



ARCHAEO
CULTURAL HERITAGE SERVICES



Historical Cultural Heritage Survey
of the proposed

Emu Swamp Dam Project

STANTHORPE SHIRE
SOUTH EAST QUEENSLAND



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EXECUTIVE SUMMARY

This assessment has undertaken a cultural heritage survey to clarify the nature of cultural heritage significance relevant to the study area along with the potential impacts and required mitigation as a result of the proposed Emu Swam Dam Project (the Project). The proposed Dam inundation area is located on the Severn River, 15km south west of the township of Stanthorpe, Southern Queensland. Additionally, associated pipelines supply water to urban and agricultural areas through what is predominantly road reserve. This assessment includes:

- An historical background for the study area;
- Further contextual research as required from the abovementioned review;
- The results of the cultural heritage field survey;
- The nature of cultural heritage significance within the study area and the potential impacts of the Project in relation to this significance; and
- Specific management recommendations for the protection of potential areas of cultural heritage significance.

A.1 Sites and Places of Cultural Heritage Significance

The following sites and places of cultural heritage significance were identified:

Site ID	Description	Individual Significance Rating	Comments
ESHAS – 1	Historic Grave	Moderate	Most likely the grave of a Chinese tin miner, evidence of Chinese miner's in the area. Requires further assessment as part of the Severn River Mining Precinct
ESHAS – 2	Stone wall	Moderate	Stone wall most likely evidence of early tin mining activities. Requires further assessment as part of the Severn River Mining Precinct
ESHAS – 3	Waterhole	Low	Evidence of longstanding water source point for agricultural activities
ESHAS – 4	Homestead Complex	Low-Moderate	Indicator of period in time when land selection began and in fair condition
ESHAS – 5	Homestead	Low	Limited outbuildings or associated infrastructure noted
ESHAS – 6	Timber Rail Bridge	Low-Moderate	Early rail bridge within the rail corridor. These bridges are becoming rarer.



Site ID	Description	Individual Significance Rating	Comments
ESHAS – 7	St. Denys Anglican Church	Moderate	Registered on the Qld Heritage Register (QHR Significance assessment provided Section 2).
ESHAS – 8	Former Site of Applethorpe Railway Station	Low	Surviving former railway station site, limited infrastructure remaining.
ESHAS – 9	Glen Aplin Rail Bridge.	Low-Moderate	Early rail bridge within the rail corridor. These bridges are becoming rarer.
ESHAS – 10	Ballandean Railway Station and Associated Grounds	Moderate	Early station complex which demonstrates characteristics within a agricultural community such as Ballandean. Now used as Tourist Information Centre.

Table A – Significance ratings for individual sites and places relevant to the Project.

The following precincts of cultural heritage significance were identified:

Description	Significance Rating	Comments
Severn River Mining Precinct	Moderate - High	True nature of Precinct is not adequately understood and requires further targeted investigation/survey. Results have the potential to lower this significance rating.
Railway Precinct	Moderate	Evidence of the former the interstate link between Brisbane and Sydney.

Table B – Significance ratings for precincts relevant to the project.



A.2 Significance Assessment for the Study Area

The cultural heritage significance of the study area was evaluated using recognised benchmarks such as *The Burra Charter and Queensland Heritage Act 1992*. These findings are summarised as:

Value	Rating	Justification
Aesthetic	Moderate	Surviving today as what has remained a relatively rural setting, the study area presents a level of aesthetic qualities related to natural and historic nature of the site (relevant to the local community).
Historic	Low-Moderate	Representing historical activities including pastoral, mining and agricultural pursuits commonplace to the area since settlement.
Scientific	Low-Moderate	Elements survive as remnants of the historic nature of the study areas, especially the pastoral, mining and agricultural pursuits, which collectively have potential to contribute to an understanding of the local areas history. (Further investigation and survey of the Severn River Tin Mining Precinct is required)
Social	Low-Moderate	Properties in the study area have a connection with the families who have lived and worked on them. Riverside Station has been in the same family for five generations.

Table C: The nature of the cultural heritage significance of the study area.

A.3 Sites for Nomination onto the Queensland Heritage Register

With the exception of the Severn River Mining Precinct which requires further quantification before a suitable discussion can be completed (See Recommendation 1), no sites or places were located within the study area contain levels of cultural heritage significance important to Queensland under Section 34 (1) of the *Queensland Heritage Act 1992*.

No sites or places are therefore recommended at this point for nomination to the Queensland Heritage Register as a result of this Cultural Heritage Survey.

A.4 Impact to Significant Sites

Four (4) sites and one (1) precinct of cultural heritage significance within the study area are directly impacted by the proposed project. These are identified in Table D and E. This impact is further discussed in Section 7.



Impact type	Impacted site/s	Individual Significance Rating
Direct impact	ESHAS – 2 Stone wall	Moderate
Direct impact	ESHAS – 3 Waterhole	Low
Direct impact	Homestead Complex	Low-Moderate
Direct impact	Homestead	Low

Table D - Historic sites impacted by the project.

Impact type	Impacted precinct	Significance Rating
Direct impact	Severn River Mining Precinct	Moderate-High

Table E - Significant precincts impacted by the project.

A.5 Conclusions and Recommendations

Most importantly, significant attempts were unable to determine the true nature of cultural heritage significance within the Severn River Mining Precinct, and this report recommends further assessment, survey and management. This was mainly due to extremely low ground surface visibility as a result of dense grass cover in the described area. Improvement of ground surface visibility along with a well researched and planned systematic survey of the area is required to determine the true nature and significance of this site prior to works commencing.

From a heritage perspective (and outside the discussion of potential within the Severn River Mining Precinct above), this report has concluded that the study area contains, at best, moderate levels of local cultural heritage significance. Assuming the recommendations below are suitably implemented, this report finds the nature and level of impact by the Project is manageable.

Recommendation 1 – Avoidance of Sites

The best form of cultural heritage management is avoidance of impact on sites and places of significance. It is recommended that the design of the Project take into account each of the heritage sites and places discussed in this report, and, where possible, avoids impact.

Of particular note is the Railway Precinct which adjoins the road reserve and subsequently the pipeline corridor in many places. Elements and sites within this Precinct therefore require special consideration throughout the life of the Project.



Recommendation 2 – Further Survey of Severn River Mining Precinct

The area identified as the Severn River Mining Precinct will be impacted by inundation as a result of the project. This Precinct includes the grave (ESHAS 1) and the stone wall (ESHAS 2).

Due to the potential for archaeological material to remain *in situ* in this vicinity of the study area, it is recommended that a systematic assessment of this immediate area be conducted to ensure that the type and extent of any surviving archaeological material is researched, investigated, recorded and mitigated (if required) using acceptable archaeological methods prior to any development or impact on or below ground in this area. This assessment can be carried out in stages according to construction phases of the Project. On the conclusion of this investigation, recommendations will be made in relation to suitable management of the precinct. Depending on the results of this survey, recommendations may include:

- The preparation of a conservation management plan for the Precinct which includes a comparative analysis of the Precinct within the district and Queensland; and
- At minimum, management strategies will need to be implemented for the Precinct, especially for the grave and the stone wall.

Recommendation 3 – Recording of Sites

The Homestead sites (ESHAS 4 and 5) and the waterhole (ESHAS 3) will be directly impacted as a result of the Project.

This report recommends a basic level of photographic recording is conducted which captures the nature of the item and its context within the cultural environment within the study area prior to works commencing in the area.

Recommendation 4 – Heritage Management Plan (HMP)

A variety of management strategies are required in order to mitigate cultural heritage values identified within this report such as unexpected cultural heritage material or sites found during the construction stage of the Project.

Accordingly, a Heritage Management Plan (HMP) should be prepared for the entire Project Area to provide the Project team with a suitable strategy to protect sites and place of cultural heritage significance (completed prior to the construction phase of the Project commencing).



The HMP will provide suitable strategies for the inundation, urban and irrigation pipelines especially in areas of historic heritage potential such as towns and villages and associated infrastructure. The HMP should also include policies and procedures abovementioned for management of archaeological finds during the Project.

Additionally, this study recommends that diligence should be practiced during works conducted within the study area, particularly during any clearing or construction phases associated with initial preparation of the project area. This diligence should include specifically instructing crews of their obligations to look for cultural heritage material, and handing out educational leaflets at Workplace Health and Safety meetings. These leaflets should inform the workers what archaeological material may look like, and give them clear instructions on what to do if they find anything.

Recommendation 5 – Variation to the Project Design

Due to the nature of the study, variation of the footprint of the proposed development will require reassessment to determine the nature of the impact on sites and places of cultural heritage significance. Variation of footprint would include:

- An increase in inundation on the ground greater than 20m;
- Variation of the pipeline corridor outside of road reserve within towns and villages;
or
- Variation of the pipeline corridor in other areas greater than 20m.



1 INTRODUCTION

Stanthorpe Shire Council commissioned ARCHAEO Cultural Heritage Services Pty Ltd (ARCHAEO) to conduct an assessment of the historical cultural heritage potential of a portion of land to be impacted upon by the proposed Emu Swamp Dam and associated irrigation and urban pipelines. The proposed Dam inundation area is located on the Severn River, 15km south west of the township of Stanthorpe, Southern Queensland (Figure 1). The associated pipelines are located in an around the town of Stanthorpe extending approximately 20km to the north, west and south of the town area (see Figures 2, 3 and 4).

This report presents the results of cultural heritage surveys and assessment carried out between June and September 2007.

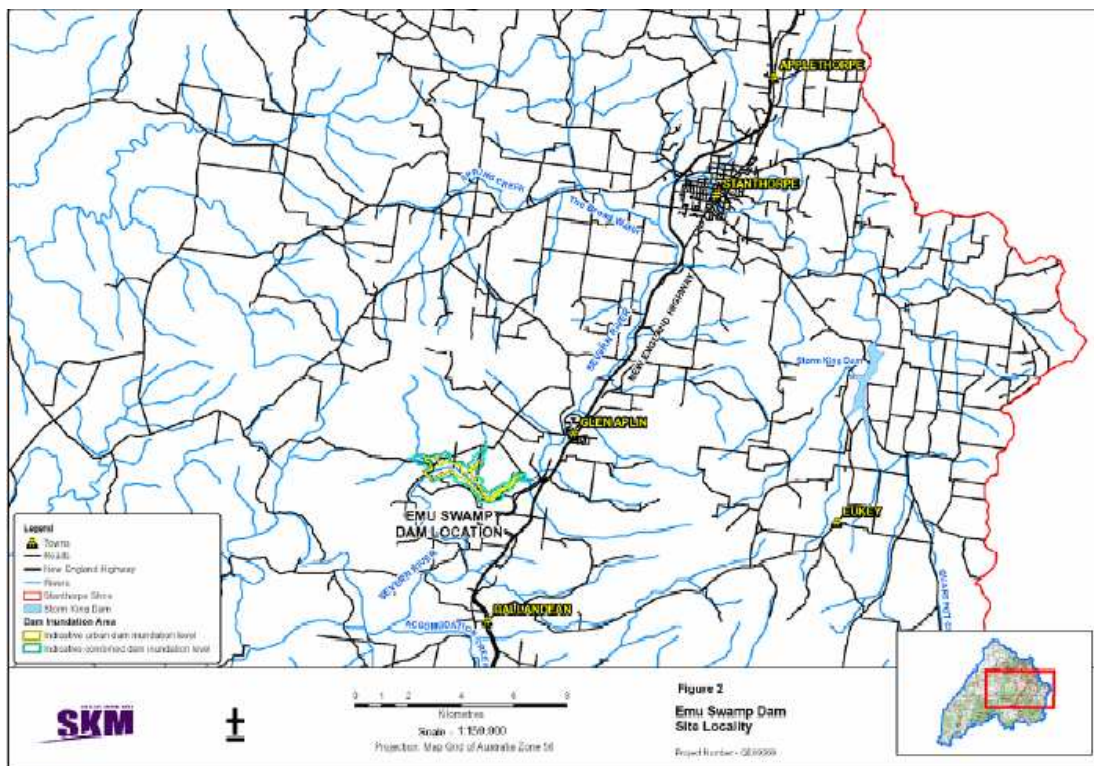


Figure 1: Location of the study area and surrounds, Southern Queensland (Map courtesy of SKM).

The results of this survey will be submitted to the Environmental Protection Agency (EPA) and evaluated under Section 7 of the Queensland Heritage and Other Legislation Amendment Act 2003. (Areas and objects that relate to Queensland's historic heritage are managed under Part 7 of the Queensland Heritage and Other Legislation Amendment Act 2003).



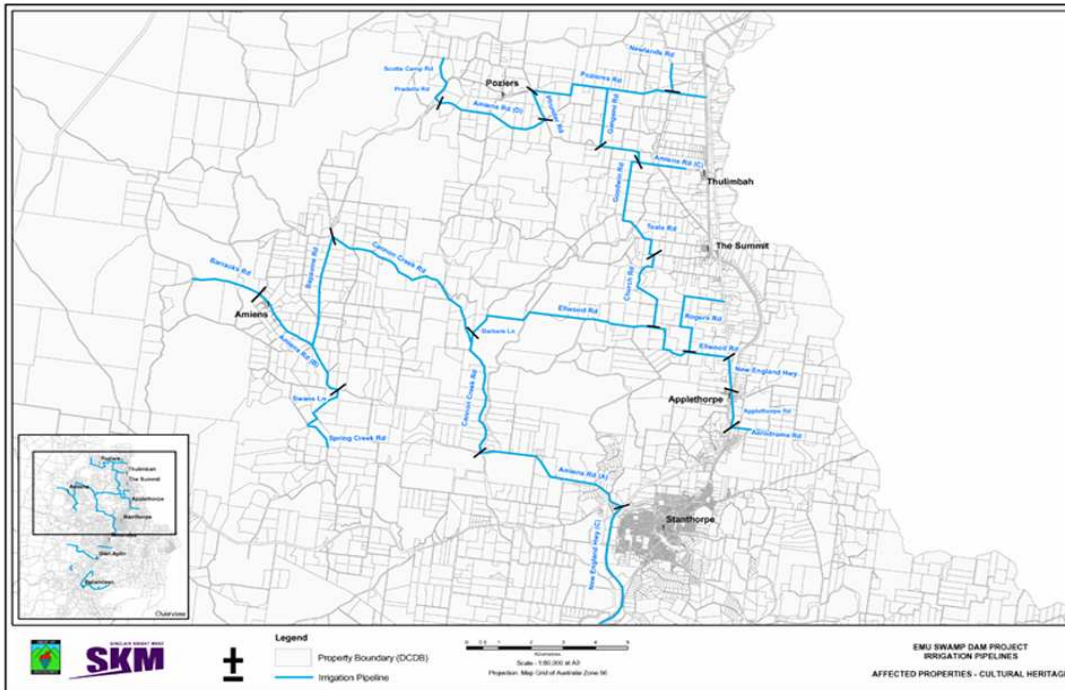


Figure 2: Irrigation pipelines north of Stanthorpe (map courtesy of SKM).

