

From Riverina Water Shortage to Snowy Surplus: Charles Scrivener's Task to Locate a National Capital

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ABSTRACT

Any biographical study of Charles Scrivener requires abbreviation because of his energetic completion of more than 2,000 surveys while employed with the NSW Lands Department (1876-1910). For a quarter of a century, he followed the usual career development of a staff surveyor, posted first as a draftsman to Hay and then Orange. He next passed the Surveyor-General's Department examination to top the list of 17 successful candidates with a 100% score. His first surveys on contracts from the Newtown survey office led to surveys of Botany, then Ryde, followed by a 2-year posting to fix the eastern boundary of the Australian Agricultural Company north of Port Stephens. This established his bushman skills, and from 1890 he formed part of a small team engaged in triangulation surveys on the expanding fringe of Sydney. Scrivener was posted to Deniliquin a decade later, when rural settlement moved towards the Moama and Wakool river flats, just as drought raised expensive ideas of irrigation. However, he and Alfred Chesterman were loaned to the Commonwealth government to survey prospects for an 'alpine' federal capital. Scrivener assessed Dalgety as best site (gazetted by both Houses of Parliament on 15 August 1904). Scrivener moved to Wagga as Acting District Surveyor while the NSW Premier raised alternatives to Dalgety. Promoted to District Surveyor and acting chairman of the local land boards, Scrivener became directly involved in the Murrumbidgee Irrigation Area expansion and the conversion of Riverine semi-arid mallee country to crop production. He saw railway diversion as the key. The Commonwealth chose Scrivener to prepare 'federal seat of government' surveys, a Yass-Canberra territory and a city site early in 1909. With warnings of possible contamination of the future Burrinjuck catchment, he returned to Hay. Scrivener was appointed in charge of all Commonwealth surveys a year later until 1915. This paper traces Scrivener's professional career and outlines his task to locate the nation's capital, Canberra.

KEYWORDS: Charles Scrivener, federal capital city, Canberra, Murrumbidgee Irrigation Scheme, history.

1 INTRODUCTION

This paper summarises portion of a heavily referenced biography of Charles Robert Scrivener prepared from family letters, newspapers, government records and maps, with close attention to Scrivener's own words and advice (Birtles, 2013).

'Charley' was born on 2 November 1855 at 'Bexley' farm, Canterbury, on the rural edge of Sydney to immigrant parents. He attended a small Episcopalian grammar school in Liverpool run by his father, but from the age of eight, delivery chores for a family general store restricted his schooling to afternoon hours. Three years later, poor health led to two years of

seaside convalescence at Woy Woy with an active outdoor life on boats. His teenage years required him to assist his father's Liverpool real estate business but he became interested in land surveying, and on 11 December 1876 he was accepted as a cadet 'geodetic computer' in the trigonometrical branch of the NSW Surveyor-General's Office. He passed the draftsman's examination a year later.

2 NSW LANDS DEPARTMENT PROGRESSION TO STAFF SURVEYOR

To gain field experience as a surveyor's apprentice, Scrivener was posted to the western Riverina town of Hay (Figure 1) from 3 January 1878, under the supervision of Surveyor Robert McDonald who monitored much of his future career. He became familiar with conditional land selections and problems with an unpopular land auction system that allowed absentee capitalists to hold title in perpetuity. Marriage to 'Lena' Rogers in April led to his transfer a year later to Orange for birth of their first child. His return to Sydney (1880) as a draftsman allowed him three months to prepare for the tough Surveyor-General's Department examination, with special coaching to compensate for incomplete schooling. Only 17 of 46 candidates passed, but Scrivener topped the list with a unique 100% score that earned him the nickname 'One Hundred'.

