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RP: JR Ref: 11.128.14

17 December 2010

Secretary
House of Representatives Standing Committee on
Regional Australia
PO Box 6021
Parliament House
CANBERRA ACT 2600

Via email: ra.reps@aph.gov.au

**Submission to the Standing Committee on Regional Australia Inquiry into the impact of the
Murray-Darling Basin Plan in Regional Australia**

Dear Sir

Please find attached the response of the Berrigan Shire Council to the Standing Committee on Regional Australia's invitation for submissions in relation to its *Inquiry into the impact of the Murray-Darling Basin Plan in Regional Australia*.

In accordance with the Terms of Reference this submission canvasses the direct and indirect impact of the Proposed Basin Plan on regional communities and the very high vulnerability, sensitivity and low adaptive capacity of the Shire's towns and neighbouring communities in Victoria and New South Wales.

The Shire's Mayor Councillor John Bruce and General Manager Mr Rowan Perkins are also available to meet with the Committee to answer questions in relation to this submission.

The Berrigan Shire Council would, in turn, welcome a visit to the Shire as a part of the Inquiry's consultation tour given that it is likely to be the most adversely effected area by the proposed reductions in productive water contained in the Draft Guide to the Murray-Darling Basin Plan.

Yours sincerely

Rowan Perkins
GENERAL MANAGER

*Heart of the
Southern Riverina*



Submission: House Standing Committee on
Regional Australia's Inquiry into the impact of
the Murray-Darling Basin Plan in Regional
Australia

16 December 2010

Glossary of Terms

ABARE	Australian Bureau of Agriculture and Resource Economics
ABARE - BRS	Australian Bureau of Agriculture and Resource Economics and Bureau of Rural Sciences
MDBA	Murray-Darling Basin Authority
RDA	Regional Development Australia
SDL	Sustainable Diversion Limit
SEIFA	Social and Economic Index for Areas

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1 Overview

- 1.1 The Berrigan Shire (population 8,677ⁱ) in New South Wales' Southern Riverina or Central Murray Irrigation region is bound to the south by the Murray River and the Victorian local government areas of Moira and Campaspe.
- 1.2 It is a Shire characterised by its efficient and productive irrigation-based agriculture industry: primarily rice and dairy. Council boundaries encompass the towns of Barooga, Berrigan, Finley and Tocumwal. These towns act as service hubs for the Shire's populationⁱⁱ (median age 45 years), water-based agri-businesses, and agri-businesses in the neighbouring New South Wales Shires' of Conargo and Jerilderie.

2 Introduction

- 2.1 The Berrigan Shire Council welcomes the opportunity to make a submission to the *House Standing Committee on Regional Australia's Inquiry into the impact of the Murray-Darling Basin Plan in Regional Australia*.
- 2.2 The Berrigan Shire Council believes that local consultation is imperative. Whilst, it is understood that the Inquiry proposes a public meeting in Deniliquin the Berrigan Shire Council has two of the three most vulnerable communities identified with there being a further 10 Victorian and New South Wales communities identified as vulnerable situated within 70 km of Berrigan.
- 2.3 A public meeting held at Berrigan provides an opportunity to include a cross border audience.
- 2.4 In accordance with the Inquiry's Terms of Reference this submission will address 'the socio-economic impact of the proposed Murray-Darling Basin Authority's Guide to the Proposed Basin Plan (the Proposed Basin Plan) on regional communities, with particular reference to:
 - The direct and indirect impact of the Proposed Basin Plan on regional communities, including agricultural industries, local business activity and community wellbeing.
 - Opportunities for economic growth, and diversification within the Shire's boundaries and between neighbouring regional communities.

- 2.5** Part I of this submission is a quantitative and qualitative analysis of the socio-economic impacts (direct and indirect) of the Basin plan for the communities and industry sectors located in the Berrigan Shire and regional communities adjacent to the Shire.
- 2.6** Local level factors that contribute to the Berrigan Shire’s vulnerability, adaptive capacity and sensitivity to the changes recommended by the Proposed Basin Plan are identified.
- 2.7** Recent research commissioned by Regional Development Australia on opportunities for economic growth and diversification by the industries that employ Berrigan Shire residents is canvassed. In particular, Regional Development Australia’s shift share analysis of the drivers of local employment and the impact of industry sector conditions upon jobs growth.
- 2.8** The framework and the data used for the quantitative analysis of vulnerability, sensitivity, and adaptive capacity are drawn from Murray-Darling Basin Authority commissioned reports.
1. *Indicators of Community Vulnerability and Adaptive Capacity across the Murray-Darling Basin – a focus on irrigation in agriculture: ABARE (2010)*
 2. *Environmentally Sustainable Diversion Limits in the Murray-Darling Basin: Socio-economic analysis ABARE (2010)*
- 2.9** Part II questions the assumptions that have contributed to the development of the Proposed Basin Plan and the subsequent socio-economic analysis undertaken by the ABARE in its report for the Murray-Darling Basin Authority *Environmentally Sustainable Diversion Limits in the Murray-Darling Basin: Socio-economic analysis*. A report that may subsequently be used by the Murray-Darling Basin Authority and other agencies to inform localised socio-economic analysis of vulnerable communities.
- 2.10** Part III presents qualitative ‘lay person’ observations about the role of governments, the agricultural industry and the research sector in developing and delivering infrastructure and technologies aimed at supporting water efficiency by the released *Guide to the Murray-Darling Basin Plan*.
- 2.11** Part IV is a qualitative ‘photo essay’: illustrating the impact upon the Shire’s social, environmental and economic capital of water insecurity and the ongoing uncertainty created by the Proposed Basin Plan. This selection of images and comment conveys in a universal language the direct and in-direct impact of a decade of water insecurity and the proposed *Basin Plan* on the townships that make up the Berrigan Shire: Finley, Berrigan, Tocumwal and Barooga.

