh



Source: James Lindley, 2015

Figure 13: Northern bank of the Barrage, looking downstream, from fresh to salt



Source: James Lindley, 2015

Both these photographs taken fifteen minutes apart show the salt water from downstream held back by the gates and the fresh water at the top of the closed gates on the upstream side.

The Rockhampton Barrage is an iconic structure for the city. It is not a dam, so therefore more sophisticated in a sense that it prevents saltwater entering the pool of fresh. Even the 2014 Barrage Open Day reflects its important status to the city. Forty years after the Barrage was opened, people still flock to view this iconic structure when the Rockhampton City Council declares a visiting day. The Barrage is important for securing the water supply of not only Rockhampton, but also of surrounding communities such as Yeppoon and the Capricorn Coast. During 2009 Rockhampton people had used 20,000 mega litres of Barrage water, although Rockhampton has an annual allocation of 50,000. This was nearly 40 years after the Barrage had been commissioned and the Rockhampton, Fitzroy, Mount Morgan and Livingstone Councils had merged in 2008, which resulted in forty per cent more connections to the Fitzroy River.²⁷ The people of Rockhampton and surrounding areas must be thankful for the far sightedness of people like Rex Pilbeam, Mayor of Rockhampton from 1952 until 1982, and his Rockhampton City Council in building the Barrage in 1970 because the Barrage and the adjacent Glenmore Water Treatment Works have provided safe and reliable water to Rockhampton and adjacent shires since.

The purpose of the Barrage is clearly stated; “The Fitzroy River Barrage was built to meet the long-term water supply needs of Rockhampton. It separates the fresh water upstream from the tidal salt water downstream to create a water storage that extends approximately 60 km upstream with a combined volume of approximately 80,300ML when full. The Barrage storage supplies raw water for the Glenmore Water Treatment Plant which supplies up to 120ML of high quality drinking water to the local community”.²⁸

Though the Barrage is viewed as a great success, there have been problems associated with its construction. Peter and Kay Baggett of *Clear Water*, The Caves, mentioned that the river has been increasing in turbidity since the Barrage’s construction. The river flowing

²⁷ Rockhampton Regional Council, http://www.rockhamptonregion.qld.gov.au/Council_Services/Fitzroy_Water/About_Us/Our_history (accessed August 8, 2014).

²⁸ Fitzroy River Barrage. Document supplied by Fitzroy River Water, Business Unit of RRC, www.frw.com.au.

through their property is no longer the clear stream that their property was named for, *Clear Water*. The Baggett's were also concerned that the shoals of fish, particularly mullet are no longer seen. They stated that they did not know if the river and creek banks slipping into the water during rain periods or an inefficient fish ladder at the Barrage site were the cause for the scarcity of fish.²⁹ Peter and Kay Baggett said that Mayor Pilbeam assured people that there was \$3,000,000 compensation available for people that were inconvenienced by the building of the Barrage.³⁰ They also said that people were not aware that work was going to commence on building the Barrage. The Irrigation and Water Supply officers inspected their property and marked the height that the water was expected to rise to. Landholders that were to be inconvenienced by the rise of water built new staging and lifted their pumps above the expected rise, but the water still came three quarters of the way up their pumps. They estimate that more than two hundred acres of their property was submerged by rising water.³¹ They are still losing land as the water-logged banks are collapsing after heavy rain into both the Fitzroy River and Alligator Creek. They have to rebuild cattle proof fences as the fences and banks of their land slip into the river and creek.

Their greatest disappointment is that the three years grace that Mayor Pilbeam gave landholders to apply for compensation, began from the time work started on the Barrage, not when the Barrage filled. It was after the Barrage filled that landholders realised their massive loss of land, and when they attempted to claim compensation, were informed that the three years grace had elapsed. Peter and Kay Baggett explained that a serious concern when floods are expected is that although the Rockhampton Municipal Council has more than 48 hours notice from the river gauge at Riversleigh until the flood water reaches Rockhampton, the gates are not opened to release the huge amount of already stored water before the flood reaches the Barrage. This causes the river to be unnecessarily higher further upstream and possibly diverts much more water through the lagoons behind the Range and causes more flooding at Depot Hill.³² There is no doubt that Rockhampton needed the Barrage and this is possibly a simple case of sacrificing a few for the good of the greater majority.