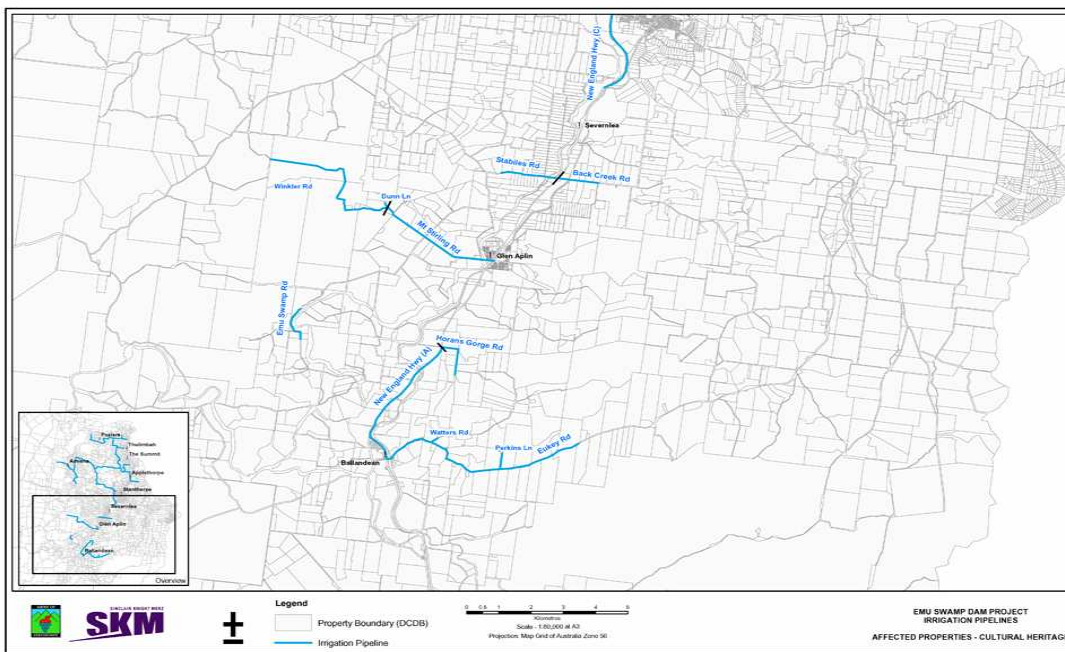


Figure 3: Irrigation pipelines south of Stanthorpe (map courtesy of SKM).



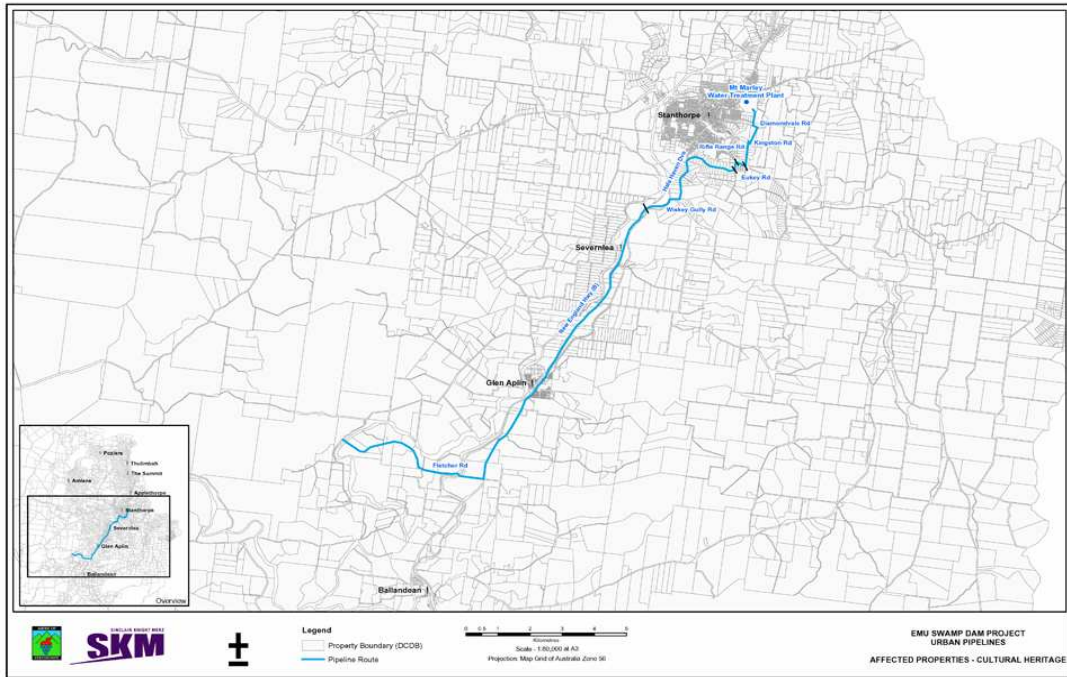


Figure 4: Urban pipeline south of Stanthorpe.

1.1 Purpose of the Study

The purpose of this report is to qualify the level of cultural heritage significance relevant to the inundation area and associated pipeline areas directly affected by the proposed Emu Swamp Dam project (hereafter referred to as the project) and recommend the suitable management of these heritage values. Contextual research was undertaken to determine the existence, extent and probable levels of significance of the area prior to the field survey taking place.

This report presents the results of the Historical Cultural Heritage Survey, and includes:

- a summary of existing research completed for the history and environment of the area;
- the results of the cultural heritage field survey;
- the nature of cultural heritage significance within the study area and the potential impacts of the project in relation to the study area;



- specific management recommendations for the protection of potential areas of cultural heritage significance.

The scope of this study acknowledges that the archaeological record is both fragile and non-renewable, and any major disturbance of the environment potentially poses a threat to this valuable cultural resource.

1.2 Dates and Duration of the Work

Stanthorpe Shire Council commissioned ARCHAEO to complete the survey during June 2007. Research and field survey were undertaken at this point. Consultation with lease and land holders was carried out in August and September 2007.

1.3 Personnel

Ben Gall and Stefani Blackmore of ARCHAEO Cultural Heritage Services (ARCHAEO) undertook the visual inspection of the study area, consulted the land holders and assisted with the preparation of the report. Geoff Ginn completed the historical background research and Ben Gall completed the final draft of the report.

This work was completed under **EPA Cultural Heritage Permit: CHST00227007**.

1.4 Nature of the Impact (The Project)

The nature of the current project is such that Stanthorpe Shire Council requires cultural heritage surveys to be carried out over portions of 32 properties. The Dam inundation area will impact upon a maximum of 196ha of land and the urban and irrigation pipeline routes impact upon 125.2km of primarily road reserve. The properties affected by the project are listed in Table 1.

Table 1 - Summary description of property that the project impacts.

Impacted Properties		
Lot 1/ RP 55215	Lot 2/ RP 31768	Lot 4674/ PH 512
Lot 1/ RP 52709	Lot 1/ RP 31766	Lot 61/ SP 122464
Lot 1/ RP 904551	Lot 2/ RP 59328	Lot 4/ RP 41874
Lot 2/ RP 12336	Lot 132/ SP 183767	Lot 42/ BNT 215
Lot 7/ RP 222897	Lot 131/ SP 183767	Lot 2/ SP 145251
Lot 89/ RP 902806	Lot 39/ RP 1522	Lot 221/ SP 122463
Lot 1/ RP 902806	Lot 1/ RP 49661	Lot 2/ RP 162655



Impacted Properties		
Lot 2/ RP 122990	Lot 2/ RP 63905	Lot 2/ RP 12375
Lot 2/ SP 145917	Lot 470/ B3415	Lot 212/ SP 122455
Lot 87/ BNT 288	Lot 1/ RP 63905	Lot 2/ RP 896231
Lot 101/ BNT 728	Lot 95/ BNT 4	

1.5 Organisation of the Report

The report discusses:

- Background information relevant to the project, including historical research;
- Cultural heritage investigation, including site survey;
- Levels of significance of and likely impacts on identified cultural heritage; and
- The potential impact of the project on historical cultural heritage and recommendations and guidelines relating to the management of such impacts.

1.6 Historic Cultural Heritage Legislation

Knowledge of cultural heritage legislation is essential when assessing sites, places or items of cultural heritage significance. The following section discusses both National and State Legislation relevant to Cultural Heritage.

1.6.1 National Legislation

At the national level, the ***Environment Protection and Biodiversity Conservation Act 1999*** is now the key national heritage legislation, and is administered by the Commonwealth Department of the Environment and Heritage. In addition, the following legislation is relevant to heritage:

The ***Australian Heritage Council Act 2003*** provides for the establishment of the Australian Heritage Council, which is the principal advisory group to the Australian Government on heritage issues.

The AHC Act also provides for registration of places considered of national significance on the National and Commonwealth Heritage Registers and the Register of the National Estate (RNE) or the Australian Heritage Places Inventory (AHPI).

1.6.2 State Legislation

Historical cultural heritage matters are covered in the *Queensland Heritage Act 1992* and subsequent amendments, (which includes the *Queensland Heritage and Other Legislation*



Amendment Act 2003). This legislation provides for a listing of places within a Heritage Register. Protection is offered to places that have been entered on the Queensland Heritage Register according to a set of criteria.

The Queensland Heritage Act 1992 and subsequent amendments does not apply to:

- (c) a place that is of cultural significance solely through its association with Aboriginal tradition or Island custom; or
- (d) a place situated on Aboriginal or Torres Strait Islander land unless the place is of cultural heritage significance because of its association with Aboriginal tradition or Islander custom and with European or other culture, in which case this Act applies to the place if the trustees of the land consent. (Section 61) (Please note: the Act is now being used sufficiently broadly that old mission sites are being heritage registered).

1.6.3 Local Government Legislation

Cultural Heritage is not discussed in the Stanthorpe Shire Planning Scheme however a Cultural Heritage Study, commissioned by Stanthorpe Shire, was undertaken in 2003. Recommendations were put forward concerning the development of a register of sites for the region.

1.7 Previous Reports

The following reports provided additional information related to the study area and were regularly consulted throughout the course of work.

Table 2 – Previous reports.

Year	Consultant	Report Title
2000	Bonhomme Craib & Associates	The Proposed Emu Swamp Dam Project, Stanthorpe QLD.
2003	Conservation Management Planners and Associates	A Thematic History and Field Survey Assessment of the Cultural Heritage, both Built and Natural, in the Stanthorpe Shire, Queensland.



2 BACKGROUND INFORMATION

The following background information is not intended to be a comprehensive report of Emu Swamp and the pipeline routes in the study area; rather it provides a suitable platform for discussions regarding cultural heritage significance and management recommendations (in compliance with the *EPA Guidelines for Historical Archaeological Studies*).

Although the project affects only a portion of Stanthorpe Shire, it is important to provide background information for the entire area to guide discussions later in the report.

2.1 Biogeographical Background

The Stanthorpe Shire is located two and a half hours south west of Brisbane, on the New England Highway to Sydney. This Shire borders New South Wales to the south and east, the Inglewood Shire to the west, and the Warwick Shire to the North.

Geologically the study area is typified by what is known as “Stanthorpe Granite”; which consists of “high steep sided hills with broad bare spheroidal surfaces, and huge tor and perched boulders”. This geological formation has played an integral role in the historical, social, economic, and land use development of the shire (Simmonds 1958:15).

The study area is located within the Stanthorpe Plateau province of the New England Tableland Bioregion (in accordance with Sattler and Williams 1999). This region receives an annual rainfall of 800mm and the vegetation of the region is typified by Eucalyptus woodland, open forest and tall open forest, often with New England Blackbutt; localised montane shrubland and swamp.

2.2 Historical Background for the Study Area

The following discussion is not intended to be an exhaustive historical treatment of the Project area. It is based on a period of library and archival research in relevant documents and secondary sources, and is intended to provide an historical overview of the broad areas under consideration.

2.2.1 The Stanthorpe Shire

Alan Cunningham was the first European to sight the area around modern Stanthorpe during his explorations of the Darling Downs in 1827 and 1828 (Hall 1988: 5-9). During the 1840s the shire was occupied by settlers on extensive pastoral runs and by 1844 a number of pastoral runs including “Maryland’ [M.H. Marsh], ‘Pikedale’ [John Pike], ‘Ballandean’ [McLeod and Wright], and ‘Glenlyon’ [Henry Nicol] had been taken up”



(Harslett & Royle, 1980: 7-9). Although the eventual sub-division of these runs into smaller pastoral holdings gave some impetus to population growth in the region, it was not until the discovery of tin in 1872 that the shire was occupied on a substantial scale. The mining 'rush' caused by the discovery of payable minerals gives Stanthorpe the unique status as the only town on the Darling Downs not to owe its foundation to agriculture (Harslett & Royle, 1980: 67).

In the following years agriculture, predominantly in the form of fruit production, displaced mining as the major economic activity of the region. However, the shire also derives economic benefits from other agricultural activities, tourism, and some minor service and manufacturing industries. Although half of the shire's present population of approximately 10,600 people reside in the town of Stanthorpe, the shire offers a "rich and diverse lifestyle" (Stanthorpe Shire Council, 2007b: 7). This diverse lifestyle is a result of the historically varied settlement and land use patterns that have occurred throughout the region since European Settlement.

2.2.2 The Severn River Region

The Severn River Region is located in the south-eastern regions of the contemporary Stanthorpe Shire. The region to the south of the Shire's administrative centre at the town of Stanthorpe is centred on Glen Aplin and Ballandean. Like much of the shire, the dominant geographical feature is Stanthorpe Granite. This granite has provided mineral resources and had an effect on the pastoral and agricultural activities undertaken in the region. In addition, the Severn River, that runs "through deep rock pools ... and over waterfalls and rapids" until eventually draining into the Murray-Darling River system has been an integral factor in European land use and settlement in the area (Simmonds, 1958: 15). Throughout the course of European settlement attempts have been made to use this river to assist in mining, agricultural production, and to a lesser extent recreational pursuits.

This geographic location combined with the topographical features has played an important role in the social and historical development of the area around the Severn River and its main points of settlement. Since the first European settlement of the area along what was originally known as the Sovereign River attempts have been made to exploit the areas natural resources (Harslett, 1987: 27). The range of uses has included grazing, pastoral production, mining, and horticulture. The utilisation of the area's natural resources has had a tremendous effect on not only the rural land use but the development of the area's two main centres of settlement, Glen Aplin and Ballandean.

2.2.2.1 Early European Settlement

Like much of the territory from the modern day New South Wales/Queensland border to Toowoomba, credit is given to explorer Alan Cunningham as the first European to discover the area. Cunningham made two expeditions into the region, the first in 1827



from the New England region and the second in 1828 seeking a route from the convict settlement at Moreton Bay to the Darling Downs (Nutting, 1974: 1). Cunningham is reputed to have camped in the vicinity of the present day Stanthorpe Shire on the fifth of June 1827 (Swann & Queensland Department of Primary Industries, 1972: 1-1). Although Allan Cunningham's opinion that the "luxuriant pasturage" of the Darling Downs would provide ideal grazing land was widely publicised, European occupation and settlement of the region did not immediately follow (Hall, 1988: 5). Regulations prohibiting any free settler from coming closer than 50 kilometres to the Moreton Bay convict settlement combined with the area's remoteness from accessible transport routes to ensure that European settlement was limited.

While there is some evidence of illegal occupancy, or squatting, on the land in the Severn River area prior to the 1840s such claims remain conjectural. Conjecture suggests the first settler in the area was future Premier of Queensland Robert Ramsay Mackenzie who reportedly occupied what was to become Ballandean pastoral run in 1839 (*Ballandean State School*, 1984: 10). This suggestion remains disputed. What can be established however is that by 1844 McLeod and Wright had taken up 'Ballandean' and Henry Nicol had occupied 'Glenlyon' through legitimate means (Harslett & Royle, 1980: 7). In 1870 the Ballandean Homestead was substantially improved (possibly by Nicol) to a "single-storeyed, rendered (stuccoed) brick building with a central rectangular core surrounded by wide verandahs" and the importance of this site as the first significant homestead in the region has seen it granted State Heritage protection (Environmental Protection Agency, 2007a).



Figure 5: The Ballandean Homestead was the first substantial building erected in the Severn River district. (Courtesy EPA QPWS).



By 1848 a number of other runs in the area had been taken up forcing some boundary realignments (Conservation Management Planners and Associates, 2003). These runs were primarily used to graze sheep and cattle and during the 1850s they attracted settlers of a variety of origins including English, German, and Chinese (Harslett & Royle, 1980: 20). However, the population and settlement of the area remained stagnant until the 1868 *Alienation of Crown Lands Act* and the subsequent land reforms it brought that saw the large pastoral runs resumed and subdivided into smaller parcels of the land (Harslett, 1987: 75). This “milestone in Queensland land legislation” brought an influx of residents to the area attracted by the possibility of smaller holding that did not need a great deal of initial capital or resources to manage (Harslett & Royle, 1980: 23).