3 Part I: Socio-Economic Impacts

ABARE-BRS deputy executive director Paul Morris said the number [of 800 job losses] was calculated from the position that the basin contributed about 0.5 per cent of Australia's gross domestic product (The Age Newspaper: 20 October 2010).

- 3.1 In the wake of the public comment that accompanied the Guide's release the 'loss of 800 jobs' has been the subject of debate and community angst.
- 3.2 The ABARE-BRS Executive Director's clarification that potential job losses were calculated from the position that the Basin contributed to 0.5 per cent of Australia's gross domestic product provides the platform for the Berrigan Shire Council's estimate of the extent and the number of job losses that will ensue should it be determined that a Sustainable Diversion Limit of 3500 gigalitres (GL) be applied.
- 3.3 Agriculture is **not** 0.5 per cent of the Berrigan Shire's gross product.
- 3.4 Agricultural businesses account for 50 per cent of the Berrigan Shire's 1077 employing and non-employing business. It employs 22 per cent or 788 Shire residents. Moreover, 377 of the Shire's 537 agriculture business are non-employing businesses.
- 3.5 A conservative estimate of the impact and potential job losses for this Shire alone suggests that agricultural (370) and cross-sector (462) job losses will be in the order of 832 jobs currently employing 25% of the Shire's total labour force.
- 3.6 Current estimates suggest that for every 4 jobs lost in the Shire's agriculture sector there will be a flow on effect and a corresponding loss of a further 5 jobs in the manufacturing, transport, retail, accommodation, the professional services and administrative services sector.
- 3.7 No community can sustain a 25% reduction in its employed labour force and remain competitive in the current market and investment environment: public and private.
- 3.8 **Index of Community Vulnerability: Berrigan Shire**

According to the (2010) Australian Bureau of Agriculture and Resource Economics (ABARE) report for the Murray-Darling Basin Authority proposing a framework for the measurement of community vulnerability in the Murray-Darling Basin

A significant proportion of Basin communities exhibit only a low to moderate level of vulnerability. These communities in general have low levels of sensitivity and higher levels of adaptive capacity which lessen their vulnerability to changes in access to water for consumptive purposes (ABARE 2010: 25)

Using the modelling proposed by ABARE in its October 2010 report the vulnerability and sensitivity of the Berrigan Shire to change in access to water for consumptive purposes is very high.

Indices of Community Vulnerability: Berrigan Shire

Berrigan Shire	Vulnerability	Sensitivity	Adaptive Capacity	Berrigan Shire comment on underlying indicators
	Very High (0.8 – 1.0)	Very High (0.8 – 1.0)	Low to Moderate (0.2 – 0.4)	<ul style="list-style-type: none"> • High number of irrigated farms • History of farm consolidation • High percentage of labour-force engaged in downstream agri-industry processing and transport • Per capita income below Murray-Darling Basin average and the lowest per capita income Central Murrayⁱⁱⁱ • Ageing labour force • Oldest population in Central Murray^{iv} • Median age is 7 years older than Australian median • Increase in outward migration of young people 14 years to 24 years • Decline in student enrolments Finley High School 2006 – 2009^v • Increase in the measureable extent of community disadvantage i.e: The SEIFA Index of Relative Socio-economic Advantage and Disadvantage 2001 was 945 – the SEIFA Index of Relative Socio-economic Advantage and Disadvantage 2006 had fallen to 938 • Decline in median house and unit prices Berrigan Shire 2006 – 2010^{vi} • Impact of transition arrangements upon competitiveness of dairy industry as downstream processing occurs in Victoria • Limited selection and access to vocational/industry training/retraining

(Source: Developed from ABARE 2010 *Indicators of community vulnerability and adaptive capacity across the Murray-Darling Basin – a focus on irrigation in agriculture*)

- 3.9** The Berrigan Shire is a community that exhibits a very high level of vulnerability and sensitivity to change in access to water for consumptive purposes. The adaptive capacity of the Shire is rated as low to moderate, due according to the report writers, to the diversity of the Shire's economy and population growth.
- 3.10** It is the Shire's contention that population growth driven by inward migration of retirees 50 years to 64 years of age with connections to family in metropolitan Melbourne does not add to the human capital of the Shire and its adaptive capacity.
- 3.11** Rather in the context of the Shire's below Murray-Darling Basin average per capita income; retiree fuelled population growth; and the median age of its active labour force relative to other Basin communities; these are local level indicators that should be considered when calculating the adaptive capacity of the Shire.
- 3.12** Similarly, there should also be closer examination of the measures that suggest that the diversity of the Shire's economy enhances its adaptive capacity.
- 3.13** The Berrigan Shire Council would argue that the adaptive capacity of the Shire is more likely to be **low** to **very low** rather than low to moderate.
- 3.14** As, regardless of whether or not there is change in access to water for consumptive purposes, the diversity and adaptive capacity of the Shire's economy is sensitive to the following:
- Low per capita income base
 - The ageing profile of the Shire's active labour force
 - Current and future demand upon health and social support services due to the age of its population
 - Decline in youth population and outward migration of families before students commence year 10.
 - Limited to no publicly funded access to worksite training and re-training in agricultural and non-agricultural based industries. For example, tourism is viewed as an alternate industry for the Shire. However, the only tourism related training available in the Shire relates to the responsible serving of alcohol and gaming licensing. Residents that want to access vocational training or have recognition of prior learning in this seasonal, alternate and low wage sector have to bear the additional expense of inter-state or regional travel and accommodation to access a training provider.
 - Exposure of the Shire's economy through agriculture and tourism to fluctuations in international currency and global commodity markets.