²⁹ Peter and Kay Baggett, personal interview, 4 April 2015.

³⁰ Ibid

³¹ Ibid

³² Ibid

Chapter 4

Making water work: Ideas to harvest and store water and flood-proof Rockhampton

Though Rockhampton now has a reliable supply of water for the growing city, the council is not sitting back and have signalled schemes to “make water work”.¹ This is about meeting future demand for water from urban populations, industry and agriculture in Rockhampton, Gladstone and the Capricorn Coast. SunWater, a bulk water infrastructure developer, produced a glossy brochure in 2014, titled *Growing Central Queensland: The Fitzroy River Agricultural Corridor*.² This is part of the Lower Fitzroy River Infrastructure Project and is linked to PM Abbott’s Northern Australia White Paper. In this brochure, SunWater outlines a proposal to, along with the Gladstone Area Water Board, construct two weirs on the Fitzroy to harness more water in order to develop an agricultural corridor along the Fitzroy River and surrounding region. The main industry earmarked is several industrial scale cattle feedlots. The water will also be used to assist industrial expansion in Gladstone. These are to be Rookwood Weir, sixty-six kilometres southwest of Rockhampton, and significantly raising the existing Eden Bann Weir, sixty-two kilometres northwest of Rockhampton. The proposal has government support, and the environmental impact statement for these projects has now been released for public comment.

Other Rockhampton businessmen such as Dominic Doblo have called on an old idea, which is for a mega-dam (10,000 gigalitre) at The Gap. Despite support from local cattlemen, this project has struggled to generate enthusiasm with local politicians at any time in history.³ All of these mooted projects reflect the continued evolution of Rockhampton’s water supply

¹ “Making Water Work” is the theme of SunWater, a bulk water infrastructure developer, <http://www.sunwater.com.au/about-sunwater>, (accessed May 12, 2015).

² SunWater, *Growing Central Queensland: The Fitzroy River Agricultural Corridor*, <http://rdafcw.com.au/wp-content/uploads/RDAFCW-BKAgriCorridor-Fitzroy.pdf> (accessed May 12, 2015).

³ *The Morning Bulletin*, CQ businessman backs Doblo's proposed Gap Dam on Fitzroy, November 3, 2014, <http://www.themorningbulletin.com.au/news/businessman-backs-doblo-proposed-gap-dam/2439674/> (accessed February 3, 2015).

history. But nowadays, the ideas are linked to greater regional outlooks rather than to localised improvements for just Rockhampton.

Rockhampton has experienced some big wets in the summers of 2010-2012, with the Fitzroy breaking its banks in January 2011. Since then there has been much discussion about flood proofing Rockhampton, and these aforementioned weirs are part of that plan. Perhaps the idea floated in the mid-1890s by A. J. Richardson, the district surveyor, may come to fruition in the future. He suggested damming the five main rivers, the Fitzroy, Dawson, Isaacs, Mackenzie and Nogoa. His idea might have prevented flooding, and secured a massive water supply for Rockhampton if it had been implemented. During 2005 a survey of residents indicated that fifty-five per cent of Rockhampton residents considered that another storage area was either important or crucial. Mayor Margaret Strelow wants to secure Government approval for a second storage area.⁴ Long-term residents in the Glenroy Crossing area, where the road crosses the Fitzroy River, recall that on numerous occasions the river does not run. When this flow stops on rare occasions, Rockhampton only has the Barrage pondage area to sustain it.

At the present time however, Rockhampton uses less than half of the available Barrage water, so this indicates that Rockhampton could support a population of over double the present size. The 2011 census indicated that in the Rockhampton Regional Council area, which included Fitzroy, Livingstone, Mount Morgan and Rockhampton, there was a population of 109,336 people.⁵ Not all these people are supplied water from the Barrage; for example, Mount Morgan has its own water supply. The "id, the population experts", who prepare information on behalf of the Rockhampton Regional Council, indicated that there was a population of 83,629 in October 2014 and estimate the population will be 113,096 in 2036.⁶ This could be to encourage speculators to build dwellings and businesses by indicating that the population will grow by 35.24 %. There is also the possibility of the area receiving absolutely no rain for two years. If this does happen, then Rockhampton can survive with the water in the Barrage. The Barrage pondage holds 81,300 mega litres, which means that Rockhampton can survive for a number of years without rainfall in the

⁴ *Morning Bulletin*, 4 May, 2005.