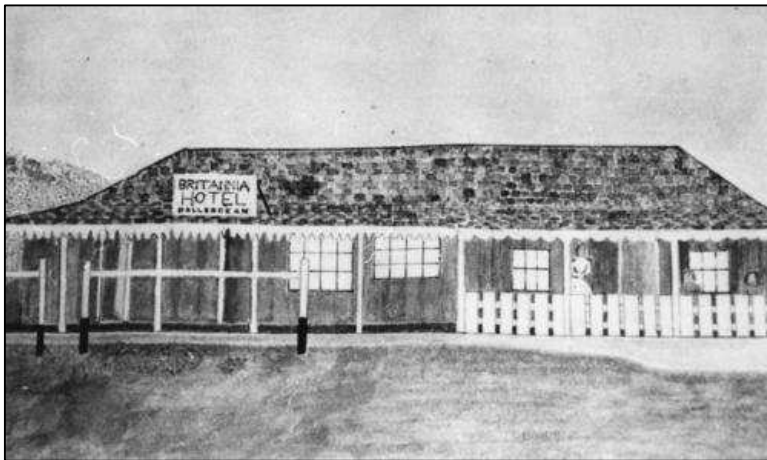


Figure 6: The Britannia Hotel ca. 1871. The Hotel was built on the site of the current day town of Ballandean. (JOL 121055)

Due to this increase in population the towns of Glen Aplin and Ballandean began to become discernable entities. Both of these towns were built close to the New England Highway between Brisbane and Sydney making them stopping point along the journey and ideal point at which to receive supplies and send goods to market. The first recorded close settlement of Ballandean occurred in 1872 when Thomas Fletcher built the Britannia Hotel on the site of the present day township (*Ballandean State School*, 1984: 24). Like the pastoral run, the locality’s name probably came with Robert McKenzie from Scotland, where its Gaelic form means “Dwelling in the Valley” (*Ballandean State School*, 1984: 93). Glen Aplin on the other hand was named in honour of Oliver Dyson Aplin, an early and prominent settler in the district. The 1868 land reforms were integral to the development of Glen Aplin as the town become a service and supply point for the increasing numbers of pastoralists (Harslett, 1987: 29). The importance of the town for the local area increased over time as during the 1890s there was no other substantial settlement between it and Stanthorpe (Harslett, 1987: 31).



2.2.2.2 The Development of Mining

While pastoral activities had given an impetus to population growth and some urbanisation in the region, it was the influx of prospectors lured by the area's mineral deposits that significantly boosted the area's growth. While some speculation remains that tin had been discovered by Joe Greer in 1854 (*Ballandean State School*, 1984: 19), it was not until the 1872 announcement that the mineral had been discovered in commercial quantities that the area experienced a mining rush (Swann & Queensland Department of Primary Industries, 1972: 1-1). In its first week of operation in 1872 the Warwick Mineral Lands Office received 54 applications for 4200 acres of land in the shire (Harslett & Royle, 1980: 39). By 1873 Pugh's Almanac reported that "there are now several thousand of a settled population engaged" in tin mining in and around the Severn River basin (1971: 3). During this time the Severn River was diverted for the first time to supply water to the various mining claims being worked throughout the district (Harslett, 1987: 27)



Figure 7: Miners working at St. Leonard's Tin Mine, Sugarloaf Creek near Stanthorpe, ca. 1873. (JOL 159741).

Tin mining brought an influx of people to the Stanthorpe district and had an important influence on the historical, social, and economic development of the Shire.



It was not just individuals who rushed to the field; a number of public companies were also formed to exploit the area's mineral wealth. The first company to be registered for operations on the field was Mr C.A. Lee's The Pioneer Tin Mining Company which was formed in 1872 (Harslett & Royle, 1980: 34). There were a number of other public companies that sought public capital to mine tin and other minerals in the region, the largest of these was the Severn River Tin Mining Company run by a mining engineer known only as Doorey (Harslett, 1987: 28). During the ten most profitable years of the rush individual miners and public companies combined to extract 14,165 tons of tin up until May 1873 (Harslett & Royle, 1980: 34).

Accompanying this local rush were a number of other important commercial, industrial, and infrastructure developments to service mining activities. To capitalise on the mines the Stanthorpe Smelting Works was established in Stanthorpe in August 1872. Recognising the need for reliable transport infrastructure the Queensland Colonial Government completed the Southern railway line to Stanthorpe on the 3 May 1881 (Harslett & Royle, 1980: 53) and the Stanthorpe to Wallangarra railway line, completed in 1887 at a cost of £140,885, not only facilitated the exploitation of the area's mineral reserves it also brought workers and their families into the district (*Ballandean State School*, 1984: 27). Additionally, an official post office was opened in Ballandean in 1873 pointing to the rapid growth in the area and the need for reliable communication infrastructure (*Ballandean State School*, 1984: 65).

This population growth had a substantial affect on the towns of Ballandean and Glen Aplin. To administer this growing population the Ballandean District Board was proclaimed on 11 November 1879 with the town of Ballandean remaining the administrative centre until the merger with Stanthorpe board in 1880 to form the Stanthorpe Divisional Board (*Ballandean State School*, 1984: 42-43). Despite this merge, by 1885 Ballandean could boast a post office, school, stores, butchery, billiard room, and race course (*Ballandean State School*, 1984: 24). Glen Aplin experienced similar growth and by 1881 a branch of the Commonwealth Bank had opened in the town to service the needs of the surrounding population (Harslett, 1987: 28). The population growth in the surrounding areas also led to the opening of a primary school in Glen Aplin to cater for the educational needs of children from a variety of locales including Moxely's Crossing, Emu Flat, Mount Misery, and Accommodation Creek (1887).

While mining was seminal to this growth it was not the only industry in the region during the period. Throughout the mining 'boom' other forms of agriculture continued. Many farmers engaged in mixed farming practices that included the grazing of cattle and sheep, and the cultivation of wheat, corn and vegetables on their land (*Ballandean State School*, 1984: 29). Access to reliable transport links meant that farming remained an economically viable activity. The decision of a number of agriculturalists in the area to cultivate orchards had far reaching consequences for the area.



2.2.2.3 The Development of Fruit Farming

After the tin mining rush ended in the early 1880's the Severn River district suffered a population decline (Swann & Queensland Department of Primary Industries, 1972: 1-1). So dramatic was the decrease in population that the town of Ballandean, the former administrative centre of the short-lived Ballandean Divisional Board was abandoned altogether by 1898 (*Ballandean State School*, 1984: 26). Similarly the Glen Aplin School struggled to stay open in the first decade of the twentieth century pointing the exodus of families from the region (Harslett, 1987: 39). However, the experiments of a number of land holders with fruit cultivation were to prove a boon to the area as it gave birth to a new, profitable industry that rejuvenated the shire as a whole, and the Severn River district specifically.

Again some discrepancy exists as to who was the first residents to plant fruit trees in the district. However the credit for introducing orchards into the area is frequently given to T.H. Fletcher who planted a small orchard near his Britannia Hotel in 1872 (*Ballandean State School*, 1984: 44; Queensland Government Intelligence and Tourist Bureau, 1919: 13). Fletcher's initial experiments did not immediately spread throughout the district as mining continued to dominate the local economy and land use. Additionally, the extended period needed for an orchard to mature made it unappealing to many land holders and potential farmers. However, a combination of favourable climate, accessible railway links, and government legislation spurred the growth of the local fruit industry in the early years of the twentieth century (Harslett & Royle, 1980: 16).



Figure 8: Livingston's Orchard at Stanthorpe, ca. 1915 (JOL 194285)

Fruit cultivation became the most significant industry throughout Stanthorpe following the ending of the mining boom in the late nineteenth century.



Further government-mandated subdivisions of the land in the Severn River area allowed the creation of small farms run by single families and allowed many former miners to establish small orchards in the district. To sustain their farms while they waited for the fruit trees to mature, these small land holders began a practice that was to continue for many years of planting vegetables between the rows of trees. Aside from these small land holdings there were a number of larger farms in the area also. The most prominent began in 1897 when the Smith family began to cultivate an orchard that by 1906 covered 45 acres of land that closely followed the railway line between Ballandean and Glen Aplin (Harslett & Royle, 1980: 74).

The area's cool climate, abundance of water, and proximity to rail and other transport links meant that fruit farming soon became the most important industry in the district. By 1913 it was felt that the "Smiling' orchards seen down the valley to Ballandean gave an air of confidence for the future" of the Severn River area and the Stanthorpe Shire as a whole (Harslett & Royle, 1980: 81). The proliferation of both small and large farms meant that by 1917 4,833 acres of land in the Stanthorpe Shire were under cultivation for fruit alone (Queensland government Intelligence and Tourist Bureau, 1919:13). Like most of the Shire south of Stanthorpe, the Severn River district tends to feature stone fruit, grapes, and tomatoes due to its hilly terrain (Conservation Management Planners and Associates, 2003).

Accompanying the increasing cultivation of orchards was a number of support industries. In 1902 at Lyra Jack Geyer established the first sawmill in the Severn River district dedicated to cutting timber for the manufacture of fruit cases. Geyer's venture was later imitated by R Westbury at Ballandean in 1909 and a number of small operations with the vicinity of Ballandean and Glen Aplin followed (*Ballandean State School*, 1984: 66). The Beco Co plant at Passmore was the first canning plant to operate in the Stanthorpe Shire when it opened in 1914. Two more plants were opened in 1922, the Stanthorpe Co-operative Canning and Jam Preserving Co. also at Passmore and the Pikedale Soldiers Jam Canning and Preserving Co, at Amiens pointing the increasing production of fruit throughout the shire (Harslett & Royle, 1980: 83). Taking advantage of technological developments Harry Archibald built a private cold store at Pozieres in 1922 and in 1945 his Iona Enterprises built a public one at Applethorpe with a storage capacity of 20000 cases (Harslett & Royle, 1980: 84). While the Pikedale plant and Archibald's cold store were in the northern part of the Shire, produce from around Glen Aplin and Ballandean was still sent there for processing.

Several attempts were also made to organise fruit growers in the area into cooperatives with the first occurring in 1899 when the Lyra Cooperative Syndicate was formed. This was followed by the Ballandean and District Fruit Growers Association in 1914 (*Ballandean State School*, 1984: 46). These associations advocated for increased infrastructure and improved farming techniques in the district that had become "the largest supplier of fruit and vegetables in Queensland" by 1919 (Queensland government Intelligence and Tourist Bureau, 1919: 18). The importance of fruit cultivation as an



industry for domestic and export markets was confirmed in 1934 when a research station was established at Applethorpe to help improve crop quality and yields (*Stanthorpe & district*, 1934).

However, fruit was not the only industry in the Severn River Region in the first decades of the twentieth century. A Queensland Government publication in 1919 reported there were 101,369 sheep and 17,178 beef cattle in the region, in addition to pig and poultry-raising, apiculture, and almond, walnut and peanut farms (Queensland Government Intelligence and Tourist Bureau, 1919: 10-15). In addition to these agricultural industries, the Sundown area 14 miles west of Ballandean continued to sporadically produce an array of minerals including tin, cassiterite, arsenopyrite, molybdenite and wolfram (Simmonds, 1958: 26-28). The Sundown Tin and Copper Mine was registered with £10,000 capital in 1924 and relied on a water pipeline from the Severn River to power a 10 head stamp battery (*Ballandean State School*, 1984: 20). The area's natural beauty and mountain air also saw it touted in 1934 as "the most famous health resort in Queensland" luring day tourists, holiday makers, and convalescents (*Stanthorpe & District*, 1934).

This array of primary and secondary industries provided a boost to the towns of Glen Aplin and Ballandean. The Glen Aplin school that had struggled to stay open due to falling enrolments in the first decade of the twentieth century benefited greatly from the influx of people to the region as school attendance began to rise with the increasing numbers of successful orchards (Harslett, 1987: 39-40). Ballandean Township, which had been abandoned in 1898, was re-born in 1916 due to the growth of the fruit industry and the re-opening of the Sundown mine between 1916 and 1924. By 1916 a School of Arts was opened in the town and during the 1920s a butchery, branch of the Primary Producers Bank (1923), saddlery and boot shop (1923), and blacksmiths shop (1924), were opened to cater to the increased population of Ballandean and its surrounds (*Ballandean State School*, 1984: 26). These developments lead contemporary commentators to opine that in the future these "townships are certain to become commercial centres of even greater importance than they are to-day" (Queensland government Intelligence and Tourist Bureau, 1919: 32).

2.2.2.4 Developments Post War World II

In the years following the end of the Second World War the district's reliance on primary industries continued to shape not only its social and commercial development but also major infrastructure decisions. The economy of the region continued to be dominated by three major industries – fruit and vegetable growing, grazing and mining. Subsequently the area's character continues to reflect the nature of these industries.

The most important industry in the Severn River area following 1945 remained fruit farming. By 1965, 505 of the 807 listed holdings in the Shire of Stanthorpe were engaged in fruit farming, many of these in the Severn River area. Farmers continued to engage in mixed cultivation practices planting vegetables in the rows between their fruit trees and



raising some cattle or pigs on separate, dedicated sections of their holdings (Swann & Queensland Department of Primary Industries, 1972: 63). In addition to traditional fruit farming the district began to embrace viticulture. Although T.H. Fletcher had first planted grapes around Ballandean in the 1870s the wine making industry did not begin to develop at a commercially viable level until the 1960s (*Ballandean State School*, 1984: 55-57). Since then a number of wineries have been established in the area, the most prominent being Angelo Puglisi's Ballandean Estate, the winner of the Premier's trophy for best Queensland white wine at the 2002 Brisbane International Wine show and an exporter of wine to the USA (Grant-Taylor, 2002: 31; "Wine Winner: Ballandean Estate has won the top prize at this year's Brisbane Wine Festival", 2002). The continued dominance of primary production meant that by 1972 horticulture brought \$10 million in revenue to the Shire (*Stanthorpe Apple & Grape Harvest Festival and Centenary Celebrations*, <1972>). Today agriculture remains the largest employer in the region (Stanthorpe Shire Council, 2007a).

To aid the agricultural industry a number of supporting infrastructure developments have been undertaken. Importantly dams at Coolmunda (1968), Glenlyon Dam (also known as Pike Creek Dam), and Storm King were built in the area to provide reliable water for local farms whilst simultaneously providing the extra benefit of community recreation facilities (*Stanthorpe Apple & Grape Harvest Festival and Centenary Celebrations*, 1972). This demand for reliable water supplies has continued and by 1984 the Queensland Water Resources Commission (QWRC) was investigating the means of diverting water from the Severn River to the catchments of Glenlyon Dam on Pike Creek by a tunnel (Thirnbeck, 1984: 1).

While mining remained an integral element of the local economy it was not as well supported by necessary infrastructure development after 1945. Following WWII a number of fields in the area continued to be exploited. The Sundown field, 14 miles west of Ballandean was worked sporadically until 1958. Similarly the Lord Nolan, Copper King, Queen, and Wall's Claim, all roughly 6 miles north-west of Ballandean yielded an array of minerals including cassiterite, arsenopyrite, molybdenite and wolfram until they closed down around 1958 also. The lack of reliable and safe transport infrastructure limited the commercial viability of these and other possible deposits in the area (Simmonds, 1958: 25-26). The Kilminster fields for example, only five miles west of Ballandean, could only be reached by unsealed roads that became impassable in wet weather that often caused the Severn River to flood (Robertson, 1964: 1). This lack of reliable road infrastructure meant that by 1958 only one person was "actively working tin ground" in the Severn River region (Simmonds, 1958: 51).

With the commercial success of the wine industry in the Granite Belt Region, the Severn River District also began to benefit from renewed tourism growth. By 1996 there were 18 wineries established in the Granite Belt that exported wine out of the region as well as at the cellar door ('Come To Wine Country Up North', 1996). This increase in wineries attracted both day tourists and short holiday makers to the region. A variety of small



boutique style hotels and bed and breakfast cottages have been established such as Ballandean Lodge (Gearing, 2005) and a range of festivals such as Glen Aplin's annual Olive Harvest Festival in May have been created to attract and maintain more tourist visits to the Granite Belt (Hanrick & Cokley, 2000: 106).

2.2.2.5 Community development in the Severn River district

Accompanying the settlement and development of the Severn River district, a range of community services have emerged. These services have reflected the fluctuating population patterns and the varying demands of the community. Notably, a number of these services have been greatly affected by the isolation of some small rural communities and has caused a continuing process of amalgamation and consolidation of community provisions such as church parishes and schools.