3.15 The Basin Plan exponentially exacerbates the non-water challenges confronting the economic diversity and sustainability of the Berrigan Shire and in doing so further reduces the Shire’s socio-economic adaptive capacity.

3.16 Employment Growth: Shift Share Analysis

3.17 Regional Development Australia commissioned a *Shift Share Analysis of the Murray Region*^{vii} and the report developed by the Western Research Institute (2009) provides a framework for examining opportunities for economic growth and diversification by the industries that employ Berrigan Shire residents.

3.18 This report identified primary and secondary shift share growth drivers^{viii} and categorised Murray region industries by type.

- Type I: local industries growing at a faster rate than state and industry averages.
- Type II: local industries showing slower growth in employment than the average for that industry across regional New South Wales and Victoria.
- Type III: slower employment growth than the average recorded across regional New South Wales and Victoria – industries that may be mature or declining industries and where there may be few opportunities for growth.
- Type IV: industries recording higher employment growth in the local area, despite lower than average employment growth in the industry across the rest of the state.

3.19 The following table profiles the top 5 employing industries of Berrigan Shire residents, the positive or negative primary and secondary shift share growth drivers for these industries and the type of intervention that may support future jobs growth.

Industry	No of Businesses	Shift Share Industry Type	Murray Region Primary Shift Share Growth Driver	Murray Secondary Shift Share Growth Driver	Intervention that may support growth
AGRICULTURE FORESTRY AND FISHING	537	IV	Industry Mix	Regional State	Actions that resolve negative impact of industry mix upon growth Plan to leverage growth from regional / state, and industry economic initiatives
PROPERTY AND BUSINESS SERVICES	129	IV	Regional State	Local Conditions	Plan to leverage growth from regional / state, and industry economic initiatives
TRANSPORT AND STORAGE	78	I	Local Conditions	Regional State	Investment in actions that strengthen locational advantages Plan to leverage growth from regional / state, and industry economic initiatives

Industry	No of Businesses	Shift Share Industry Type	Murray Region Primary Shift Share Growth Driver	Murray Secondary Shift Share Growth Driver	Intervention that may support growth
RETAIL TRADE	72	IV	Regional State	Local Conditions	Plan to leverage growth from regional / state industry, environmental, social and economic initiatives Investment by business in promotion of favourable local conditions
ACCOMMODATION, CAFES AND RESTAURANTS	48	IV	Regional State	Local Conditions	Plan to leverage growth from regional / state industry and economic initiatives Investment by business in promotion of favourable local conditions

(Table developed from: ABS 2007: Business by Industry Division by Statistical Local Area by Annual Turnover Size Ranges; ABS 2007: Business by Industry Division by Statistical Local Area by Employment Size Ranges; and Western Research Institute (2009) *Regional Development Australia (Murray) Shift Share Analysis*)

- 3.20** According to Regional Development Australia's shift share analysis agriculture, retail trade, accommodation, property and business services are type IV industries which, under normal circumstances could be expected to grow through the attraction of 'more investment in that industry in the local area' (RDA 2010: 25).
- 3.21** The Murray-Darling Basin Plan and the uncertainty that it generates in the broader regional economy constrains the principal employment growth pathway for four out of five of the Berrigan Shire's major employing industries.
- 3.22** Rendering ineffective local efforts and developments designed to create an attractive investment environment.
- 3.23** Moreover, a desk top review of current state government and commonwealth government environmental, social and economic initiatives/strategic plans further highlights the paucity of projects and economic initiatives.
- 3.24** Projects and initiatives that could be used to leverage business growth or to respond to the needs of employers in the Berrigan and neighbouring Jerilderie and Conargo Shires serviced by the Newell Highway (Brisbane – Melbourne) National Highway 39 transit corridor.
- 3.25** Employment growth in agriculture is also adversely impacted by industry mix, which in the Berrigan Shire is a negative driver of employment growth.
- 3.26** According to *Regional Development Australia Shift Share Analysis* while drought and the Murray-Darling Basin Plan are factors, it is the industry mix or the structure of the agriculture sector which is also driving decreased and decreasing agricultural employment opportunities.
- 3.27** For example, market driven agricultural industry adjustment has led to the uptake by producers of water saving technologies, improved farming practices, the consolidation of properties, and an associated decrease in agriculture industry jobs.
- 3.28** The Berrigan Shire respectfully submits that in the context of localised economic development issues that consideration is given by the Committee to the impact of the Murray-Darling Basin Plan and change in Sustainable Diversion Limits upon the local of economy of the Berrigan Shire, and the capacity of local business and employing industries to:
- a) Resolve the impact of negative jobs growth that result from agriculture industry mix and adjustment.
 - b) Leverage growth from the non-existent Central Murray Newell Highway Corridor regional, cross-border, New South Wales and Commonwealth government industry and economic initiatives.
 - c) Invest with some level of confidence in actions that promote the location, lifestyle, amenity and transit advantages of the Berrigan Shire.
 - d) Access financial support, in the absence of state and federal government expenditure in the sub region, for job creation or innovation in alternate niche industries.