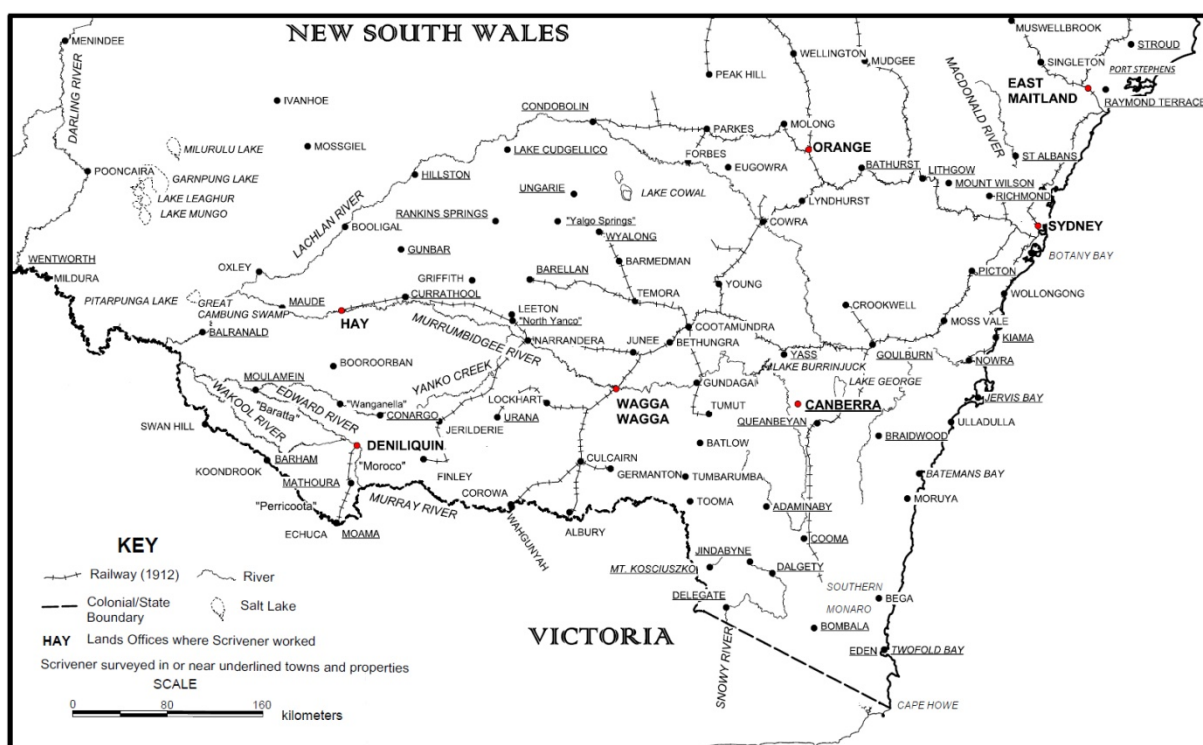


Figure 1: New South Wales locality map (compiled by Terry Birtles, drafted by Frank Blanchfield).

As a licensed surveyor, Scrivener's first surveys were short contracts before his attachment to the Newtown survey office under the supervision of District Surveyor Francis Bensen William Woolrych who initiated first colonial use of the steel survey band in preference to chain links for alignment work. During 1881-82, Scrivener engaged in field surveys at Botany for new residential subdivision, earning his promotion to second-class surveyor. This advancement led to relocation and new duties as detail surveys within the Field of Mars Reserve, Ryde, until the tragic death of 'Lena' from typhoid fever in May 1883. Scrivener's name disappeared from the staff list in annual reports of the Surveyor-General's Department

for 1883 and 1884. In March 1885, Scrivener married Beatrice Harding but her death from puerperal fever after childbirth a year later further disrupted Scrivener's career. He returned to fieldwork in 1887 to finish the Ryde surveys and further surveys in Petersham, Gladesville and Dundas.

Posted in September 1888 to the Hunter Valley, Scrivener engaged for two years in fixing the true position of the eastern boundary of the giant Australian Agricultural Company estate north of Port Stephens. Azimuth observations were required every 10 or 12 miles as he pegged the boundary through difficult, heavily vegetated rainforest terrain. This task established recognition of his bushman skills. He married Annie Pike in April 1889.

Major restructuring of the Lands and Survey Department after an 1887-89 board of inquiry led to Scrivener's attachment to the triangulation survey in September 1890 as an A3-grade staff surveyor. For three years, his team engaged in street alignment surveys, residential estate subdivision and triangulation surveys on the fringe of Sydney, including Liverpool, Ermington, Rydalmere, Penrith, Fairfield, Camden, Kogarah and the Macdonald valley. With a second licensed surveyor, he then retraced the surveys of James Meehan and Robert Hoddle in the upper Hawkesbury valley, especially for the five towns of Windsor, Richmond, Castlereagh, Pitt Town and Wilberforce. He also undertook topographical traverses in the southern segment of the Blue Mountains (Nattai and Kowmung Rivers), followed in 1897 by a series of 'miscellaneous' surveys of roads, portions, cemeteries and schools. His survey of deviations to the Main Western Road in the Springwood district was followed by determination of a baseline through Mount Wilson for a trigonometrical survey of the state. From 1898 to 1901, he returned to Burratorang valley, a survey of Picton Lakes, surveys of the Grose Valley and Bell's Line of Road, and innumerable reports relating to small surveys in and around Sydney.