⁵ Rockhampton Regional Council, <http://www.queenslandplacws.com.au/rockhampton-regional-council> (accessed November 14, 2014).

⁶ Profile.id Community profile, <http://forecast.id.com.au/rockhampton> (accessed November 14, 2014).

catchment area.⁷ During 1969 the river did not flow for nine months.⁸ During February 2010, heavy rain caused the Council to open all eighteen Barrage gates to let floodwater escape at the rate of 114,000 mega litres per day.⁹ Even with the abundant water supply available to Rockhampton at the present time, health authorities are aware that they must remain vigilant in monitoring the water quality.

The source of Rockhampton's water supply, the Fitzroy River, is not as healthy as it seems. Potentially toxic blue-green algae bloom cells escaped through the filters at the Glenmore Water Treatment Plant in 2009, but chlorine destroyed the harmful bacteria before it entered the tap supply. The Council did not issue a health warning to residents; however they must have been very concerned by the escape of the cyanobacteria, the potentially toxic algae bloom cells. Members of the Regional Council's Water Committee immediately authorised the cost of \$500,000 to upgrade the filter system. Rockhampton's water supply could be shut down if there is a repeat of the 2009 blue-green algae escape. The water supply manager, Robert Truscott said the new filters would increase the effectiveness of the filters to remove the cyanobacteria and similar micro-organisms. These micro-organisms must have posed a great danger to residents because cyanobacteria penetration is now a notifiable incident. Water supply to the city will be temporally suspended if such a danger arises again because the health and safety of the community is paramount; Robert Truscott said.¹⁰ One of the main causes of water weed and blue-green algae growth is the plant nutrients (fertilizers) that wash into the river during rain. Blue-green algae, cyanobacteria, bloom can be controlled, but the control method results in weed growth. Algae and weed growth are more common in still water like lakes. The Barrage blocks all river flow during the dry season which gives the algae and the weeds time to grow.

The fertiliser nutrients must go somewhere so it goes either to the algae or the water weeds. Weeds block the sunlight, which severely reduces the algae growth. On the other hand, if the algae establishes first, it blocks the sunlight reducing water weed growth. Herbicides kill the water weeds which results in a blue-green algae outbreak. Fitzroy River Water and Rockhampton Regional Council are faced with an impossible situation. They have

⁷ *Rockhampton Morning Bulletin*, 10 May, 2005, 5.

⁸ Community Profile, <http://forecast.id.com.au/rockhampton>.

⁹ Sharon O'Neill, "Gates let Water Through," *Rockhampton Morning Bulletin*, February 5, 2010.

¹⁰ Adrian Taylor, "City blasts water bug with chlorine," *Rockhampton Morning Bulletin*, May 25, 2009.

no choice in whether the algae or the water weeds grow first. The algae can be controlled using algaecides, but that often results in weed growth. On the other hand, herbicides will kill the water weeds but that often results in heavy cyanobacteria and green algae bloom. The obvious answer is to use both the herbicide and the algaecide, but that kills the fish.¹¹ Not only does the Rockhampton Regional Council and Fitzroy River Water have to supply drinking water to Rockhampton, they have to supply safe drinking water with as little damage to the ecology as possible.

Rockhampton is economically very important to the state, and no doubt the Barrage gave Rockhampton the chance to expand. The Gross Domestic Product (GDP) of the region during 2010 was \$5.2 billion, or 19.9 per cent of Queensland's exports.¹² According to the *Rockhampton Morning Bulletin* of October 2014, Rockhampton's water supply came second in a Queensland wide taste panel survey.¹³ Councillor Greg Belz said "The Fitzroy River is the primary source for Rockhampton and Gracemere residents with treatment taking place at the Glenmore Treatment Plant using conventional treatment processes including flocculation, sedimentation, filtration and chlorination before distribution".¹⁴ According to Neil Hanschen, the general manager of Fitzroy River Water, during 2006, Rockhampton has too much fresh water. Seventy-seven per cent of fresh water runs out to sea, so Rockhampton will never have to face the issue of recycled water that concerns the south-east corner of the state.¹⁵

¹¹ Clean Flo, "Control Green Algae and Cyanobacteria Blooms in Lakes, Reservoirs and Ponds". <http://www.clean-flo.com/algae-control/algae-bloom-control/> (accessed September 26, 2014).