3.29 The Berrigan Shire Council would also recommend for Committee consideration that industry and government reform and structural adjustment programs designed to foster economic growth and diversification be:

- a) Supported by State and Federal Government Department plans that provide for, and promote, public and private investment and job creation in Central Murray small towns and subregional service centres: not just the regional Riverina service centres of Albury, Wagga Wagga and Deniliquin.
- b) Flexible and responsive to local conditions and the need to facilitate a 'competitive' and sustainable economic environment for business and industries in the New South Wales (Central Murray) border communities and towns of: Barooga, Tocumwal, Finley and Berrigan (Berrigan Shire).
- c) Supported by active co-operation between employers and government facilitating a realistic assessment of local labour market opportunities and workforce development issues.
- d) Aimed at re-employing (not just retraining) displaced workers.
- e) Informed by *ex ante* policy evaluation of structural reform and whether it is in the overall interests of affected communities, supported by mid and post evaluation so that local programs can be modified and informed by implementation issues and experience.

4 Part II: Reporting upon Community Vulnerability

4.1 The Berrigan Shire Council welcomed the October 2010 publication by the Murray-Darling Basin Authority of the *Environmentally Sustainable Diversion Limits in the Murray-Darling Basin: Socio-economic analysis* as evidence that the Authority is engaging in consideration of the socio-economic impacts of the Basin Plan's recommendations.

4.2 The Berrigan Shire Council would draw the Committee's attention to the following commentary contained in this report. Namely that the report's authors noted the following:

- a) That the report was 'An economic analysis of the effects of sustainable diversion limits (SDLs) ... [a] report focused on estimating the economic effects of the full reduction in water availability relative to the long-run historical levels imposed by SDLs' (ABARE—BRS 2010: 1 and 2)
- b) 'The new SDLs will improve efficiency where the environmental benefits achieved outweigh the costs imposed on other water users such as agriculture ... this report focuses on estimating the costs of restricting access to water, and makes no attempt to the value the benefits from providing additional water for environmental assets' (ABARE—BRS 2010: 12)

- c) 'In the absence of efficient interregional water trade markets—where barriers to trade have been removed ... the setting of SDLs across connected regions may involve efficiency implications [and] ... while interregional water trade is currently subject to a number of artificial constraints, removing constraints and otherwise improving the efficiency of the market remains the focus of future reforms' (ABARE—BRS 2010: 13)
- d) 'SDLs are assumed to be implemented simultaneously in all regions (Victorian SDLs are not delayed)' (ABARE—BRS 2010: 106)
- e) 'Towns and communities most dependent on irrigation are likely to be affected more significantly by the proposed SDLs' (ABARE—BRS 2010: 14).

4.3 Of concern to the Berrigan Shire Council, is

- I. That despite the Murray-Darling Basin Authority's brief that ABARE-BRS 'identify the socioeconomic implications of the proposed Basin plan for the Australian community, economy, people and communities located within the Basin' (ABARE—BRS 2010: 1) what was delivered and accepted by the Authority without re-titling is an 'economic analysis': not a socio-economic analysis
- II. The untested assumption that SDLs will improve efficiency and lead to environmental outcomes, the benefits of which will outweigh the costs imposed on other water users. The rationale given in the report for this being an untested assumption is that 'while there are a number of methodologies (such as choice modelling) available for estimating non-market values, these methods require careful application if they are to generate reliable estimates, and accurate studies are costly' (ABARE—BRS 2010: 12).

The Berrigan Shire Council would argue that if it is technically possible to do so, that the cost of an accurate study of non-market values is warranted before decisions are made that affect environmental assets, the livelihood and prosperity of Shire residents, agri-businesses and water-based tourism businesses.

- III. That a key justification for the proposed SDLs are gains in water use efficiency. What is becoming increasingly apparent is that in the absence of willing sellers and plans for future water trade market reform that any efficiency gained through the introduction of new SDLs will not be realised.
- IV. That at the time of writing it remains more likely than not that Victorian SDLs will be delayed. The delay of SDLs, while of great benefit to Victorian based irrigators, will have a devastating impact on the competitiveness of Berrigan Shire irrigators who due to the proximity of Victorian agri-business processors are dependent on cross-border processing and trade.

- V. That the towns and communities most dependent on irrigation are likely to be affected more significantly by the proposed SDLs. According to the ABARE—BRS water trade model (3500GL with inter-regional water trade scenario) the Berrigan Shire townships of Berrigan and Finley are ranked 1 and 3 respectively out of 88 Murray-Darling Basin towns that will experience a reduction in the gross value of irrigated agricultural production.
- VI. Appendix II further illustrates the extent of regional vulnerability. Appendix II maps Central Murray communities serviced by the Melbourne – Brisbane transit corridor that will experience a reduction in the gross value of irrigated agricultural production.