3 RIVERINA SURVEYS

The posting of Scrivener to Deniliquin (see Figure 1) in July 1901 coincided with NSW governmental concern over the declining status of pastoral settlement of a semi-arid environment. The 1901 Royal Commission on Western Lands into acute economic hardship among Crown tenants raised many questions about the achievements of Crown lands policy that had allowed the Deniliquin Lands Office to dramatically break all NSW records for land selection during 1873 and again in 1897. The commission concluded that economic distress had been caused by low rainfall, the frequency of drought, the rabbit plague, overstocking, sandstorms, pastoral infestation by non-edible scrub, a fall in prices for livestock output, a 'loss of revenue thereon' and the high mortgage on holdings (Western Division of New South Wales, 1901). Much of Scrivener's attention was directed to applications for homestead selections, especially along riverside land downstream from Moama and in the Wakool district.

The challenges of frequent rural drought had raised questions of Riverina irrigation potential ever since 1852 when squatters north of Jerilderie (see Figure 1) began to improve water supply by cutting channels from the Murrumbidgee River. An 1897 report on irrigation prospects for the colony prepared by Colonel R.E. Home, Royal Engineers, an engineer with Anglo-Indian experience, could identify only two possible projects – a canal from near Yanco Creek and a canal from the Murray River near Bangowannah. Home warned of high capital costs well beyond the means of the average man. However, Samuel McCaughey of

‘Coonong’ purchased ‘North Yanco’ station in 1900 and with Irish immigrant labour began construction of a complex irrigation system with 322 km of channels to pump water from the Murrumbidgee River. His success was to influence state government ideas for closer settlement.

4 FEDERAL CAPITAL SURVEYS

Federation required that a federal district of 259 km² be set aside in NSW for a commercially neutral ‘seat of government’ to be located at least 100 miles (161 km) from Sydney. At least 45 local aspirations were offered as sites through federal capital leagues and the NSW Government commissioned Alexander Oliver, president of the state Land Appeal Court for his advice. Oliver inspected 23 prospects but disturbed by extreme drought devastation claimed that none received adequate rainfall to support a city of 40,000 people. He enlarged the site maps of his preferences ten times to fit river catchment boundaries and he identified the value of Snowy River surplus flow to recommend the ‘southern Monaro’ or ‘Bombala-Eden Territory’ on a plateau 762 m above sea level as the best of three possible sites (Oliver, 1900). Strategically located about midway between Australia’s largest two cities, Oliver proposed a railway link that would include access to Twofold Bay, a deepwater harbour. Oliver also germinated the concept of a federal city that overlooked an ornamental lake.

Choice of location rested with the Commonwealth Government which through the influence of Sir William Lyne, Commonwealth Minister of Home Affairs, required Oliver to revisit his three nominated sites and evaluate the two additional sites of Gadara (near Tumut) and Albury (both within Lyne’s federal electorate). Lyne arranged for most members of the two Commonwealth chambers to visit fifteen possible locations and he established a Royal Commission chaired by John Kirkpatrick to report on nine localities (The Parliament of the Commonwealth of Australia, 1903a; 1903b). The result of debates and an exhaustive ballot led to the House of Representatives choice of a site ‘at or near Tumut’ (as Lyne hoped) but the Senate preference ‘at or near Bombala’. To resolve the stalemate, Prime Minister Alfred Deakin requested the services of two NSW surveyors to investigate suitable sites in both districts. Charles Scrivener was chosen to study the southern Monaro district and Alfred Chesterman, who had assisted both Oliver and Kirkpatrick, would survey the Tumut district. Each surveyor prepared two detailed reports, with advice from Scrivener leading both houses to reach agreement (in August 1904) that Dalgety (see Figure 1) on the Snowy River should become Australia’s ‘alpine’ capital city, with railway access to Eden as a seaport.