As the area around the Severn River was settled the local community recognised the need for schools for their children. On 4 July 1887 the Glen Aplin School was opened after a period of agitation and work by the local community. Students came from a variety of locales including Moxely's Crossing, Emu Flat, Mount Misery, and Accommodation Creek to attend the school (Harslett, 1987: 36). Although between 1900 and 1910 the school struggled to keep enrolments at a high level, the take up of smaller holdings for fruit cultivation by ex-miners and new settlers helped stabilise and then increase the school's enrolments (Harslett, 1987: 39-40).

As the population on the western side of the Severn River continued to grow the school was moved to a new, more accessible site on the 28 September 1928. As a part of this re-location the Glen Aplin and Mount Stirling Schools amalgamated and the school's enrolment grew during this period until it peaked at 74 in 1942. Throughout the 1960s the school's enrolments continued to increase and it was officially upgraded to a class IV state school (Harslett, 1987: 49 -60). From 2005 to 2006 the student population of the school rose from 65 to 83 students across grades 1 through 7 and it remains an institution that services not just the town of Glen Aplin but the surrounding rural communities also (Cole, 2006).

The Ballandean State School was opened in 1909 on a site roughly one kilometre from the town of Ballandean. In 1921 the school re-located to the site it continues to occupy today. As the population of the area continued to rise after this move, the school's attendance steadily rose and when it celebrated its 50th anniversary it was calculated that 900 students had attended Ballandean State School (*Ballandean State School*, 1984). In the intervening years the school's buildings have been added to and extended to cater for the changing needs of the curriculum. During the 2006 school year Ballandean State School had 89 enrolled students from Prep to year 7 (Wenban, 2007).

In addition these a number of schools were also opened in smaller rural locales to compensate for the often difficult journeys pupils would have otherwise had to make to



attend school in the large urban centres. In the vicinity of Glen Aplin the Thorndale school (eight kilometres from Glen Aplin) opened 29th May 1914 and was closed at the end of 1964 while Mount Stirling Provisional School was opened in 1919 on land donated by Mr James Smith (Harslett, 1987). Closer to Ballandean the Lyra State School opened 7th November 1893 and closed on 20th June 1966. Other early schools included those at The Somme, Wyberba, Glen Roy and Severn River (*Ballandean State School*, 1984: 83). By 1984 all of these schools had closed or “amalgamated to one central school at Ballandean” (*Ballandean State School*, 1984: 5)

Over the course of European settlement in the Severn River district a variety of religious denominations have provided services and helped bind the community together. Throughout the district the first services were often conducted by travelling ministers and held in private homes, school buildings, or public halls. However a number of dedicated churches have been erected in Ballandean and Glen Aplin. The first of these areas was the Ballandean Presbyterian church that was completed in 1906 (*Ballandean State School*, 1984: 61). The first church completed in Glen Aplin was the Presbyterian Church that celebrated its first service on 14 August 1926 (Harslett, 1987: 86); it was later joined by the Anglican Church in 1931 to provide places of worship for the residents from the surrounding area.

In addition to these education and religious services a number of civic organisations and facilities have also developed. The Ballandean branch of the Country Women's Association (C.W.A.) was formed in 1939 to assist the local community, especially county women, with a range of needs not attended to by shire or government services (*Ballandean State School*, 1984: 80). Civic minded residents in both Ballandean (1916) and Glen Aplin (1927) built Schools of Art for the continuing education of citizens and to serve as defacto public halls and function venues. In 1925 a 35 acre sporting facility was built in Ballandean that became “one of the finest and most picturesque spots grounds in the Stanthorpe district” and featured facilities for a range of sports including tennis, cricket, soccer, cycling, basketball, and hockey all accommodated (*Ballandean State School*, 1984: 69).

2.2.3 Northern Stanthorpe Shire

While the land to the north of the town of Stanthorpe was settled at approximately the same time as that in the Severn River District, its historical development has been separate from and markedly discrete to the area south of Stanthorpe. Still geologically part of the Granite Belt region, the area's climate and location has meant it has produced different varieties of fruit. The area was also one of two in Queensland chosen to participate in the Soldier Settlement program following World War I and although this plan was a “costly failure” it still had an effect on the historical and social development of the northern part of the Shire (Johnson, 2002: 414). In addition the New England Highway and the construction and expansion of railway lines in the area that have played important roles in the settlement and population patterns (Harslett & Royle, 1980: 132).



2.2.3.1 Early European Settlement

Like the Severn River district the exact date when European settlement began in the northern part of the Stanthorpe Shire is not known. However, by 1844 the 'Maryland' and 'Pikedale' pastoral runs had been taken up by M.H. Marsh and John Pike respectively (Harslett & Royle, 1980: 7-9). These settlers were eventually joined by a number of other pastoralists, including R. Paton and J. Matthews who selected a property know as the Caves in the 1870s (Applethorpe State School, 1986). These runs covered large amounts of land, 'Maryland' for examples was reputedly 200,000 acres (Harslett & Royle, 1980: 13) and the majority of these settlers utilised their land to raise sheep, dairy cattle and some crops (Applethorpe State School, 1986).

The discovery of tin in the area did give some impetus to settlement in the northern region (Applethorpe State School, 1986). Payable lodes were first discovered at Maryland and this bought prospectors and their families to the area (Harslett & Royle, 1980: 36). While the rush was not as intense as around the Severn River district, the most enduring legacy of the discovery of tin for the northern region was the completion of the Southern Railway from Warwick to Stanthorpe in 1881. This development saw the emergence of towns along the route such as Applethorpe and Thulimbah as they were situated in advantageous locations on the route. The town of Thulimbah, for example, was built on Folkstone run and was chosen as a railway siding because its proximity to spring water made it an appropriate location for a camp that later formed the basis of the township (Hamilton, 1989: 41).

Despite the minerals rush, various Queensland land reforms that were meant to encourage closer settlement from 1868, and the completion of the Southern Railway line there was not significant population growth in the northern parts of the Shire. Some small settlements were formed. Canon Creek, for example, became home to a small group of settlers towards the end of the nineteenth century but such settlements were rare (Harslett & Amiens State School (Qld.), 1994: 28). In the second decade of the twentieth century the area remained sparsely populated and residents in the western part of the area had to go to Thulimbah or Broadwater for basic services such as schools, stores, consumer goods and services, and train connections to Warwick (Hamilton, 1996: 7).

2.2.3.2 Fruit Farming

As farmers in the area around the Severn River were beginning to experiment with fruit cultivation, land holders in the northern region were also turning their attention to this new form of farming. While the Catholic Priest Father Davadi had planted the first orchard in area in 1877 his lead was followed on only a small scale by settlers planing a few fruit trees around their homes (Applethorpe State School, 1986). It was not until 1900 when J. Roessler planted the first commercial orchard near Applethorpe that serious attempts were made to cultivate fruit on a large scale (Applethorpe State School, 1986). Like much of the Shire north of Stanthorpe the region's fruit farming is dominated by cold climate



fruits such as apples, cherries, peaches, apricots, nectarines plums, and these varieties came to dominate farms in this area (Conservation Management Planners and Associates, 2003).

As the new orchards required some time to mature into a commercially viable crop farmers had to find other ways to support themselves and their families. Unlike farmers in the Severn River district who mainly turned to vegetable cultivation, many farmers in the Northern Region also engaged tin dredging and scratching as a means to derive a supplemental income until orchards matured (Applethorpe State School, 1986). This activity was carried out by individuals as privateers and also in the employee of tin mining companies such as Gibbs, Bright and Co. who built the Niven Dam in 1900 to supply water for their sluicing operations (Applethorpe State School, 1986).

The favourable climate and access to a reliable railway link meant the orchard industry was a viable enterprise in the northern region of the shire and this brought increasing numbers of settlers to the area. This growth was reflected in the development of Thulimbah which by 1913 boasted a postal office, general store, boarding house, emporium, sport grounds and hall, and two sawmills operating in the surrounding area. (Hamilton, 1989: 41). New schools were opened at Applethorpe (1911) and Bentnick, (1914) which later became Thulimbah to cater for the increased population growth (Hamilton, 1989: 18; Harslett & Royle, 1980: 132). However, the success of the orchard industry by 1916 meant that the sparsely populated areas of northern Stanthorpe shire were looked upon as a favourable location for the establishment of soldier settlements at the end of World War I (Hamilton, 1996: 3).

2.2.3.3 Soldier Settlement

Following the cessation of hostilities in 1919 the Federal government sponsored a program to settle repatriated soldiers on rural farms as a “reward’ for the sterling service performed” during the Great War. (Johnson, 2002: 1). Under this scheme ex-soldiers were granted a plot of land on which they could establish a farm. One of the locations chosen for this scheme was in the northern area of Stanthorpe Shire. The location was on the former Pikedale pastoral run in the north-west of the Shire. The “wave of patriotic enthusiasm” in which the scheme was established meant it was at first welcomed by both the participants and the Stanthorpe Shire (Harslett, 1970). While this scheme eventually ended in failure and the abandonment of most of the farms and settlements, it did have a significant effect on the present study area’s economy, society, and infrastructure.

After the announcement of the scheme a total of 17,400 acres in the northern part of the shire on what had originally been the Pikedale run west of the railway line between Warwick and Stanthorpe was set aside for soldier resettlement (Conservation Management Planners and Associates, 2003). Much of this land was resumed from pastoral leases or acquired through purchase by the relevant authorities. It was proposed that the success of other farmers in the area with fruit trees meant that small farms could



be readily established on a successful basis. The soldier settlements in Stanthorpe were essentially experimental as many of the ex-soldiers had little farming experience and the area was not adequately equipped with the necessary infrastructure to make the settlement a success (Johnson, 2002: 281).



Figure 9: State Co-operative Store at Amiens, Queensland, 1922 (JOL 105771) Amiens was nominally the major town of the Pikedale Soldier Settlement in the Northern District of the Stanthorpe Shire.

From the outset those responsible for the establishment of the Pikedale settlement recognised the need for a railway line to the underdeveloped region to bring supplies to the settlers and to facilitate the shipping of agricultural products to market. The New England highway was inaccessible and there was not connection to the Southern Railway line. A 19 kilometre branch line from Cottonvale on the Southern Railway west was chosen as the preferred option to link the Soldier Settlement with the Southern Line (Hamilton, 1996: 4). The line included sidings at Amiens, Fleurbaix, Pozieres, Bullecourt, Passchendale Bapaume, and Mesines and was completed on 26 July 1920 (Harslett & Royle, 1980: 64). The decision to name these sidings after major World War I battlefields came after a request from the then Returned Sailors and Soldiers Imperial League of Australia (RSSILA) to honour those who had died in service during the war (Hamilton, 1996: 5)

The settlement scheme in the region saw at least 700 ex-soldiers take up farm land in the area (Harslett & Royle, 1980: 84). While the other localities on the rail line experienced a degree of closer settlement, by far the most important town was Amiens, which had to be “carved out of the scrub” as the scheme progressed (Hamilton, 1996: 10). By the early 1920s the town was a thriving rural settlement featuring “a local progress association, soccer club, C.W.A., Bush Nursing Association Sub-Branch, School of Arts, Stamp club,



Younger Set Cricket Club, and ALP Branch as well as its school and pulp factory” (Kerr & Australian Railway Historical Society. Queensland Division, 1970: 5). While Amiens, remained the nominal major town of the settlement this did not prevent the growth of other locales. For example, by 1922 Pozieres’ population had reach nearly 200 people and there was “much excellent orchard land” being farmed around the settlement (Hamilton, 1996: 8).



Figure 10: Pioneer settlement camp at Amiens, ca. 1920 (JOL 65574).

Many of the Soldier Settlers had to endure pioneer conditions as they attempted to establish their small agricultural holdings on a secure footing.

Despite this initial growth and seeming optimism for the future, the Soldier Settlement Scheme was not a success. Many soldier settlers had little agricultural experience and “were not cut out to be farmers” and as such the output of the farms was minimal (Hamilton, 1996: 24). Compounding this was a combination of the Great Depression, poor planning, and fruit fly and codlin moth that doomed the soldier settlements. The Pikedale Soldiers Jam, Canning and Preserving Company, established specifically to process the output from the soldiers’ farms was never successful and it needed continual government assistance until the site was passed in at auction in April 1930 (Harslett & Amiens State School (Qld.), 1994: 79). “By 1925 many properties and houses were deserted” and those that had not been burnt down or stripped of their useful building materials by scavengers were sold and moved to other towns.

Following a number of investigations, the settlement was finally officially closed in 1931 (Harslett & Amiens State School (Qld.), 1994: 79). Little evidence of the “social and agricultural experiment” of the Soldier settlement Scheme remained and by 1970 only the school, St Denys Anglican Church, and a few houses were still extant at Amiens (Johnson, 2002: 415). The St Denys Anglican Church remains an important element of the built environment. Completed and dedicated in 1923 it provides “evidence for the



soldier settlement movement following the First World War and for the closer settlement of the Pikedale area” and is listed on the Queensland Heritage Register (Environmental Protection Agency, 2007b).

2.2.3.4 Post-Soldier Settlement

Although the Pikedale Soldier Settlement failed to bring significant population growth and urban development, the northern region of the Stanthorpe Shire has continued to contribute to the economic and social development of the region. While the Great Depression was a significant factor in the downfall of the scheme, it also brought the first wave of Italian migrants to the area (Hamilton, 1996: 26). This group not only helped increase the population of the area, they also contributed to the agricultural success and diversity of the region. The most successful migrants to the area were the Zanatta family and from the 1930s onwards they become major local fruit producers. Their most significant contribution to the local area came after a violent hail storm in the late 1940s led to them establishing a juicing plant and later the famous ‘Biltmore’ winery (Hamilton, 1996: 30-31).



Figure 11: The Zanatta Family (pictured) was one of many Italian migrant families to the area during the Great Depression. The Zanattas became successful fruit farmers and later branched out to juice and later wine production. (JOL 140347).

Fruit production remained important to the area’s economy. To keep pace with modern developments Harry Archibald built the first cold storage facility in the area in 1935 (Hamilton, 1996: 25-26). Archibald’s continual innovation and improvements to his business systems and technology meant that by 1961 his Iona Enterprises Cold Storage had “spread to all parts of the Granite Belt” (Applethorpe State School, 1961). To protect



the area's valuable orchards anti-hail rockets were imported from France during the 1950s. However, they had limited success and it was not until the Corballon Cannon, that disrupted hail storms by firing sound waves into the air during a storm, was imported also from France in the 1960s that the technique was adopted by local orchards (Hamilton, 1996: 42).

The success of the area as a fruit producing region was evidenced by the details of traffic on the branch line between Cottonvale and Amiens. In 1962-63 it was reported that 6,297 tons of mostly fruit was being consigned from the area to market (Kerr & Australian Railway Historical Society. Queensland Division. 1970: 12). In 1970 the area surrounding Amiens remained a "rich and productive" region with fruit cultivation, vegetables, sheep, cattle and timber felling (Harslett, 1970). The majority of the freight came from the sidings at Pozieres, Bapaume, and Amiens. Along with the shipping of fruit there was also a steady flow of wool (60 tons) and some minerals from Bapaume and Pozieres (Kerr & Australian Railway Historical Society. Queensland Division. 1970: 13).

Aside from the former soldier settlements the town of Applethorpe has also played an important role in the Shire's social and economic development. In the 1930s an agricultural research station was built three kilometres outside of the town by the Commonwealth Scientific and Research Organisation (*Stanthorpe & district*, 1934). This station was taken over by the Queensland Department of Primary Industries in 1964 and continues to operate today as the Applethorpe Horticultural Research Station. In 1954 an Aerodrome to service the Shire and the town of Stanthorpe was built outside of the town also at a cost of £45,000 by the Stanthorpe Shire council with subsidies from the State Government. In addition to fruit cultivation tin mining was still being carried on at Four Mile Creek. However, urban development was minor and by 1986 Applethorpe was considered a "pleasant country type of village with good facilities" (Applethorpe State School, 1986).

2.2.3.5 Community Development

The establishment of community services in the northern region of Stanthorpe Shire has reflected the fluctuations in the area's settlement patterns and growth. Like other small settlements in the shire a range of services have been provided through a combination of Government agencies and volunteer community groups. The range of school, churches, and community groups that have evolved in the area are evidence of the local communities' needs and their desire to establish a genuine community spirit within their settlements.