This map drawn within a 70 km radius of Berrigan encompasses twelve (12) of the 88 Murray-Darling Basin communities identified as vulnerable to change in access to water for consumptive purposes. These are communities that with the exception of Conargo will not necessarily experience growth from government programs designed to support the regional service centres of Deniliquin (NSW) and the Berrigan Shire’s natural regional service centre: Shepparton (Vic).

Deniliquin is not a natural regional service centre for the Berrigan Shire and neighbouring vulnerable communities. The natural regional service centre is Shepparton in Victoria.

Anecdotal comment supported by jurisdictional boundaries, suggests that government programs and investment in the regional service centre of Shepparton does not facilitate economic growth in New South Wales communities serviced by Shepparton.

- 4.4 The Berrigan Shire Council respectfully requests that should these reports be used by the Committee to inform socio-economic analysis of vulnerable communities that the aforementioned observations are noted and incorporated in Committee decision making.

5 Part III: Guide to the Murray Darling Basin Plan-Observations

- 5.1 The publication of the *Guide to the Draft Murray-Darling Basin Plan* is the culmination of widespread community concern, scientific study and national interest in the health of our rivers and the impacts of human settlement and water-use upon our natural environment.
- 5.2 Berrigan Shire residents, in particular those engaged in agriculture and tourism, have for decades demonstrated a vested interest in protecting our river and reducing production costs through the sustainable use of water and technologies. It is on this basis that the following observations are made by the Berrigan Shire Council on behalf of its community:
 - 1. Murray River flood events are part of the river’s natural cycle. The Council believes that these natural flood events should be counted towards the required environmental flows

with a corresponding decrease in SDL's. The Council also questions where previous water buy back quantities purchased under the Living Murray Program are accounted for.

2. There appears to be little investigation of the use of engineering solutions to achieve environmental outcomes. It is clearly possible to achieve some of these without the need to flood the whole River and to greatly reduce the gross river flows required.
3. The option of a win/win solution is not on the table while higher order values of the national interest appear to take precedence over local communities that will bear the greatest part of the social and economic cost of the proposed Basin Plan.
4. Micro socio-economic analyses and industry transition planning needs to be undertaken, commitments given, and projects commenced for affected industries and communities **before** the proposed Basin Plan is implemented.
5. It is neither equitable nor sustainable to have staggered transition. All states, including Victoria, should transition to new SDLs in 2014 or 2019. If this is not delivered it will distort local economies in favour of Victoria with significant consequences for the Berrigan Shire and its economy.
6. In practice, the purchase of water by government does not compensate communities: it only reduces debt incurred by irrigators adjusting to market conditions, climate events, technology and changes in regulation.
7. What consideration has been given to compensating business and residents for current and subsequent decline in the value of their business or property in communities assessed as being very vulnerable and sensitive to the impact of the proposed Basin Plan?
8. Why are the South Australian Lakes – a catalyst for water reform – not properly considered by the proposed Basin Plan when they represent the greatest single water loss in the Basin?

- 5.3** The Berrigan Shire Council respectfully submits that the Committee in its deliberations seeks clarification from the Murray-Darling Basin Authority on the extent of consideration and the weight given by the Authority to the aforementioned issues.

6 Part IV: Photo Essay

- 6.1** Attached as Appendix III is a photo essay of the impact upon the Shire's social, environmental and economic capital of water insecurity and the ongoing uncertainty created by the Proposed Basin Plan.
- 6.2** This selection of images and commentary conveys in a universal language the direct and indirect impact of a decade of water insecurity and the proposed *Basin Plan* on the aspirations of the townships, businesses, families and individual residents that live, work, study in and visit the Berrigan Shire and neighbouring Shires.

References

ABARE (2010) *Indicators of Community Vulnerability and adaptive capacity across the Murray-Darling Basin – a focus on irrigation in agriculture*

ABARE—BRS (2010) *Environmentally sustainable diversion limits in the Murray-Darling Basin: Socio-economic analysis*

Hyder (2010) *Berrigan Shire: Strengthening Irrigation Communities*

Marsden Jacob Associates, RMCG, EBC Consultants, DBM Consultants, Australian National University, Geoff McLeod and Tim Cummins (2010) *Synthesis report. Economic and social profiles and impact assessments in the Murray-Darling Basin. A report to the Murray-Darling Basin Authority*

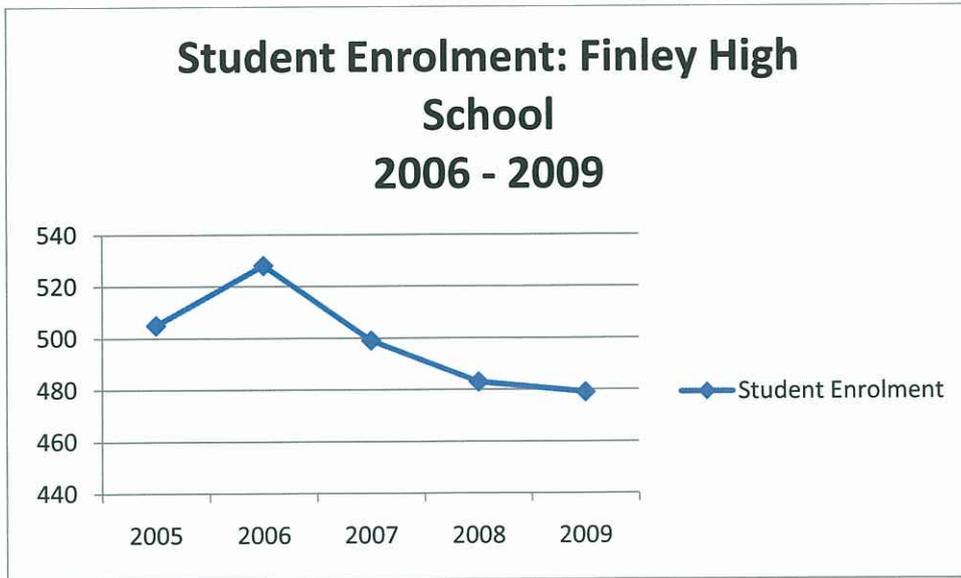
Western Research Institute (2009) *Regional Development Australia: Shift Share Analysis Murray Region*