¹² Capricorn Enterprise. <http://capricornenterprise.com.au/economic-development/reports/facts-figures/> (accessed, 14 November, 2014).

¹³ *Morning Bulletin*, 15 October, 2014.

¹⁴ Ibid

¹⁵ *Morning Bulletin*, 2 December, 2006, 5.

Conclusion

The city of Rockhampton grew up beside a largely saltwater river. How the city Council has managed Rockhampton's evolving water crises is primarily a lesson in politics and local government. Mayors and their aldermen required the big ideas, consensus, finances and the technical expertise of engineers. All these elements have been critical when discussing Rockhampton's water supply history. Droughts and population growth were the drivers over which these people in the Council had to keep coming up with new ideas. They eventually worked together to realise the water projects, albeit incrementally, but it was Mayor Rex Pilbeam more than anyone who took charge of ensuring up a continuous water supply for Rockhampton well into the future. He also ensured that a flow on benefit of the Barrage was to green the city that was too often left looking brown and barren from the dry times and long hot summers. The Barrage meant continuous and plentiful water, and no more rationing.

This water history has not only shone light on local politics, but also on the themes of adversity and resilience. Rockhampton's leaders and inhabitants never gave up but rather persevered and remained optimistic until the next big project could be financed and built. There were many grand ideas, but they were not always practical. Arguments in the Council often revolved around costs. The politics of water also led to the emergence of Greater Rockhampton after the Great War and Great Flood when the two Councils had to merge if they were to both benefit from the Yaamba scheme. In terms of identity, Rockhampton has its iconic Barrage due in large part to the foresight and character of Pilbeam, but also owing to earlier ideas. The Barrage provides Rockhampton with its identity in many regards.

Today it can be said Rockhampton's water supply is safe and continuous, although the journey there has not been easy. As the population of the city increased so did demand for water supply infrastructure. This infrastructure only came after many years of indecision and lack of money. The supply of water to Rockhampton evolved from carting foul water from the lagoons, to constructing reservoirs on the Range, to the much more sophisticated Yaamba pumping station with its filtration treatment, and finally to securing it from a pool

of fresh water above the Barrage that keeps the salt water out. The success of these earlier schemes, evolving as they did into the next one, has allowed Rockhampton to realise its potential and develop as an important regional hub. Having this stable supply means the city will now try and expand agriculture and industry further by trapping even more water from the Fitzroy with the Rookwood weir proposal and raising the Eden Bann weir. Doctor Callaghan would be pleased to know that children are not being struck down with water borne diseases such as typhoid and diphtheria as they were when he came to town in 1861, and that his intuition and persistence paid off. In fact, Rockhampton has come a long way since those days of having to make do with inadequate supplies of lagoon water.

Bibliography

Primary Sources

Rockhampton City Council Archives

Rockhampton City Council Records, Sewerage and Water Committee, September 9, 1963.

Rockhampton City Council Records, February 6, 1964.

Rockhampton City Council Records, *Official Programme of the City of Rockhampton Barrage Commissioning*.

Capricornia Collection, CQUniversity Library, Rockhampton

Carkeek, J.R.T., *Rockhampton's water supply: Its policies and administration*, Rockhampton City Council, 1971.

City of Rockhampton Mayor's Reports (Water Supply Department notes), 1954-1974.

Powell, J.M., *Plains of Promise Rivers of Destiny: Water management and the development of Queensland 1824-1990*, 1992.

Interviews

Peter and Kay Baggett, High School teachers and property owners, *Clear Water*, The Caves. Interviewed by James Lindley, 4 April 2015.