Although settlement in the area began in the 1840s the first school established in the area was at Canon Creek, which opened on 27 April 1911 (Harslett & Amiens State School (Qld.), 1994: 31). This was quickly followed on 14 September 1911 with the opening of the Four Mile School. In 1916 Four Mile School changed its name to Applethorpe, and the designation has not changed since. Between 1911 and 1936 the average enrolment at Applethorpe was between 38 and 60 students and by 1961 777 pupils had attended the



school (Applethorpe State School, 1986). On the 23 September 1914 the Bentinck State School opened to cater for those students who could not travel to Applethorpe. Again the name of this school was changed, in this case to Thulimbah (Hamilton, 1989: 18). Today Applethorpe State School has 54 enrolled students and Thulimbah 56 pupils (Education Queensland, 2007).

To cater for the children of the Soldier Settlements a number of schools were opened in the newly formed towns. The first, the Pikedale Soldier Settlement Provisional School, held its first day of classes on 10 March 1919 and by 1920 it had also changed its name to become the Amiens School. This School was followed by Pozieres State School, 16 June 1921 (Hamilton, 1996: 17) and one at The Summit in 1921 (Harslett & Royle, 1980: 132). Surprisingly none of these schools were forced to close when the Soldier Settlement Scheme failed and all remain open today, although Pozieres has only 12 enrolled pupils (Education Queensland, 2007).

A number of churches have also been built in the area to cater to the spiritual needs of local communities. At Thulimbah a Presbyterian Church was opened in 1916 and this was followed in 1926 by the dedication of a Catholic Church in the town (Hamilton, 1989: 42).



Figure 12:
The St Denys Anglican Church at Amiens was built in 1923 and is evidence of the Pikedale Soldier Settlement in the northern region of the Stanthorpe Shire. (Courtesy EPA QPWS)

At Amiens a Methodist Church was opened in 1920 (Harslett, 1970), and the previously mentioned St Denys Anglican Church in 1923 (Environmental Protection Agency, 2007b). To cater to the needs of a growing Catholic congregation, in 1961 the St Patrick's Catholic



Church was relocated from Sugarloaf to a location in Amiens (Harslett & Amiens State School (Qld.), 1994: 81). At Pozieres plans for the construction of a non-denominational community church were replaced by the desire to build a hall that upon completion served the community well as a church and public hall until it was sold and moved to Stanthorpe at an unspecified date (Hamilton, 1996: 35).

In addition to these schools and churches a number of other community based services and organisations appear in the historical record. The first Bush Nurses Centre in Queensland was opened in Amiens in October 1920 to provide medical attention for residents of isolated areas of the state (Harslett, 1970). As the largest of the soldier settlements Amiens could also boast a number of other community groups and facilities such as its own QCWA Branch in Amiens (1926), the Amiens Memorial School of Arts Hall opened in June 1926 and a Girl Guide Troop formed in 1932 (Harslett, 1970). The town also held an annual show between 1926 and 1940 that catered for both exhibitors and patrons from around the district. (Harslett & Amiens State School (Qld.), 1994: 79). Although there is no record of a branch being formed in other soldier settlement towns, a sub branch of the RSSAILA was formed in Pozieres in 1921 (Hamilton, 1996: 35).

2.3 Relevant Recorded Heritage Sites

On-line searches of the National and Commonwealth Heritage Lists, Register of the National Estate and the Queensland Heritage Register were conducted to identify places and sites of cultural heritage significance that may be impacted upon by the proposed development plans.

The National and Commonwealth Heritage Lists and Register of the National Estate is compiled by the Australian Heritage Council and provides an inventory of Australia's natural and cultural heritage places. Sites and places of historic (non-Indigenous) cultural heritage significance listed on the National Heritage List or Commonwealth Heritage List are protected under the *Environmental Protection and Biodiversity Conservation Act 2003*.

The Queensland Heritage Register is maintained by the Cultural Heritage Branch of the Environmental Protection Agency (EPA), with the aim of protecting historic cultural heritage for future generations. All sites and places of historic (non-Indigenous) cultural heritage significance listed on the register are protected under the *Queensland Heritage Act 1992*.

Searches of the National and Commonwealth Heritage Register, the Register of the National Estate and the Register of the Queensland Branch of the National Trust indicated no sites of historic significance have been recorded in these databases within the study area. A search of the Queensland Heritage Register yielded nine sites of historic significance within Stanthorpe Shire and they are listed below in Table 2.



Table 3 - Heritage listed places on the Queensland Heritage Register.

Place ID	Name	Place Type	Address
600832	Ballandean Homestead	Homestead	Ballandean
600830	Central Hotel	Hotel/Inn	140 High Street, Stanthorpe
601633	El Arish	Garden/ Private	94 Greenup Street, Stanthorpe
601552	Former Masel Residence	Detached House	98 High Street, Stanthorpe
600829	Quart Pot Creek Rail Bridge	Bridge – Railway/viaduct	Quart Pot Creek, Stanthorpe
601632	Stanthorpe Soldiers Memorial	Memorial/ Monument-war	Lock Street, Stanthorpe
602530	St Denys Anglican Church	Church	17 Trevethan Lane, Amiens
602209	Sundown Tin and Copper Mine	Mine Site	Little Sundown Ck, Stanthorpe
601242	Wallangarra Railway Station and Complex.	Railway Station	Woodlawn Street, Wallangarra

Note: The sites located within the vicinity of the study area are shown in bold.

Each of the listings highlighted in bold are within the immediate vicinity of the study area and are discussed briefly below, including information on the nature of cultural heritage significance. More complete information including contextual history can be obtained from the individual heritage citations existing for each site.

2.3.1 El Arish

El Arish is significant because:

- The development of Stanthorpe is unique within the pastoral and agricultural Darling Downs region, initially owing its growth and prosperity to tin mining, and in the early twentieth century to market gardening and summer holiday making. El Arish, which was originally a market garden and then a summer residence from the early 1920s, is one of the few surviving properties which reflects the contribution of both market gardening and tourism to the development of the town;
- Characteristic elements of the early market garden survive at El Arish including a rare and early Williams pear tree, Isabella grape vines, sections of dry stone walling and terraced sections of the garden which were incorporated into the later Chauvel garden. These elements are illustrative of the establishment of market gardens in and around Stanthorpe from the 1880s. El Arish is a characteristic and rare example of a summer residence established in Stanthorpe in the 1920s during a period of intense tourist activity which saw many buildings constructed to support this new industry. The garden at El Arish is an important and rare surviving example of a 1920s Queensland garden influenced by Arts and Crafts gardening ideals. It was designed by Isabella and her son, Charles, to allow a variety of experiences and functions within different areas. Many of the early features remain extant. The cypress hedge along Greenup



Street is a marvellous feature of the garden and a rare example of a hedge of this size and extent in Queensland;

- El Arish is a characteristic and rare example of a summer residence established in Stanthorpe in the 1920s during a period of intense tourist activity which saw many buildings constructed to support this new industry. The timber residence was initially intended for use during the summer months. The name chosen for the property by the Chauvels was El Arish, meaning 'place of rest', and this commemorates a town in the Sinai and recalled Allan Chauvel's involvement in the Middle East during World War I;
- El Arish makes a significant aesthetic contribution to the Stanthorpe streetscape, and with its location at the base of the Stanthorpe Soldier's Memorial [601632] reserve, is a recognised local landmark. The separation of the garden into distinct areas provides a range of aesthetic experiences including formal plantings emphasising individual plants and diversity; geometric layouts of gardens, hedges and shrubs with defined boundaries; themed flowering displays; rustic stroll gardens inviting exploration; private and intimate spaces; tall specimen planting and obscured boundaries which give the impression of increased space with the garden seemingly extending over boundaries to the rugged landscape of the adjoining public space; natural rock surfaces; stone faced terracing; distant views; mass plantings in scale with garden spaces; and various garden structures;
- The garden displays significant creative achievement in its design, choice of plantings and utilisation of the site;
- The first kindergarten in the Stanthorpe district was operated at El Arish from 1957 until 1975. Many residents of Stanthorpe attended the kindergarten and the property has a special association with the community for this reason; and
- El Arish is associated with several people of importance to Queensland history. The Chauvel family who developed the property as their summer residence have a long and acclaimed history in the Armed Forces in Australia. Allan Chauvel's brother, Henry, was knighted for his service in World War I, where Allan served as a Major. Allan and Isabella Chauvel's son Charles, who helped to plan the garden, was a renowned Australian film maker who, with his wife Elsa, made many early important films.

2.3.2 Quart Pot Creek Rail Bridge

The Quart Pot Creek Rail Bridge is significant because:

- The Quart Pot Creek Rail Bridge is an important part of what was formerly the interstate link between Brisbane and Sydney. It is the fourth oldest bridge of its type in Queensland; and
- The bridge demonstrates a robust engineering design, which has allowed it to be upgraded whilst retaining its essential character.



2.3.3 St Denys Anglican Church

St Denys Anglican Church is significant because:

- As a soldier settlement church with direct links to France, St Denys Anglican Church is important as evidence for the soldier settlement movement following the First World War and for the closer settlement of the Pikedale area. The church is significant for its association with those who took up property under this scheme and their descendants. It is directly linked to Australian war service in France through the dedication of the Church to St Denys, the Patron Saint of France, but also through the frontal cloth and altar ornaments, which originate from the Cathedral in Amiens, France and used in the military church at the Australian base at Le Harve; and
- St Denys Church has a strong association with the people of Amiens and the surrounding area for spiritual and cultural reasons having provided pastoral care and social contacts in the region for over eighty years.



3 CULTURAL HERITAGE INVESTIGATION

This chapter provides an overview of the methodology, constraints and overall results of the field survey. The results section of this chapter is divided into two parts. Part A details the results of fieldwork undertaken within the proposed inundation area. Part B details the results of the survey carried out along the associated urban and irrigation pipeline routes.

Fieldwork undertaken by ARCHAEO staff is based on universally understood and accepted forms of assessment that occur in a series of clearly defined steps including sampling, surveying, site evaluation, recording, impact assessment and management recommendations.

3.1 Survey Methodology

The survey methodology adopted for this study included a pedestrian and vehicle inspection across the Dam inundation area and a vehicle survey along the pipeline corridors. The survey commenced with the inundation area at Lot 131/SP 183767 (represented by the number 31 in Figure 13) and continued according to property access timeframes and restrictions. Approximately 90% of the urban and irrigation pipeline routes were surveyed. The location and extent of the area surveyed within the inundation zone is shown in Figures 13. It is estimated that approximately 80% of the entire Project Area was surveyed.

All survey data was recorded in field notebooks and locations of any items or place of historical cultural heritage significance was captured were captured via a hand held global positioning system (GPS) receiver, accurate to ± 4 metres. This information was then utilised to create maps outlining the location of sites and features noted during the survey. Areas of interest were photographed using a digital camera (*Nikon CoolPix 5400*) with 5.1 effective mega-pixels, and all photographs were logged in a field notebook to be downloaded to a laptop computer for initial storage at the end of each day. Upon completion of the report, these photographs are stored on disk (CD) in the ARCHAEO office.

3.1.1 Sampling Strategy

Sampling strategies (where to look) can be either *purposive*, where specific areas are targeted (for whatever reason), as is done with predictive modeling; or *probabilistic*, where decisions are made to survey without any prior knowledge or predictive model of what heritage resources might exist in the landscape to be surveyed. So it is that archaeological survey strategies usually involve transects across the study area chosen at random (probabilistic) to avoid possible bias in the results; or transects within areas



(purposive) known to be historically significant, or those designated areas specifically earmarked for development.

For this particular study, a purposive sampling strategy was employed. Historical research and consultation with land owners enabled a systematic survey of areas known to be of historical interest and significance whilst remaining inside the survey timeframes.

Noted historical cultural heritage sites were recorded with reference to site title, location, environmental context, levels of previous impact, condition and relevant comments including Project details.

Archaeological excavation was not conducted as it was not deemed necessary.

3.2 Constraints to the Survey

3.2.1 Ground Surface Integrity

An assessment of ground integrity (GI) provides an indicator of whether or not the land surface within a landscape under study has been modified or not, and if so, the degree of disturbance encountered. Landscape modification may influence the context (and therefore integrity) of areas of historical cultural heritage interest. Levels of GI were determined using a percentage range between 0-100% where 0% indicates all GI is gone, and 100% represents excellent preservation of the original context. Therefore: **Zero - 0%; Poor - 1-25%; Moderate - 26-50 %; Fair - 51-75 %; Good - 76-85%; Excellent - 86-100%.**

Much of the study area demonstrated poor GI (approximately 70%). The Severn River shows clear evidence of modification and disturbance over time. River diversion attempts and other activities associated with the mining and farming history of the area may have attributed to this. The general lack of mature vegetation and the presence of dense tussocky grass provide evidence of long term clearing particularly along the road reserves within the pipeline corridors. Notable areas of higher integrity include remnant woodland (predominantly Box, Gum and Stringy bark) in areas along the banks of the Severn River.

3.2.2 Ground Surface Visibility

Assessments of ground surface visibility (GSV) provide an indication of how much of the ground surface can actually be seen. GSV is most commonly inhibited by vegetation but other inhibitors may include concrete, gravel and bitumen. Levels of GSV were determined using a percentage scale in that 0% represents zero visibility and 100% represents maximum visibility (bare ground). Therefore: **Zero - 0%; Poor - 1-25%; Moderate - 26-50 %; Fair - 51-75 %; Good - 76-85%; Excellent - 86-100%.** The better the visibility, the more potential there is for locating historical/archaeological material.



Much of the study area demonstrated poor GSV primarily as a result of regrowth vegetation, dense tussocky grasses, and woodland under story (see Figures 6 and 7). Areas where GSV was notably higher included cleared areas for pastoral and agricultural use, and expansive areas of granite flooring.

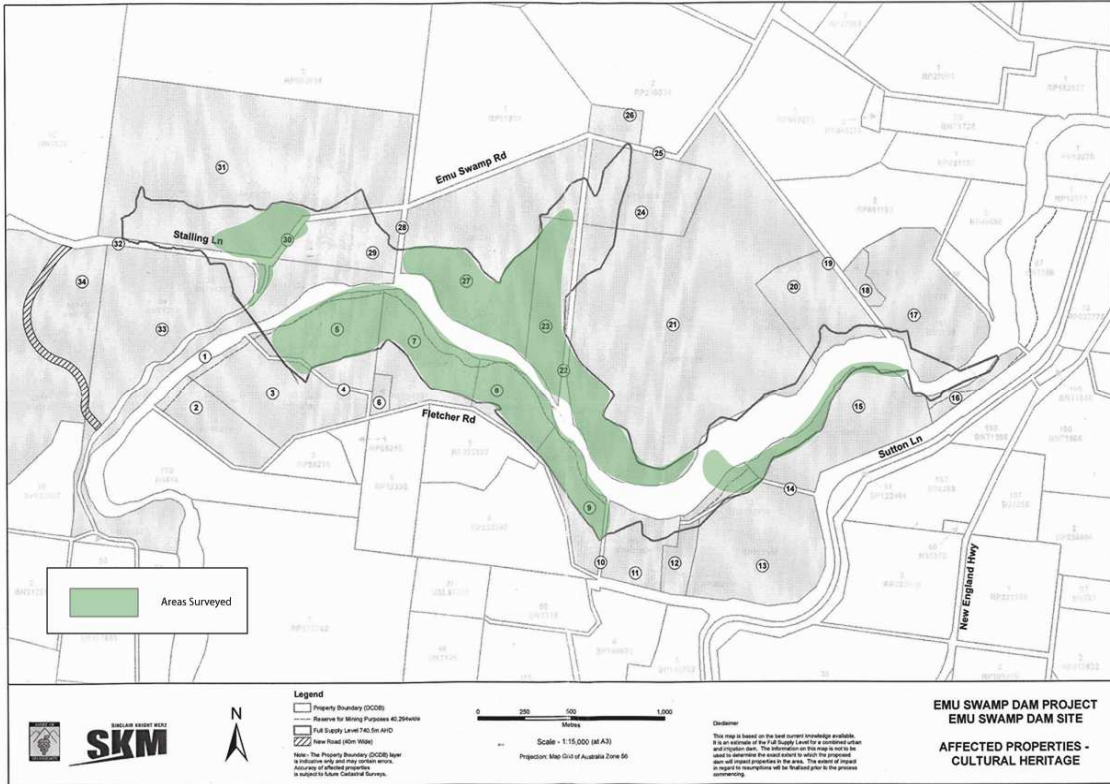


Figure 13: The extent of the surveyed area within the proposed inundation zone (Base map courtesy of SKM).