7 Appendices

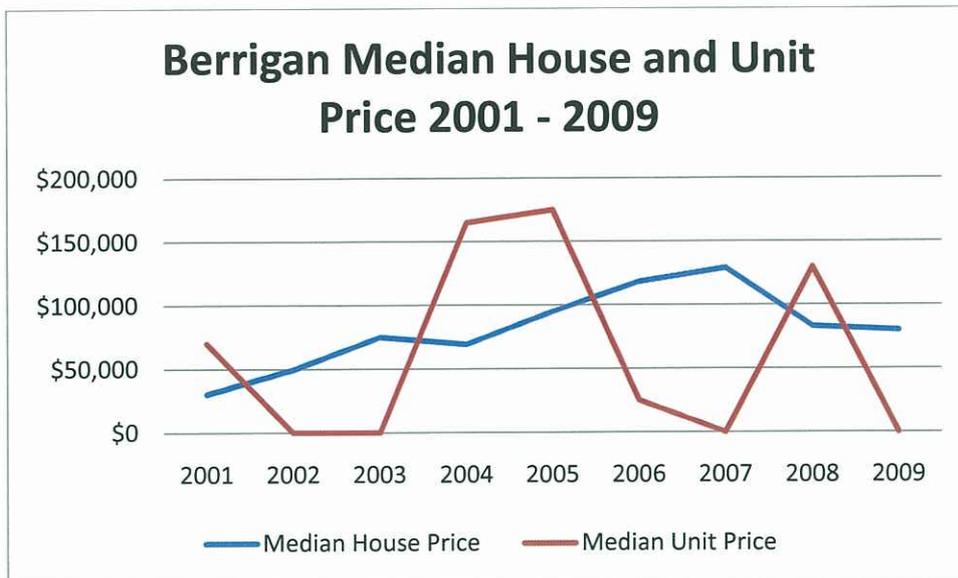
Appendix I – Local Data Berrigan Shire

Appendix II – Map of Vulnerable Communities

Appendix III – Photo Essay

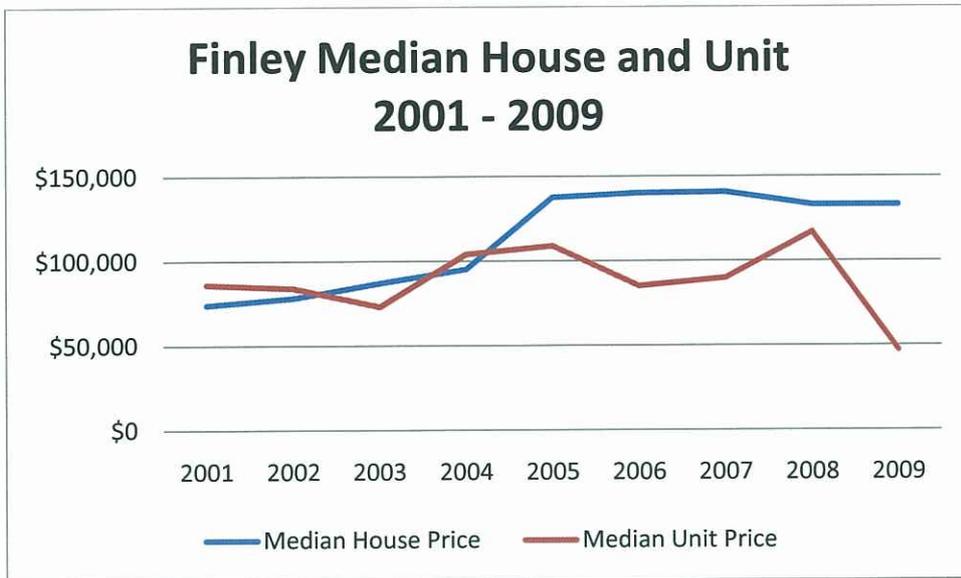


Source adapted from: Finley High School Annual Report <http://www.finley-h.schools.nsw.edu.au/sws/view/2525.node> accessed 18/11/2010