Scrivener returned to the Riverina to take up the Wagga Land Board position of acting District Surveyor on 21 September 1904, but almost immediately was called upon by Joseph Carruthers, NSW Premier, to report further on the southern Monaro district. A federal territory needed to be determined. Scrivener’s response included a recommendation of Snowy River hydroelectric power generation from a reservoir near Jindabyne. Carruthers did not like the Commonwealth choice of Dalgety nor its suggestion of a proposed area of 900 square miles, and he ordered his Public Works engineers to seek alternative sites closer to Sydney.

For much of 1905, Scrivener focussed on Wagga Land Board matters. He was aware of the Water Conservation and Irrigation Conference that initiated the Murrumbidgee Irrigation Scheme under the chairmanship of Charles Lee, Carruthers’s Secretary for Public Works, who proposed rural development for what became the Yanco Irrigation District now centred on Leeton.

Formation of Deakin's second ministry (July 1905) triggered considerable correspondence with Carruthers who sought a High Court determination whether the 100-mile distance limit from Sydney could in any way be interpreted as equivalent to Commonwealth choice of 'within a radius of 17 miles from Dalgety'. Carruthers also argued very publicly that a site on the Victorian border would unconstitutionally change the state boundaries of New South Wales. Deakin replied that a common decision reached in favour of Dalgety could not be changed and he arranged for the Commonwealth Attorney-General, Isaac Isaacs, to prepare appropriate legislation. In addition, he requested technical advice from Scrivener regarding possible territorial boundaries. An inflamed Carruthers promptly cancelled reservation of all Crown lands in the vicinity of Dalgety. During December, Deakin introduced a new Seat of Government Survey bill with Scrivener's map of possible territorial limits, but debate lapsed without any support from NSW members.

5 MURRUMBIDGEE IRRIGATION

Transferred to the Hay Land Board office, Scrivener took up duties as acting District Surveyor on 31 October 1905. The main changes since his apprenticeship days were the completion of the Hay railway terminus and improved public access to Murrumbidgee River water, with almost every Hay householder irrigating fruit or olive trees. Scrivener's surveys of rural homestead leases and roads took him as far north as Lake Cudgellico (now Cargelligo) and Hillston (see Figure 1), and he inspected proposed artesian irrigation at 'Beunbah' near Coonamble, north of Dubbo. Because new railways were improving transport access, Scrivener began to consider the prospect of extending the track west from Temora to open up Crown land for closer settlement near Cudgellico or west of Barellan. In June 1906, he was promoted to District Surveyor and he began to investigate Deakin's initiatives through the Victorian Irrigation Act 1886 to convert mallee country near Renmark and Mildura. Scrivener visited Mildura for first-hand observation of techniques introduced from California by the Chaffey brothers.

During January 1908, Scrivener's additional responsibilities included acting chairman of the local land boards for the districts of Balranald, South Deniliquin, Hay, Hillston and Narrandera. This included his involvement with Murrumbidgee Irrigation Area (MIA) expansion westward from McCaughey's 'North Yanco' station to follow Mirrool Creek (now Mirrool Creek) in channels to be supplied by the Barren Jack Reservoir as headwater storage (envisioned to be the world's second largest mass gravity dam of the time but not completed until 1928).

Scrivener's visit to western Victoria to study conversion of semi-arid mallee country to agricultural crop production suggested that this process could be transplanted to the MIA. Scrivener's recommendations influenced NSW closer-settlement land policy for similar mallee forests on blood-red soils north-east of the Hay saltbush plains. In particular, Charles Lee had proposed a railway extension from Barellan as a straight track to Hillston, forecast as a prospective rural growth centre, but Scrivener recommended that the track be diverted westwards to serve a possible irrigation area on Crown land alongside the Lachlan River from Yenda to Gunbar (Figure 2). Both Lee and Scrivener were aware of enthusiastic lobbying by Robert Gibson who promoted proclamation of Gunbar village as a town in 1904 to serve MIA expansion. By 1917, such expansion would be identified as the Mirrool Irrigation Area (centred on the later town of Griffith) and the Tabbita, Benerembah and Wah Wah irrigation

districts. As well as irrigated produce, railway cartage could divert local wool traffic and livestock from Hillston to Sydney instead of Melbourne, but neither Hay nor Hillston ever achieved the economic status anticipated in 1908 and the irrigation channels only reached halfway to Gunbar, which simply faded away.