Figure 14: Dense vegetation along the S side of the river.



Figure 15: A common example of poor GSV along the road reserves.



3.3 Survey Outcomes

The Project area was traversed using vehicle and pedestrian transects. The location of any materials and/or places of historical archaeological significance and/or interest were noted and grid co-ordinates were captured via GPS. All historical cultural heritage item/places located within the inundation area and along the associated urban and irrigation pipeline corridors are listed in Table 4. The location of items and places of historical significance and/or interest within the inundation area are mapped in Figure 16.

Historical sites of cultural heritage significance are identified by the prefix ESHAS (Emu Swamp Historical Archaeological Site). Locations of objects and/or places of historical interest are identified by the prefix HI (Historical Interest).

Table 4: Location data for items and/or places of historical archaeological value.

Site ID	GPS Co-ordinates ¹		Description
	Easting	Northing	
ESHAS – 1	Confidential ²		Historic Grave
ESHAS – 2	387513	6818183	Stone wall
ESHAS – 3	386492	6818751	Waterhole
ESHAS – 4	385325	6819536	Homestead Complex
ESHAS – 5	385401	6819489	Homestead
ESHAS – 6	394949	9826322	Timber Rail Bridge
ESHAS – 7	383303	6836698	St. Denys Anglican Church (currently listed on the QLD Heritage Register – Place ID 602530)
ESHAS – 8	398208	6833739	Former Site of Applethorpe Railway Station
ESHAS – 9	390127	6820010	Glen Aplin Rail Bridge
ESHAS – 10	387074	6813546	Ballandean Railway Station and Associated Grounds
HI – 1	385903	6819101	Cast iron pot
HI – 2	386788	6818366	Cement weir
HI – 3	386815	6818118	Turkey Nest Dam
HI – 4	390333	6820369	Additional Railway Elements
1. UTM/UPS Grid Zone 56J. Geodetic Datum – WGS 84.			
2. The precise location of the grave is to remain confidential by request of the current landowner. The grave is located outside the proposed inundation area and therefore will not be directly impacted the Project.			
Bold denotes places already recognized on the State Heritage Register.			

Note: A number of sites became known to us through previous investigations in the area and community consultation. The attempt to locate two of these sites was unsuccessful. GSV was extremely poor and may have hindered our search. The recorded location and site descriptions are listed below in Table 5 and mapped in Figure 16.



Table 5: Location and description of previously recorded historic sites (Bonhomme Craib & Associates 2000).

GPS Co-ordinates		Description
Easting	Northing	
388306	6818532	Grave
384908	6818683	Graves x 2





Figure 16: Location of item/places of historic cultural heritage significance and/or interest within the inundation area.



4 ANALYSIS OF DATA

This chapter is separated into two parts. Part A provides an analysis of the items and places of historic significance located within the proposed Dam inundation area. Part B provides an analysis of the items and places of historic significance located along the associated pipeline corridors.

PART A – THE PROPOSED INUNDATION AREA

4A.1 Emu Swamp Historical Archaeological Sites (ESHAS)

Archaeological sites are described as those sites which contain suitable value to warrant further assessment. These sites are considered to contain suitable value to the study area as a result of contextual research conducted prior to the field survey, consultation with relevant stakeholders and other best practice cultural heritage assessment techniques.

The Emu Swamp Historical Archaeological Sites (ESHAS) located during the field survey within the inundation area are identified and categorised below.

SITE NAME	ESHAS 1 – Historic Grave
LOCATION	The precise location of the grave is to remain confidential by request of the current landowner. The grave is located outside the proposed inundation area and therefore will not be directly impacted by the Project.
ENVIRONMENTAL CONTEXT	Large river gums and stringy bark, dense regrowth vegetation, whiskey grass, large granite boulders and floors.
GI	75-85%
GSV	0 - 25% - dense regrowth scrub.
SITE DESCRIPTION	The site measures 2.2m in length and 1.1m in width and lies in a NNE/SSW position. Sizable granite blocks are positioned around the perimeter of the grave. The grave is located beneath a mature living, fire damaged gum tree.
PREVIOUS IMPACTS	Evidence of the bush fire that swept through this region in 2002.
ADDITIONAL COMMENTS	The location of this grave has been known to the current owner of the property for approximately 50 years. The land owner believes the grave to be associated with Chinese tin miners in the region during the 19 Century. Component of Severn River Mining Precinct.





Figure 17: NNE View of the length of the grave (2.2m).



Figure 18: WNW view of width of grave (1.1m).



SITE NAME	ESHAS 2 – Stone Wall (Component of Severn River Mining Precinct)
LOCATION	Located on the Severn River at the western edge of Lot 2/SP145917 (102 Sutton Lane).
ENVIRONMENTAL CONTEXT	Large River Gums, Box and Stringy Bark, dense regrowth vegetation, whiskey grass, large granite boulders.
GI	25% - River modification
GSV	50% - regrowth vegetation however the wall is quite visible.
SITE DESCRIPTION	A hand built stone wall made up of moderately sized granite blocks. Located on the SE side of the Severn River extending approximately 50m NW across the River. The height of the wall ranges from 20cm at the SE edge of the River to 2.5m at the centre of the River. There is a break in the wall of approximately 3m wide, at the NW end, possibly due to floodwater. The wall does not extend all the way across the River. In the NW the wall meets a waterhole.
PREVIOUS IMPACTS	Historic tin mining and associated activities. Fire. Flooding.
ADDITIONAL COMMENTS	Component of Severn River Mining Precinct.



Figure 19: S facing view of stone wall toward the SE edge of the River bank.



Figure 20: S Facing view of stone wall.



Figure 21: S facing view from the (approx.) central point of the stone wall.



SITE NAME	ESHAS 3 – Waterhole
LOCATION	Located on the Severn River between the SW edge of Lot 470/ B3415 and the N perimeter of Lot 2/ RP12336.
ENVIRONMENTAL CONTEXT	Established Gums and some cleared vegetation around the waterhole.
GI	50%
GSV	100%
SITE DESCRIPTION	A large, deep waterhole of approximately 30m (NS between the banks) x 50m in length. There are water pump house remnants and a small cement slab foundation (2m x 2m) along the southern bank of the waterhole. On the N side of the waterhole lies a small tin boat and a child's rope swing hangs from a large River Gum.
PREVIOUS IMPACTS	Unknown
ADDITIONAL COMMENTS	Evidence of recreational, agricultural and pastoral use.

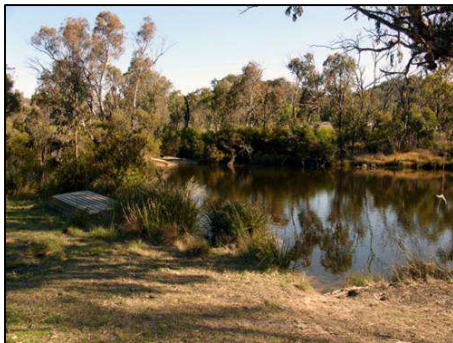


Figure 22: SE facing view of waterhole.



Figure 23: NW facing view of waterhole.

SITE NAME	ESHAS 4 – Homestead Complex
LOCATION	366 Emu Swamp Road (Lot 31/ SP 183767)
ENVIRONMENTAL CONTEXT	Grazed paddocks and areas of remnant woodland (primarily Box and Stringbark). A large dam (located within a drainage channel) is associated with the complex.
GI	0-50%
GSV	75-100%
SITE DESCRIPTION	A small 2 or 3 room timber/fibro cladded farm house dating from the early twentieth century with associated loading yards, carrels, sheds and farm equipment. A large dam is also located on this property approximately 250m west of the farm house. The dam includes a cement weir.
PREVIOUS IMPACTS	Unknown
ADDITIONAL COMMENTS	The Homestead complex and dam is located within the proposed inundation area. Landowners unavailable for consultation.





Figure 24: NE view of the Homestead and associated grounds.



Figure 25: Carrels and sheds associated with the complex.



Figure 26: The dam with the cement weir in the foreground.



SITE NAME	ESHAS 5 – Homestead
LOCATION	365 Emu Swamp Rd (Lot 132/ SP183767)
ENVIRONMENTAL CONTEXT	Cleared paddocks, areas of remnant woodland (primarily Eucalypts), native and planted Pines.
GI	0-50%
GSV	75-100%
SITE DESCRIPTION	A small timber farm house most likely dating from the interwar period with an associated row of semi-mature pine trees situated to the frontage parallel to Emu Swamp Road, along the property boundary fence.
PREVIOUS IMPACTS	Unknown
ADDITIONAL COMMENTS	The Homestead is located within the proposed inundation area. Note: Access to the property was not available.



Figure 27: S facing view of homestead and pine trees.



4A.2 Item/places of Historical Interest (HI)

Items and places of historical interest are those which do not provide a suitable level of cultural heritage significance in their own right to justify further assessment. They are however, included in this section as they contribute (or potentially contribute) to the broader discussion of historical archaeological sites, places and precincts within the study area.

HI – 1 Cast Iron Pot

(Discussed also within the Severn River Mining Precinct).

A broken cast iron pot was located on the southern bank of the Severn River on our inspection of Lot 1/ RP52709. The pot is in poor condition due to environmental exposure. The cast iron pot could possibly be associated with camping and/or mining in the region.



Figure 28: Cast iron pot pieces.

HI – 2 Cement Weir

A large cement weir was located across the Severn River between Lot 7/ RP222897 and Lot 2/ RP63905. The land owners of the area believe the weir to date to the 1970s. The weir is functional and in good condition.

HI – 3 Turkey Nest Dam

A turkey nest dam was also located on Lot 7/ RP222897 approximately 300m SE of HI – 4 (Cement Weir), along the southern bank of the Severn River. The dam is functional and in good condition.



PART B – THE URBAN AND IRRIGATION PIPELINE CORRIDORS

4B.1 Emu Swamp Historical Archaeological Sites (ESHAS)

Archaeological sites are described as those sites which contain suitable value to warrant further assessment. These sites are considered to contain suitable value to the study area as a result of contextual research conducted prior to the field survey, consultation with relevant stakeholders and other best practice cultural heritage assessment techniques.

SITE NAME	ESHAS 6 – Timber Rail Bridge
LOCATION	Located approximately 2km south of Stanthorpe and 150m to the east of the New England Hwy.
ENVIRONMENTAL CONTEXT	The rail bridge abuts acreage lots with some established woodland and scrub vegetation.
GI	25-50%
GSV	100%
SITE DESCRIPTION	A wooden rail bridge supported by timber piers running parallel to the New England Hwy. The bridge crosses Whiskey Gully Rd. The central section provides through access to Whiskey Gully Rd. These piers and overhead trusses are painted red and white to comply with current safety requirements.
PREVIOUS IMPACTS	
ADDITIONAL COMMENTS	The railway is functional and in good condition. Component of Railway Precinct



Figure 29: E facing view of timber rail bridge.



SITE NAME	ESHAS 7 – St Denys Anglican Church
LOCATION	17 Trevethan Lane, Amiens, QLD
ENVIRONMENTAL CONTEXT	Situated within the town of Amiens, the church is located on a level block that backs on to a low granite boulder strewn hill. To the east of the church is another outcropping of boulders with some local eucalypts.
GI	25%
GSV	100%
SITE DESCRIPTION	A small single storey timber church built in 1923 to serve a soldier settlement at Amiens. The church is listed on the QLD Heritage Register, Place ID 602530 (see Table 2). The church is rectangular in plan and has a steeply pitched gabled roof (corrugated iron). The building has three small lancet windows along both sides of the building and the entrance is marked by a single arched doorway (see the QLD Heritage Register for more detail).
PREVIOUS IMPACTS	
ADDITIONAL COMMENTS	Built in 1923, the Church is evidence of the Pikedale Soldier Settlement in the northern region of the Stanthorpe Shire. It is directly linked to Australian war service in France through the dedication of the Church to St Denys, the Patron Saint of France. The church is in good condition.



Figure 30: St Denys Anglican Church, Amiens



SITE NAME	ESHAS 8 – Former Site of Applethorpe Railway Station
LOCATION	The former railway station is located approximately 20m east of the New England Hwy, in the town of Applethorpe (5km north of Stanthorpe).
ENVIRONMENTAL CONTEXT	Heavily cleared area around the station.
GI	25%
GSV	100%
SITE DESCRIPTION	All that remains of the station are wooden gates and rail culverts. This site forms part of the town of Applethorpe and is situated opposite the former general store, service station, a QFS Packing House and Merchandise building.
PREVIOUS IMPACTS	Closure of station and removal of majority of built elements
ADDITIONAL COMMENTS	It is believed that the station building is now located on a nearby property. Component of Railway Precinct



Figure 31: NW view of Q.F.S Packing House and Merchandise from the original site of the Applethorpe Railway Station.



SITE NAME	ESHAS 9 – Glen Aplin Rail Bridge
LOCATION	South of Glen Aplin
ENVIRONMENTAL CONTEXT	Regrowth vegetation and dense tussocky grasses along the road reserve. Some remnant mature eucalypts and pines.
GI	25%
GSV	75%
SITE DESCRIPTION	An early timber rail bridge. Timber piers, abutments and decking consistent with early bridges constructed in the late nineteenth and early twentieth century. Iron side railing on western side of deck.
PREVIOUS IMPACTS	
ADDITIONAL COMMENTS	Condition: Good and in service. Component of Railway Precinct



Figure 32: NNW view of Glen Aplin Rail Bridge.



SITE NAME	ESHAS 10 – Ballandean Railway Station and Associated Grounds
LOCATION	Located to the east of the New England Hwy in the town of Ballandean.
ENVIRONMENTAL CONTEXT	Primarily cleared of vegetation.
GI	0-25%
GSV	100%
SITE DESCRIPTION	The former railway station is currently a tourist information centre. The site includes remnant and in service infrastructure and associated elements. These include the waiting room and goods/office wooden buildings, rail gates and wooden sidings and culverts.
PREVIOUS IMPACTS	Closure of permanent rail service. Closure of station.
ADDITIONAL COMMENTS	Associated with this site are historic buildings located across from the Station on the west of the New England Hwy. These include; one double gabled workshop shed, the Ballandean Hall and Sports Inc, the Post Office and a mini mart service station. Component of Railway Precinct



Figure 33: SSE view of the former Ballandean Railway Station.



Figure 34: E view of wooden and metal rail gates.



4B.2 Items/Places of Historic Interest (HI)

Items and places of historical interest are those which do not provide a suitable level of cultural heritage significance in their own right to justify further assessment. They are however, included in this section as they contribute (or potentially contribute) to the broader discussion of historical archaeological sites, places and precincts within the study area.

HI – 4 Additional Railway Elements (Component of Railway Precinct)

A number of elements associated with the railway corridor were located along Mt Stirling Road at Glen Aplin. These include wooden gates and stone culverts and sidings. There is evidence of fire impact, demonstrated by the charred landscape and lack of vegetation; however the general condition of the railway elements is good.

4B.3 Towns and Villages in the Vicinity

Additional to items/places of historic interest, the following towns and villages in the vicinity of the pipeline corridors survive as evidence of the nature and function of these centres in historic times, as outlined in Section 2:

- Amiens;
- Poziers;
- Applethorpe;
- Glen Aplin;
- Severnlea; and
- Ballendean.

These towns and villages possess characteristics relating to settlement of the area and include churches, stores, warehouses, workshops, residences and green space. As the pipeline route is located within the road reserves that pass through these towns, the road reserve was the primary focus of the assessment. Conclusion of field survey results revealed that the towns and villages are not directly impacted by the Project.