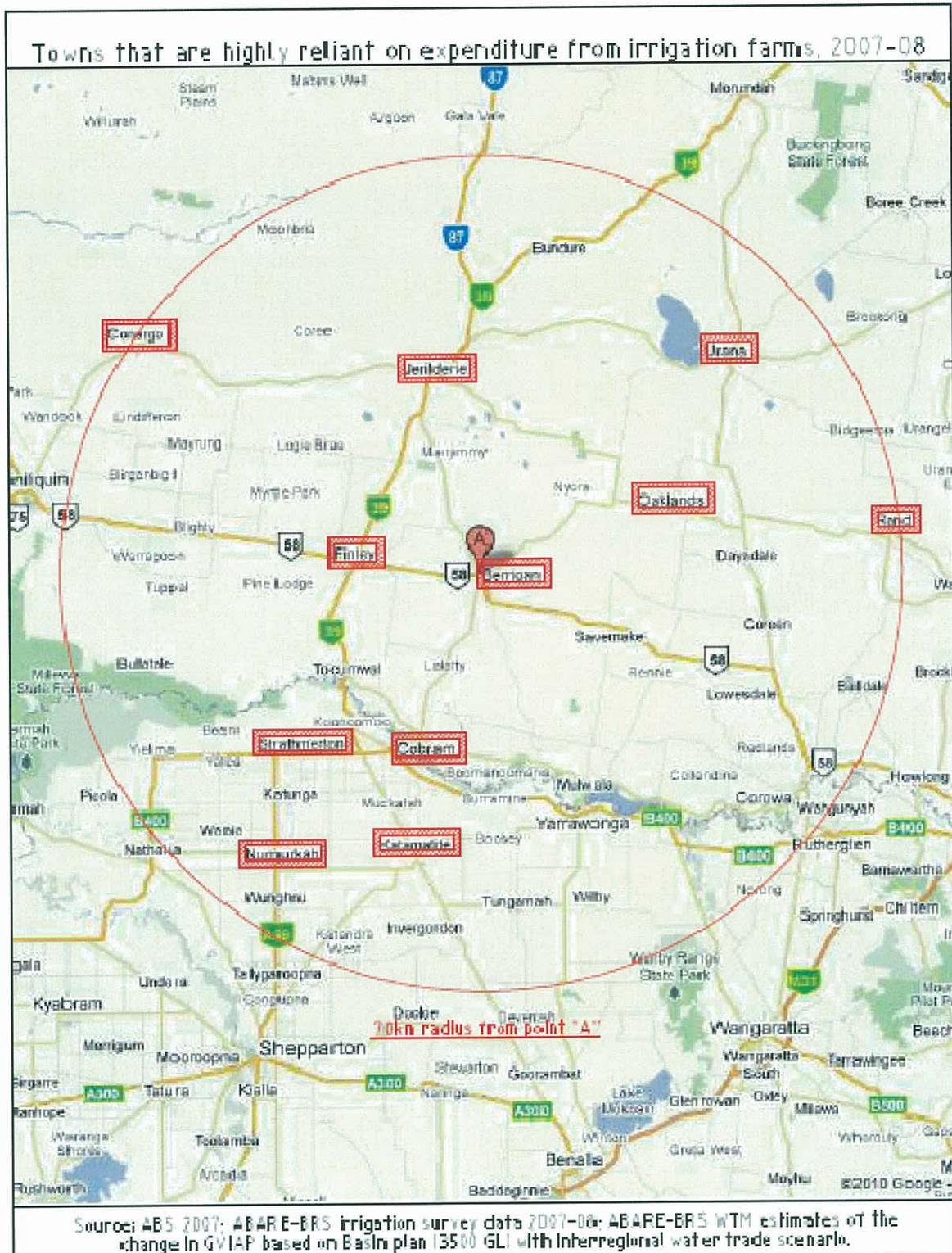


Source adapted from : <http://www.rs.realestate.com.au/cgi-bin/rsearch?a=sp&s=nsw&u=berrigan> accessed 18/11/2010

Appendix 1



Source adapted from : <http://www.rs.realestate.com.au/cgi-bin/rsearch?a=sp&s=nsw&u=finley>
accessed 18/11/2010



ⁱ Australian Government (2007) Department of Health and Ageing Population Projection

ⁱⁱ Australian Bureau of Statistics (2006) Census: Median Age (Australia) 37 years