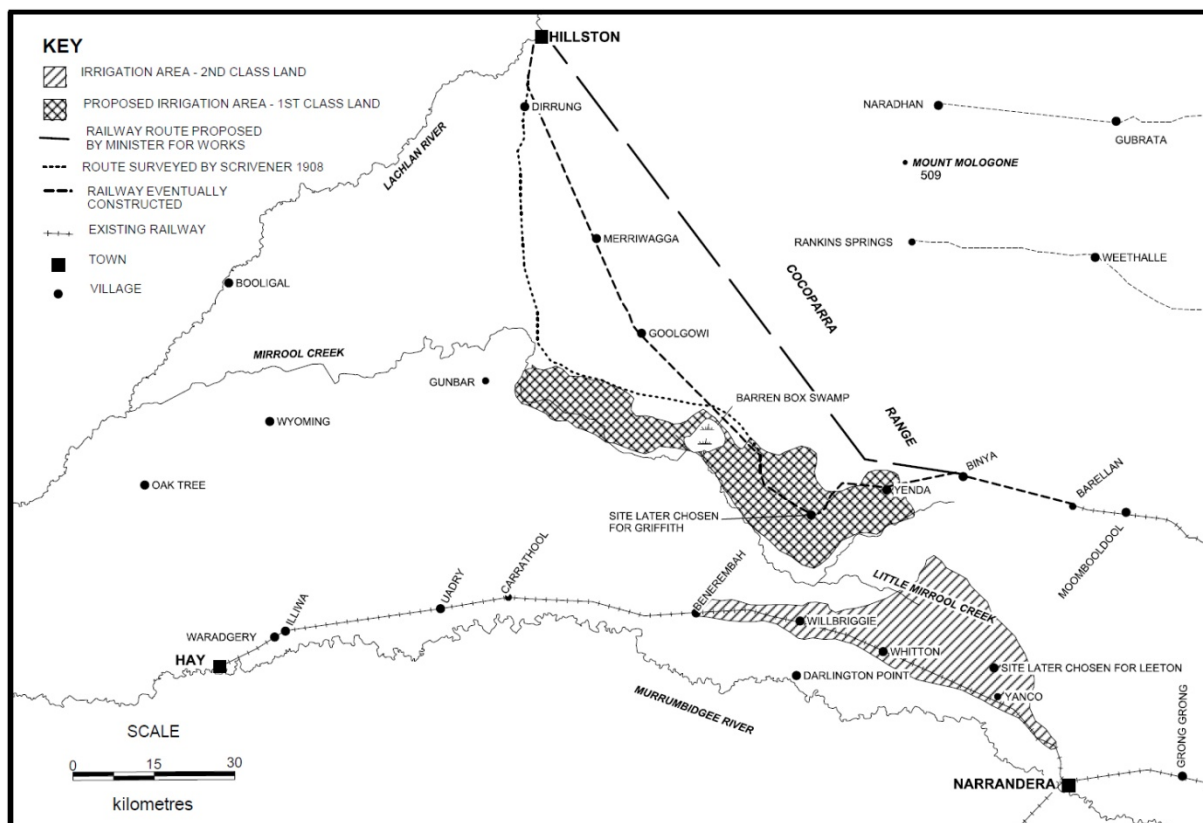


Figure 2: Proposed Murrumbidgee Irrigation Area expansion, 1909. The irrigation scheme never extended west of Barren Box Swamp despite channel construction (compiled by Terry Birtles, drafted by Frank Blanchfield).

6 COMMONWEALTH SERVICE

Early in 1909, Scrivener again found himself involved with federal capital surveys, but in a new location. The squabble between Deakin and Carruthers had persisted, and Scrivener must have been bemused by the newspaper coverage. As many as 14 possible sites were investigated by Public Works staff ordered to find an alternative to Dalgety. As one fanciful and desperate idea, Carruthers was advised that a dam across the Molonglo River would submerge at least 10,000 acres as a storage to boost Lake George by tunnel and that a federal city site might be chosen between Lake George and the proposed Barren Jack Reservoir to receive water pumped uphill from both. Site 'K' on the 'Canberra' pastoral property won some NSW favour, although it was rejected as inferior for water supply by Sir John Forrest, Deakin's key advisor. During the extreme 1907-08 summer, nearby Lake George evaporated and the land was cleared for grazing. NSW Public Works promotion of Site 'K' then highlighted a possible Murrumbidgee dam upstream from the Barren Jack Reservoir, without reference to downstream irrigation discussions. Concerted NSW opposition to the Dalgety site persisted after Charles Gregory Wade replaced Carruthers as Premier.