Jason Plumb, Coordinator Treatment and Supply, Fitzroy River Water. Interviewed by James Lindley, 17 June, 2015.

Newspapers (from Trove, microfilm & hard copy)

Brisbane Courier, December 29, 1862.

Brisbane Courier, May 22, 1914.

Brisbane Courier, January 25, 1919.

Brisbane Courier, January 31, 1919.

Brisbane Courier, February 24, 1919.

Brisbane Courier, December 31, 1919.

Brisbane Courier, November 13, 1920.

Brisbane Courier, August 25, 1922.

Brisbane Courier, January 6, 1923.

Brisbane Courier, April 5, 1923.

Capricornian, December 15, 1883.

Capricornian, June 4, 1892.

Capricornian, August 13, 1895.

Capricornian, November 14, 1896.

Capricornian, December 5, 1896.

Capricornian, December 19, 1896.

Capricornian, May 14, 1898.

Capricornian, July 5, 1902.

Capricornian, May 22, 1926.

Central Queensland Herald, September 29, 1931.

Courier Mail, September 11, 1953.

Daily Mercury, September 27, 1926.

Daily Mercury, November 24, 1926.

Maryborough Chronicle, Wide Bay and *Burnett Advertiser*, November 13, 1936.

Morning Bulletin, June 4, 1892.

Morning Bulletin, April 8, 1916.

Morning Bulletin, January 24, 1924.

Morning Bulletin, February 2, 1924.

Morning Bulletin, May 20, 1924.

Morning Bulletin, December 6, 1924.

Morning Bulletin, June 1926.

Morning Bulletin, July 9, 1936.

Morning Bulletin, November 2, 1953.

Morning Bulletin, January 7, 1965.

Morning Bulletin, March 10, 1965.

Morning Bulletin, May 4, 2005.

Morning Bulletin, May 10, 2005.

Morning Bulletin, May 25, 2009.

Morning Bulletin, February 5, 2010.

Morning Bulletin, June 8, 2013.

Morning Bulletin, January 10, 2015.

Morning Bulletin, January 31, 2013.

Morning Bulletin, October 15, 2014.

Morning Bulletin, December 27, 2014.

Northern Star (Lismore), December 22, 1924.

The Observer, January 25, 2013.

Toowoomba Western Star and Roma Advertiser, November, 23, 1935.

Townsville Daily Bulletin, July 26 1926.

Townsville Daily Bulletin, November 29, 1945.

Townsville Daily Bulletin, March 11, 1954.

Secondary Sources

Published electronic sources

A History: Rockhampton Art Gallery,
[http://www.rockhamptonartgallery.com.au/About Us/History](http://www.rockhamptonartgallery.com.au/About_Us/History) (accessed November 18, 2014).

Clean Flo. "Control Green Algae and Cyanobacteria Blooms in Lakes, Reservoirs and Ponds".
<http://www.clean-flo.com/algae-control/algae-bloom-control/> (accessed September 26, 2014).

CQ Family History Association Inc. "Discovery of Rockhampton",
http://www.rootsweb.ancestry.com/~auscqfha/archer_bros.htm (accessed November 12, 2014).

Dawson, Chris. "The evolution of execution in Queensland." *Queensland History Journal* 22 (2013),

<http://search.informit.com.au/documentSummary;dn=844635124683420;res=IELHSS>

(accessed November 27, 2014).

Fitzroy River Barrage. Document supplied by Fitzroy River Water, Business Unit of RRC, www.frw.com.au.

Fox, Matthew J. History of Queensland: Its People and Industries.

<http://espace.library.uq.edu.au/eserve/UQ:216975/AU:4021-Foxs-History-Queensland-1a.pdf> (accessed August 13, 2014).

Heritage Register, <http://heritage-register.ehp.qld.gov.au/placeDetail.html?sitid=15577> (accessed, August 25, 2014).

Hermann, A.E. "The Fitzroy River and its Early Floods." CQ Family History Association Inc.

<http://www.rootsweb.ancestry.com/~auscqfha/floods.htm>

"Making Water Work", SunWater, <http://www.sunwater.com.au/about-sunwater>, (accessed May 12, 2015).