PART C - INTERPRETATION OF DATA

4C.2 Summary of Archaeological Sites and Places Relevant to the Study Area

The field survey identified 10 sites and places of historic cultural heritage significance that could potentially be affected by the development of the proposed Dam and the associated pipelines (Table 6).

Table 6: Sites of historic significance affected by the proposed development.

Site ID	Description
ESHAS – 1	Historic Grave
ESHAS – 2	Stone wall
ESHAS – 3	Waterhole
ESHAS – 4	Homestead Complex
ESHAS – 5	Homestead
ESHAS – 6	Timber Rail Bridge
ESHAS – 7	St. Denys Anglican Church (currently listed on the QLD Heritage Register – Place ID 602530)
ESHAS – 8	Former Site of Applethorpe Railway Station
ESHAS – 9	Glen Aplin Rail Bridge.
ESHAS – 10	Ballandean Railway Station and Associated Grounds

A search was conducted for three historic graves, previously located and recorded by Mr Salata, Mr Thompson (local landowners) and Bonhomme Craib & Associates in 2000. Our attempt to locate all of the graves was unsuccessful. GSV in the area was extremely poor (0-10%) and was therefore a major constraint to our search.

Bonhomme Craib & Associates (2000:15) describe this grave as being “oblong in shape with placed granite slabs stacked two high. The length was 2.5m and the width 1.2m”. This grave is almost identical in description to ESHAS 1. ESHAS 1 was originally located by the Mr Simcocks (current landowner) more than 50 years ago, who then informed Mr Thompson (prior landowner) of the graves location (Mr Simcocks pers comm.). Mr Thompson is the landowner who informed Bonhomme Craib & Associates of the location of their recorded grave. The grave located and recorded in 2000 is more than likely ESHAS 1, located and recorded by Mr Simcocks and Archaeo in September 2007. The improvement of GPS receivers over the last 7 years may account for the discrepancy in the recorded location for the grave.

Two of the previously recorded graves were unable to be located. These graves however, were described by Bonhomme Craib & Associates (2000:15) as being “two rock cairns”. This description is inconsistent with that of the grave located on Mr Simcock’s property.



These sites may either be historical graves, or alternatively, may not be graves at all. The stone cairns may represent early evidence of tin mining in the region.

On account of the inability to locate the stone cairns coupled with possible GPS location discrepancies, further investigation is required to determine the true nature of these sites.

The waterhole (ESHAS 3), the modern cement weir (HI 2) and the turkey nest dam (HI 3) and related by the pursuit for water. These sites have been and are still used for recreational, agricultural and/or pastoral activities.

The Homestead (ESHAS 5) and the Homestead Complex (ESHAS 4) immediately across the road provide an historical record of agricultural and/or pastoral pursuits. These sites highlight the nature of these pursuits over the last 100 years.

4C.2 Heritage Precincts Relevant to the Study Areas

Several of the sites and places identified in Part A and B of this report are best reported as heritage precincts. A heritage precinct, for the purposes of this study, is an area where there is a density of heritage sites and places of significance interrelated by common historical themes or design. Individual sites and places within a precinct may be of significance. Conversely, a range of sites and places within a precinct may not be individually of higher levels of heritage significance, but may, as part of the overall precinct, add to the precinct's significance.

4C.2.1 Severn River Mining Precinct

The Severn River Mining Precinct incorporates several sites associated or likely to be associated with early tin mining in the area. The stone wall (ESHAS 2) and possibly the cast iron pot (HI 1) are likely remnants of tin mining in the region during the 1870s. During the mining boom, reserves of land were put aside for tin miners along the Severn River. A 1903 survey plan of the area shows a reserve 'two chains wide' (approximately 40m) was set aside for mining purposes along the southern bank of the Severn River within the Dam inundation area (see Figure 31). The historic grave (ESHAS 1) is located within this reserve area. The location of this grave and the proximity of potential grave sites, previously identified through landholder consultation and contextual research, suggest these graves are associated with the early tin mining industry. The Severn River Mining Precinct therefore incorporates these graves along with the Severn River, the original mining reserve and other sites likely to be associated with the early tin mining industry in the area. The Precinct extends south approximately 200m along the bank of the river (see Figure 32).



As discussed above, on account of the inability to locate the other stone cairns located in earlier surveys of the study area, as a result of poor GSV coupled with possible GPS location discrepancies from earlier records, further investigation is required to determine the true nature of this Precinct.

4C.2.2 Railway Precinct

The Railway Precinct, which incorporates the rail corridor and sidings, the former station sites at Applethorpe and Ballandean (ESHAS 8 and 10), rail bridges (ESHAS 6 and 9) and additional rail elements (HI 4) all form part of the Southern railway line that once serviced the local community and brought workers and their families into the area. The railway line was built in 1887 and ran to the Queensland border at Wallangarra, where it met with connecting services from New South Wales. The line is still in use today, primarily for tourist activities.

4C.3 Potential for further sites and places

There is potential for further historic places/items to exist within the study area as the field survey timeframes and levels of GSV did not allow for a comprehensive survey of the study area. Sites such as historic survey trees, mining and/or camp remnants and burials may exist across the study area. The area of greatest potential is most likely to be in the vicinity of the Severn River Mining Precinct.

A detailed discussion relating to impact on items and potential items of cultural heritage significance by the project will be discussed in **Section 8 - Recommendations**.



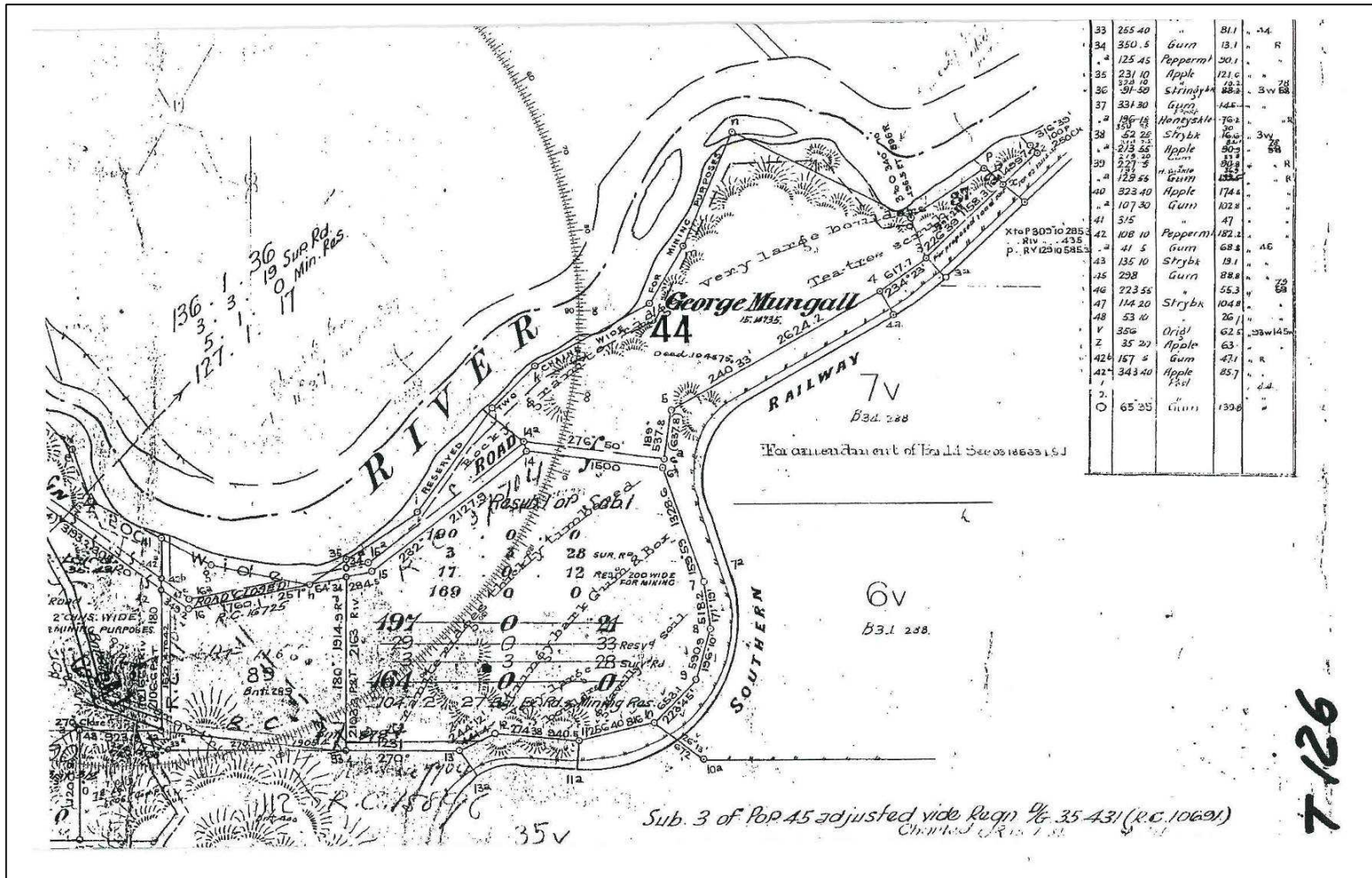


Figure 35: This 1903 survey plan shows the two chain wide mining reserve located on the southern bank of the Severn River. George Mungall's property is now owned by Mr Rob Simcocks.



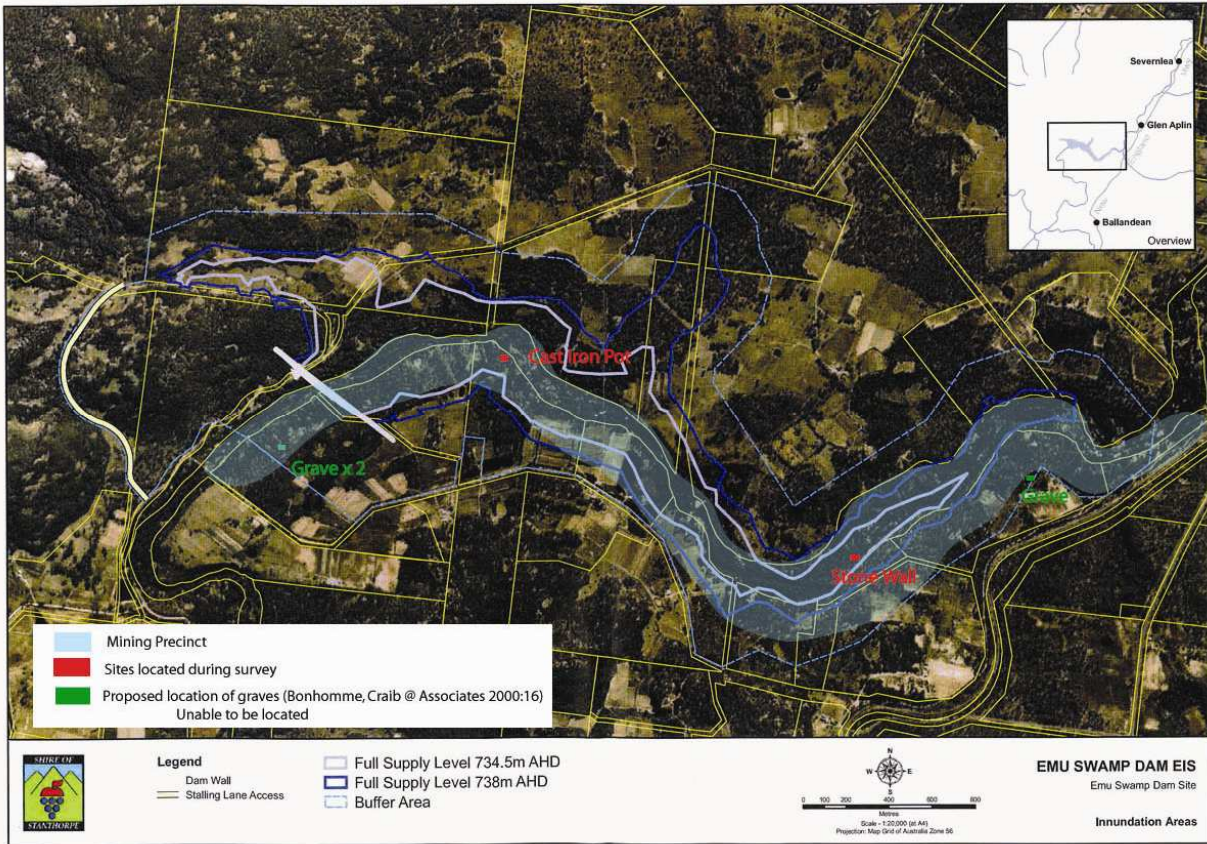


Figure 36: The Severn River Mining Precinct.



5 CULTURAL HERITAGE SIGNIFICANCE

5.1 Determining Cultural Heritage Significance

Cultural heritage significance relates to people's perspective of place and sense of value, within the context of history, environment, aesthetics and social organisation.

A range of standards and criteria are available to assist with determining cultural heritage significance. The following sections discuss *The Burra Charter (ICOMOS Australia)* and incorporate aspects from the recognised legislative frameworks, such as the *Queensland Heritage Act 1992 (and subsequent amendments)*. This discussion enables an insight into the discussions made in relation to significance levels discussed in the following section.

5.1.1 Historic Heritage Significance

The Burra Charter (Marquis-Kyle and Walker 1999) guides cultural heritage management in Australia. First adopted in 1979 by Australia ICOMOS (International Council on Monuments and Sites), the charter was initially designed for the conservation and management of historic heritage. However, after the addition of further guidelines that defined cultural significance and conservation policy, use of the charter was extended to Indigenous studies.

The charter defines conservation as 'the processes of looking after a place so as to retain its cultural significance' (Article 1.4). A place is considered significant if it possesses aesthetic, historic, scientific or social value for past, present or future generations (Article 1.2). The definition given for each of these values is as follows (Articles 2.2 to 2.5).

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and material of the fabric; the smells and sounds associated with the place and its use.

Historic value encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

Scientific research value of a place will depend upon the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place may contribute further substantial information.



Social value embraces the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a majority or minority group.

Article 2.6 of the Guidelines notes that other categories of cultural significance may become apparent during the course of assessment of particular sites, places or precincts. A range of cultural significance values may apply.

Every place has a history, aesthetic value or a social meaning to some member of a community. Most places therefore meet some of the criteria prescribed above. It is, however, neither possible nor desirable to conserve every place. Some measures must be applied to these broad criteria in order to determine the degree of significance. The degree to which a place is significant will determine the appropriate forms of conservation management for that place.

Assessing cultural heritage significance against set criteria is a widely recognised method of achieving consistent, rational and unbiased assessments. Various authorities and bodies involved in heritage conservation adopt assessment criteria including the Australian Heritage Council, the National Trust, Australia, ICOMOS, the Queensland Environmental Protection Agency and the Queensland Heritage Council.

5.1.2 Significance Assessment and Relevant Legislation

Whilst consistent with the notions of cultural heritage significance inherent in these bodies' criteria, the *Queensland Heritage Act 1992* sets out specific tests for considering places of State heritage value. Under Section 23(1) of this Act, a place may be entered in the register if it is of cultural heritage significance in accordance with Section 4 of the Act and satisfies one or more of the following criteria:

- a) If the place is important in demonstrating the evolution or pattern of Queensland's history;
- b) If the place demonstrates rare, uncommon or endangered aspects of Queensland's cultural heritage;
- c) If the place has potential to yield information that will contribute to an understanding of Queensland's history;
- d) If the place is important in demonstrating the principal characteristics of a particular class of cultural places;
- e) If the place is important because of its aesthetic significance;
- f) If the place is important in demonstrating a high degree of creative or technical achievement at a particular period;
- g) If the place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- h) If the place has a special association with the life or work of a particular person, group or organisation of importance in Queensland's history.



5.2 Levels of Site Significance for Individual Sites and Places

In some cases, particularly that of historical heritage sites, the specification or relative contribution of each individual item or component within a site may be useful. Alongside a significance statement for the broader study area, levels of significance identified for individual sites and places provides the final layer of discussion for this study and allows informed decisions regarding management of potential impact by the project in the following sections.

Sites and places located during the field survey for this report and relevant to the proposed project's impact will be evaluated accordingly using the following criteria:

Table 7: Adapted from Grades of internal site significance (NSW Heritage Office: 11).