Wade favoured Canberra but a new House of Representatives ballot of 11 sites eliminated both Dalgety and Canberra, before the final vote on 8 October 1908 achieved preference to

last-minute redefinition of 'Yass-Canberra'. The Senate reached an identical choice on 6 December. For Commonwealth surveys of this Yass-Canberra site and 'a suitable harbour on the coast', NSW Chief Surveyor Robert McDonald chose Charles Scrivener.

Scrivener's first report warned that the federal capital site should not be too near the Barren Jack Reservoir with its priority for irrigating 196,000 acres of 'high-class land' (Scrivener, 1909). He made particular comment about the high risk of water pollution from a large urban population and drew attention to the impact of drought: 'While Barren Jack Reservoir will form an imposing sheet of water when at top level, it would present few beautiful features when, by a reduction of level, large areas of river flat and undulating country would be exposed.' Scrivener concluded that neither this reservoir nor a dam on the Cotter River could be used to generate power (he preferred Snowy River outflow) and that any city beautification by water conservation should be from streams within the Federal territory under Commonwealth control. His assessment did not match advice from Public Works engineers.

Scrivener's analysis of the 'Canberra' site identified 'an amphitheatre of hills with an outlook towards the north and north-east, well sheltered from both southerly and westerly winds.' Surrounding this, he proposed a boomerang-shaped federal Yass-Canberra territory as the entire catchment of the Cotter, Molonglo and Queanbeyan Rivers (even though he noted that all three ceased to flow during hot dry summers). He pitched a survey camp as an operational base for preparation of a contour map that included Oliver's concept of a central ornamental lake (2 March 1909). With revision to the boundaries, the NSW Government formally surrendered the proposed territory (18 October 1909). Scrivener returned to Hay to resume irrigation surveys of Deniliquin and Gunbar.

Within weeks, the federal Department of Home Affairs negotiated further access to Scrivener's services to demarcate the territorial boundaries and other surveys relevant to engineering and city design. As a result, he formally began duties as Director of Commonwealth Lands and Survey until his retirement on long service leave during 1915. In order to undertake a triangulation survey of the territory, an astronomical observatory at Mount Stromlo was constructed as the prime meridian. Scrivener's national responsibilities rapidly widened to include oversight of the proposed Port Augusta-Kalgoorlie transcontinental railway from July 1911, inspection of a Cockburn Sound naval base (Western Australia), organisation of the first Australian and New Zealand conference of Surveyors-General (May 1912), contour surveys for a new Commonwealth Small Arms factory at Lithgow, and selection of a site for a naval college at either Jervis Bay or near Pittwater on the edge of Sydney (Scrivener, 1914).

Progress with construction of the national capital ceased dramatically after Walter Burley Griffin was invited from Chicago to defend his winning entry in an international competition for a federal city design. Griffin's forecast of a city of 75,000 appeared excessively extravagant and his revised plan of 1913 lacked dimensions or any clear relationship to surveyed topography. His communications with Scrivener broke down once he dreamed of further expansion of Canberra, including relocation of key survey pegs, and then sought command of Scrivener's staff. Nor did Griffin appreciate Canberra's drought-prone location when in April 1915 he announced a 95 km² scheme for 'a mountain lake' on the Murrumbidgee to allow steamers from the 'heart of the Capital' access to 50 miles of rugged gorge and mountain scenery. By this time, Scrivener had vacated office, although a lasting legacy to Canberra is the more modest central lake of his design behind Scrivener Dam. Later political motivation to honour a city-founder has bestowed the name of 'Lake Burley Griffin'

which filled during 1964 but does not adhere to the more geometrical design of two lakes and three basins advocated by Griffin.

7 CONCLUDING REMARKS

This paper has explored a small moment of history to highlight the development of a conflict between the use of Snowy Mountains water resources for the irrigation of semi-arid Riverina settlement expansion and the requirements of Australia's national capital city. The conflict persists but surveys by Charles Scrivener revealed the key elements.

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