McKay, Judith. Selling Queensland at the Glasgow International Exhibition of 1901.

Memories of the Queensland Museum, Culture, vol 2, no 2, 2002. p. 190.

<http://search.informit.com.au/documentSummary;dn=889048885571980;res=IELHSS>ISSN:1440-4788>. (accessed December 8, 2014).

Measuring Worth – Measures of worth, inflation rates, relative value, worth of a dollar...

<http://measuringworth.com/australiancompare/relativevalue.php> (accessed November 7, 2014).

O'Donnell, Marg. "Not Just Good Girls", <http://griffithreview.com/articles/not-just-good-girls/>, (accessed July 8, 2015).

Profile.id Community profile. <http://forecast.id.com.au/rockhampton> (accessed November 14, 2014).

Rockhampton Racecourse Track Map,

<http://www.racenate.com/Track%20info/Rockhampton.htm> (accessed August 25, 2014).

Rockhampton Regional Council,

http://www.rockhamptonregion.qld.gov.au/Council_Services/Fitzroy_River_Water/About_Us_history (accessed August 8, 2014).

Rockhampton Regional Council,

http://www.queenslandplaces.com.au/rockhampton_regional_council (accessed November 14, 2014).

Rockhampton Regional Council: Rockhampton's multi-million dollar art collection to have national audience,

http://www.rockhamptonregion.qld.gov.au/About_Council/news_and_announcements... (accessed November 18, 2014).

Spent Memories, Bull at a Gate: Rex Pilbeam, <http://www.spentmemory.com/2012/02/2-rex-pilbeam-bull-at-gate.html> (accessed November 18, 2014).

SunWater, *Growing Central Queensland: The Fitzroy River Agricultural Corridor*, <http://rdafcw.com.au/wp-content/uploads/RDAFCW-BKAgriCorridor-Fitzroy.pdf> (accessed May 12, 2015).

The Morning Bulletin, CQ businessman backs Doblo's proposed Gap Dam on Fitzroy, November 3, 2014, <http://www.themorningbulletin.com.au/news/businessman-backs-doblo-proposed-gap-dam/2439674/> (accessed February 3, 2015).

Published non-electronic Sources

Bird, J.T.S., *The Early History of Rockhampton: Dealing chiefly with events up to about 1870*, Central Queensland Family History Association Inc., 1904.

Clark, William. "The Founding of Rockhampton and the Archer Brothers, 1917." *Journal of the Royal Historical Society of Queensland* 1, no. 6 (1919): 327-337.

De Gregorio, Scott (editor), "Bede's Death Song", *The Cambridge Companion to Bede*, edited, (Cambridge: Cambridge University Press, 2010).

Gammage, Bill, *Narrandera Shire*, (Narrandera Shire Council, 1986, xiii).

Gistitin, Carol, "An urgent necessity: Town water supply and sewerage", in *Community, Environment and History: Keppel Bay Case Studies*, eds. Steve Mullins, Mike Danaher and Barbara Webster (Central Queensland University Press, Rockhampton, 2006).

Kingston, Beverley. "The Use and Functions of Local History," in *Locating Australia's Past: A Practical Guide to Writing Local History in New South Wales* (Kensington: University of New South Wales Press, 1988).

McDonald, Lorna. *Rockhampton: A History of City and District*. St Lucia: University of Queensland Press, 1981.

McDonald, Lorna. *Rockhampton: A History of City & District*. 2nd ed. Rockhampton. Queensland: Rockhampton City Council, 1995.

McDonald, Lorna. *Sketches of Old Rockhampton*, St Lucia: University of Queensland Press, undated.

Ryan, J. *City of Rockhampton: Our Water Supply*. Rockhampton: Morning Bulletin, 1926.

Tucker, Doug. "Transforming a Provincial City: The Pilbeam Mayoralty in Rockhampton 1952-1982", *Queensland Review* 10, no 1, 2003.

Webster, Barbara. *Marooned: Rockhampton's Great Flood of 1918* (Indooroopilly: Cooperative Research Centre for Coastal Zone, Estuary and Waterway Management, 2003).

Young, Bruce, Member for Keppel, Queensland Government Maiden Speech, 2012.