Rating	Justification	Status
Exceptional	Rare or outstanding element directly contributing to an item's local, State (or potentially National) significance	Fulfils criteria for local, State or potentially National listing
High	High degree of original fabric. Demonstrates a key element of the item's significance. Alterations do not detract from significance	Fulfils criteria for local and State listing
Moderate	Altered or modified elements. Elements with little heritage value, but which contribute to the overall significance of the item.	Fulfils criteria for local listing and may fulfill criteria for State listing
Low	Alterations detract from significance or contain limited heritage value individually and within the site's broader context	May fulfill criteria for local listing and does not fulfill criteria for State listing
Intrusive	Damaging to the item's heritage significance	Does not fulfill criteria for local or State listing.



6 ASSESSMENT OF SIGNIFICANCE

As discussed in the previous section, assessing cultural heritage significance against set criteria is a widely recognised method of achieving consistent, rational and unbiased assessments of cultural heritage sites and places.

Results from previous chapters confirm the nature of historic sites and places existing within the study area. This section discusses the relevant levels of cultural heritage significance for the study area, concluding with a statement of cultural heritage significance for the site. This significance assessment provides the final layer for the management of the relevant sites and places within the study area.

6.1 Nature of Significance

6.1.1 Aesthetic Value

Aesthetic appeal is evident throughout the study area, including:

- The rural setting and open landscape including homesteads and cottages, orchards, vineyards and plantations;
- The Severn River and associated waterholes within the inundation area;
- The railway corridor and specific elements such as stations, bridges and sidings;
- Associated historic towns and villages along the pipeline corridors; and
- Indigenous vegetation and geology, most notable surrounding the Severn River.

Recent travel within the district reveals that these abovementioned values are similarly represented across the local area. In light of these observations, this assessment considers the study area to have moderate levels of aesthetic value.

6.1.2 Historic Value

The study area represents the many pursuits relevant to the area from early settlement to today, including:

- Homestead complexes and cottages related to pastoral and agricultural activities from early times, such as cattle grazing, vineyards and fruit growing;
- Evidence of efforts to provide for a reliable water supply for agricultural and pastoral activities more recently by the building of dams and weirs along the Severn River;
- Early tin mining activities in the vicinity of the Severn River; and
- The growth of towns and villages and their association with infrastructure, such as the railway corridor and sidings.



In conclusion, the study area is considered by this report to have low to moderate levels of historic value to the local area.

6.1.3 Scientific Value

A number of sites were recorded which have the potential to reveal scientific value related to the local area, including but not limited to:

- The Severn River Mining Precinct
- An intact and functioning Homestead Complex (ESHAS-4) from the early twentieth century, including associated outbuildings, dams, weirs and other remnants;
- The various towns and villages; and
- The Railway Precinct.

The study area is considered by this report to have low-moderate levels of scientific value to the local area.

6.1.4 Social value

Research has indicated that some properties within the study area have longstanding associations with families within the local community who have resided or worked on them in historic times. With the exception of Ballendean Homestead which is outside the immediate vicinity of the project, none of these associations are noted as requiring further discussion. This report also notes the Chinese association with tin mining activities conducted in the immediate area.

Taking this into consideration, this report considers the study area to display low to moderate levels of social significance to the local community.

6.2 Statement of Cultural Heritage Significance

The following statement of significance has been provided to reflect the study area's cultural heritage significance within the current legislative frameworks.

The study area is considered significant because:

- Representing settlement, mining, agricultural and pastoral pursuits within the district from early times, the study area *is important in demonstrating the evolution or pattern of the local areas history;*
- Containing the Severn River Mining Precinct, the Railway Precinct series of homestead complexes and their associated remnants, *the place has potential to yield information that will contribute to an understanding of the local areas history;*
- Surviving today in a rural setting, including the historic environment associated with agricultural, pastoral and mining activities, the associated towns and villages,



the railway corridor and the natural setting alongside the Severn River, the study area exhibits a level of *aesthetic value considered important to the local community*;

- Properties in the study area retain local connections with those families who have lived and worked there, including any longstanding landowners, workers and their families. Decedents of Chinese tin miners who worked in the area may also have connections. These places *have a special association with the life or work of a particular person, group or organisation of importance in the local areas history*.

6.3 Significance Ratings for the Study Area

Using the methodology for significance assessment outlined in Section 5, the study area has been assessed by this report to have the following levels cultural heritage significance:

Table 8 – Summary of cultural heritage significance for the study area.

Value	Rating	Justification
Aesthetic	Moderate	Surviving today as what has remained a relatively rural setting, the study area presents a level of aesthetic qualities related to natural and historic nature of the site (relevant to the local community).
Historic	Moderate	Representing historical activities including pastoral, mining and agricultural pursuits commonplace to the area since settlement.
Scientific	Moderate	Elements survive as remnants of the historic nature of the study areas, especially the pastoral, mining and agricultural pursuits, which collectively have potential to contribute to an understanding of the local areas history. (Further investigation and survey of the Severn River Tin Mining Precinct is required)
Social	Low-Moderate	Properties in the study area have local connections with those families who have lived and worked there, including any longstanding landowners, workers and their families.



6.4 Significance Ratings for Archaeological Sites and Places

Alongside the abovementioned statement of significance provided for the broader study area, it is important to discuss the archaeological sites and places relevant to the study area identified by this report. These significance ratings for individual sites and places provide the final layer of assessment and allow informed decisions regarding management of potential impact by the Project in the following sections.

This section attributes individual significance ratings for the individual sites and places identified in Table 6 (Section 4C.2) which are directly affected by the Project. Assessment of these sites and places is completed using information gathered during background research, field survey and other relevant information, along with significance assessment frameworks discussed in Section 5.2.

The following levels of significance are attributed to the abovementioned sites:

Table 9 –Significance ratings for individual sites and places directly affected by the Project.

Site ID	Description	Individual Significance Rating	Comments
ESHAS – 1	Historic Grave	Moderate	Most likely the grave of a Chinese tin miner, evidence of Chinese miner's in the area. Requires further assessment as part of the Severn River Mining Precinct
ESHAS – 2	Stone wall	Moderate	Stone wall most likely evidence of early tin mining activities. Requires further assessment as part of the Severn River Mining Precinct
ESHAS – 3	Waterhole	Low	Evidence of longstanding water source point for agricultural activities
ESHAS – 4	Homestead Complex	Low-Moderate	Indicator of period in time when land selection began and in fair condition
ESHAS – 5	Homestead	Low	Limited outbuildings or associated infrastructure noted
ESHAS – 6	Timber Rail Bridge	Low-Moderate	Early rail bridge within the rail corridor. These bridges are becoming rarer.
ESHAS – 7	St. Denys Anglican Church	Moderate	Registered on the Qld Heritage Register (QHR Significance assessment provided Section 2).
ESHAS – 8	Former Site of Applethorpe Railway Station	Low	Surviving former railway station site, limited infrastructure remaining.
ESHAS – 9	Glen Aplin Rail Bridge.	Low-Moderate	Early rail bridge within the rail corridor. These bridges are becoming rarer.
ESHAS – 10	Ballandean Railway Station and Associated Grounds	Moderate	Early station complex which demonstrates characteristics within a agricultural community such as Ballandean. Now used as Tourist Information Centre.



6.5 Significance Ratings for Historic Precincts

Table 10 –Significance ratings for precincts related to the Project.

Description	Significance Rating	Comments
Severn River Mining Precinct	Moderate - High	True nature of Precinct is not adequately understood and requires further targeted investigation/survey. Results have the potential to lower this significance rating.
Railway Precinct	Moderate	Evidence of the former the interstate link between Brisbane and Sydney.

Additionally, this report suggests that there is some potential for further historic items to exist within the study area as ground surface visibility (GSV), along with the size and nature of the survey did not allow for a complete survey of this area. Most importantly, there is the potential for archaeological sites associated with the mining industry to exist in and around the Severn River and associated waterways. There is also some potential for archaeological sites associated with agricultural, pastoral and settlement pursuits to exist throughout the study area.



7 PROPOSED DEVELOPMENT

The two key objectives for the proposed Emu Swamp Dam Project are:

- To develop a new urban water source for Stanthorpe; and
- To provide water for the agricultural sector of Stanthorpe Shire.

The Dam Project includes two design options. The Project will either be an urban water supply project or a combined urban and irrigation water supply project. Accordingly, preliminary designs for an Urban and combined Urban and Irrigation Dam option have been proposed. Within the inundation area, the Project will affect a maximum surface area of 196 ha of primarily agricultural land and water. The Project will also impact 125.2km of primarily road reserve along the urban and irrigation pipeline routes.

7.1 The Nature of the Proposed Development

The Emu Swamp Dam Project will incorporate the development of a new urban water supply dam on the Severn River (5,000 ML) and pipeline (with associated pump stations and infrastructure) to Stanthorpe; and an option to develop a larger dam (10,500 ML) to provide irrigation water for agricultural producers in the upper Severn River catchments. The decision to construct the Urban only or combined Urban and Irrigation Dam has not as yet been made.

7.2 Types of Potential Impacts

Direct impact on these sites and places of cultural heritage significance will generally be in the nature of surface and sub-surface disturbance and vegetation clearance related to the Dams construction, development of associated infrastructure and the inundation itself.

Indirect impacts may occur in adjoining areas of the site from day to day operation of vehicles and associated activities.

7.3 Project Timeframes

Construction of the dam is planned to take place in May 2008 and will be completed by August 2009. The Emu Swamp Dam Project has a nominal engineering life of 100 years.



7.4 Project Impact on Sites and Places of Cultural Heritage Significance

The field survey has identified ten sites of low to moderate levels of cultural heritage significance within the study area. Review of the proposed project indicates that four of these sites are directly impacted by the proposed project.

Table 11 - Significant sites impacted by the project.

Impact type	Impacted site/s	Individual Significance Rating
Direct impact	ESHAS – 2 Stone wall	Moderate
Direct impact	ESHAS – 3 Waterhole	Low
Direct impact	Homestead Complex	Low-Moderate
Direct impact	Homestead	Low

The field survey has identified two precincts of moderate and moderate to high levels of cultural heritage significance within the study area. Review of the proposed project indicates that one (1) of these precincts is directly impacted by the proposed project.

Table 12 - Significant precinct impacted by the project.

Impact type	Impacted precinct/s	Significance Rating
Direct impact	Severn River Mining Precinct	Moderate-High

It is concluded that there is some potential for further historic places/items to exist within the study area as the nature of field survey did not allow for a comprehensive survey of 100% of the study area. These are likely to be remnant sites relating to mining, pastoral and agricultural activities, such as graves, hand built stone weirs, historic survey trees and remnant boundary fence lines that might exist across the study area and in particular within the inundation area.

From a heritage perspective (and aside from the Emu Swamp Mining Precinct) this report has concluded that the study area is likely to contain, at best, moderate levels of local cultural heritage significance.

7.5 Consultation

7.5.1 The Project

Stanthorpe Shire Council has undertaken the preparation of the EIS, which has involved a detailed public consultation and communication process involving a range of key



stakeholders and community members. Consultation has engaged ‘affected persons’ (which comprise near neighbours to the Project and surrounding communities) and ‘interested persons’, as defined within the *Environment Protection Act 1994* (EP Act). The public consultation process has supported the EIS development by identifying key issues and areas of concern to relevant stakeholders and community members. The EIS has responded to these issues and identified ways to minimise potential impacts and maximise potential benefits of the project.

Objectives of the communication and consultation program for the project development included:

- An open and accountable community consultation program which meets and, where possible, exceeds, all requirements under the State Development and Public Works Organisation Act 1971 and Environmental Protection and Biodiversity Conservation Act 1999;
- Opportunities for ‘affected’ and ‘interested’ persons to contribute to the process;
- Qualitative measures of community support and relative levels of concern about particular issues;
- Understand and respond to community issues where necessary; and
- Feedback is captured and incorporated into the EIS and supplementary material.

The consultation process has sought to encourage and facilitate active community involvement in the EIS process and provide ongoing information about the proposed development. The approach has been to assist ‘affected’ and ‘interested’ persons to explore project benefits, impacts and issues by facilitating community participation in reviewing project plans and enabling review of project documentation (i.e. Draft Terms of Reference, Draft EIS, etc.). Those people likely to be directly affected by the project (e.g. nearby landowners, local government etc) have been provided with correspondence and opportunities for specific consultation.

7.5.2 Consultation relevant to the field survey

The following people were consulted in relation to the cultural heritage survey:

- Rose Coburn (Stanthorpe Shire Council);
- Mr Rob Simcocks;
- Mr John Salata;
- Ms Maria Nader;
- Mr Joshua Mayer;
- Ms Michelle Marlow and Mr Rick Boyd.



8 RECOMMENDATIONS

This section provides specific recommendations to manage identified areas impacted by the Project, along with general mitigation measures for potential impact on unknown sites within the study area.

From a heritage perspective (and outside the discussion of potential within the Severn River Mining Precinct), this report has concluded that the study area contains, at best, moderate levels of local cultural heritage significance.

Assuming the recommendations below are suitably implemented, this report finds the nature and level of impact by the Project is manageable.

8.1 Recommendation 1 – Avoidance of Sites

The best form of cultural heritage management is avoidance of impact on sites and places of significance. It is recommended that the design of the Project take into account each of the heritage sites and places discussed in this report, and, where possible, avoids impact.

Of particular note is the Railway Precinct which adjoins the road reserve and subsequently the pipeline corridor in many places. Elements and sites within this Precinct therefore require special consideration throughout the life of the Project.

8.2 Recommendation 2 – Further Survey of Severn River Mining Precinct

The area identified as the Severn River Mining Precinct will be impacted by inundation as a result of the project. This Precinct includes the grave (ESHAS 1) and the stone wall (ESHAS 2).

Due to the potential for archaeological material to remain *in situ* in this vicinity of the study area, it is recommended that a systematic assessment of this immediate area be conducted to ensure that the type and extent of any surviving archaeological material is researched, investigated, recorded and mitigated (if required) using acceptable archaeological methods prior to any development or impact on or below ground in this area. This assessment can be carried out in stages according to construction phases of the Project. On the conclusion of this investigation, recommendations will be made in relation to suitable management of the precinct. Depending on the results of this survey, recommendations may include:

- The preparation of a conservation management plan for the Precinct which includes a comparative analysis of the Precinct within the district and Queensland.



- At minimum, management strategies will need to be implemented for the Precinct, especially for the grave and the stone wall.

8.3 Recommendation 3 – Recording of Sites

The Homestead sites (ESHAS 4 and 5) and the waterhole (ESHAS 3) will be directly impacted as a result of the Project.

This report recommends a basic level of photographic recording is conducted which captures the nature of the item and its context within the cultural environment within the study area prior to works commencing in the area.

8.4 Recommendation 4 – Heritage Management Plan (HMP)

A variety of management strategies are required in order to mitigate cultural heritage values identified within this report such as unexpected cultural heritage material or sites found during the construction stage of the Project.

Accordingly, a Heritage Management Plan (HMP) should be prepared for the entire Project Area to provide the Project team with a suitable strategy to protect sites and place of cultural heritage significance (completed prior to the construction phase of the Project commencing).

The HMP will provide suitable strategies for the inundation, urban and irrigation pipelines especially in areas of historic heritage potential such as towns and villages and associated infrastructure. The HMP should also include policies and procedures abovementioned for management of archaeological finds during the Project.

Additionally, this study recommends that diligence should be practiced during works conducted within the study area, particularly during any clearing or construction phases associated with initial preparation of the project area. This diligence should include specifically instructing crews of their obligations to look for cultural heritage material, and handing out educational leaflets at Workplace Health and Safety meetings. These leaflets should inform the workers what archaeological material may look like, and give them clear instructions on what to do if they find anything.



8.5 Recommendation 5 – Variation to the Project Design

Due to the nature of the study, variation of the footprint of the proposed development will require reassessment to determine the nature of the impact on sites and places of cultural heritage significance. Variation of footprint would include:

- An increase in inundation on the ground greater than 20m;
- Variation of the pipeline corridor outside of road reserve within towns and villages;
- Variation of the pipeline corridor in other areas greater than 20m.



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