ⁱⁱⁱ Hyder (2010) *Berrigan Shire: Strengthening Irrigation Communities*

^{iv} Hyder (2010) *Berrigan Shire: Strengthening Irrigation Communities*

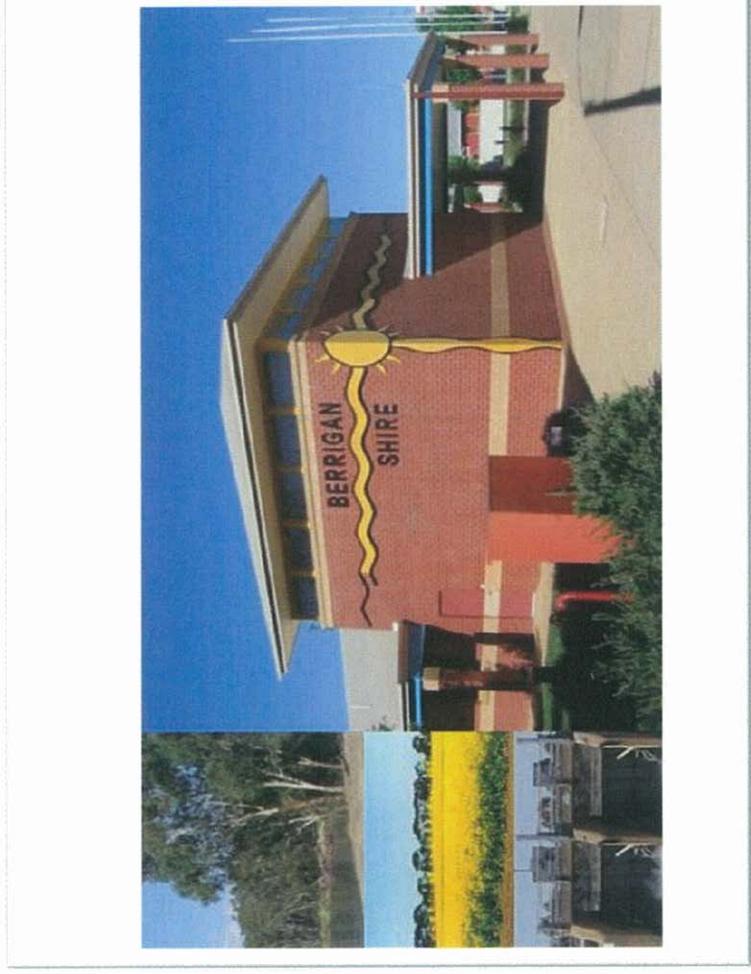
^v Appendix 1

^{vi} Appendix 1

^{vii} Shift-share analysis examines employment growth in a region by industry. Employment growth is attributed to the state economy, industry growth or local factors. This allows the comparison of local employment growth with state and industry averages. Employment growth for each industry was determined by comparing employment data for a region from two consecutive ABS Census collection periods. The Murray Region Shift-Share utilised data from the two most recent census 2001 and 2006. One of the key features of shift-share analysis is the ability to isolate and examine the impact of local factors on industry. Therefore no value is gained by updating unique local data with industry-wide or state-wide growth figures. (RDA Murray Regional 2010 – 15: 23).

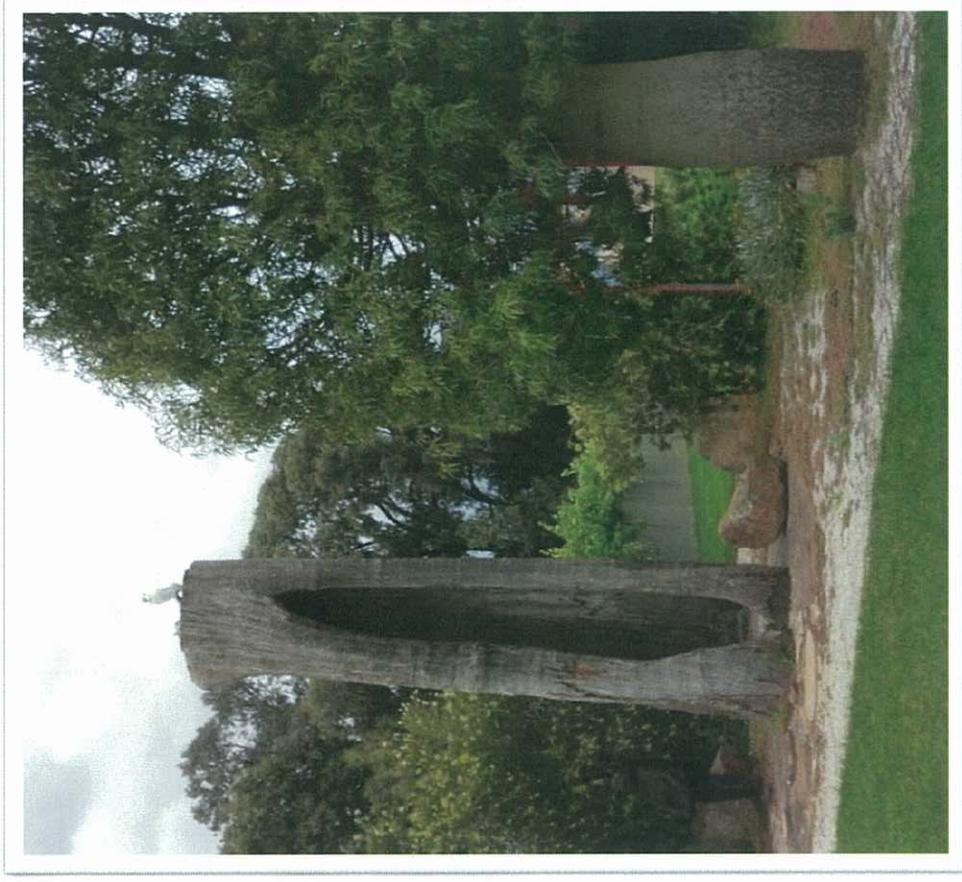
^{viii} Shift Share growth drivers: **Regional/State** – the extent to which a local economy is impacted by state and regional economic conditions and changes in state governments’ policies. Regionally the Berrigan Shire’s local economy is part of both the NSW and Victorian economies. **Industry Mix** – industries grow at different rate to the average for the economy as a whole. Thus the mix or types of industries in the Murray region affect opportunities for industry employment growth. **Local Conditions** – differences in employment growth attributed to local conditions: competitive advantage, attractiveness of economic investment environment, access to resources – labour, skills, knowledge, suppliers and infrastructure etc

Water and the Berrigan Shire



Canoe Tree: Finley

For thousands of years
the Murray River been
central to the socio-
economic health of the
people who live in the
region and use its
resources

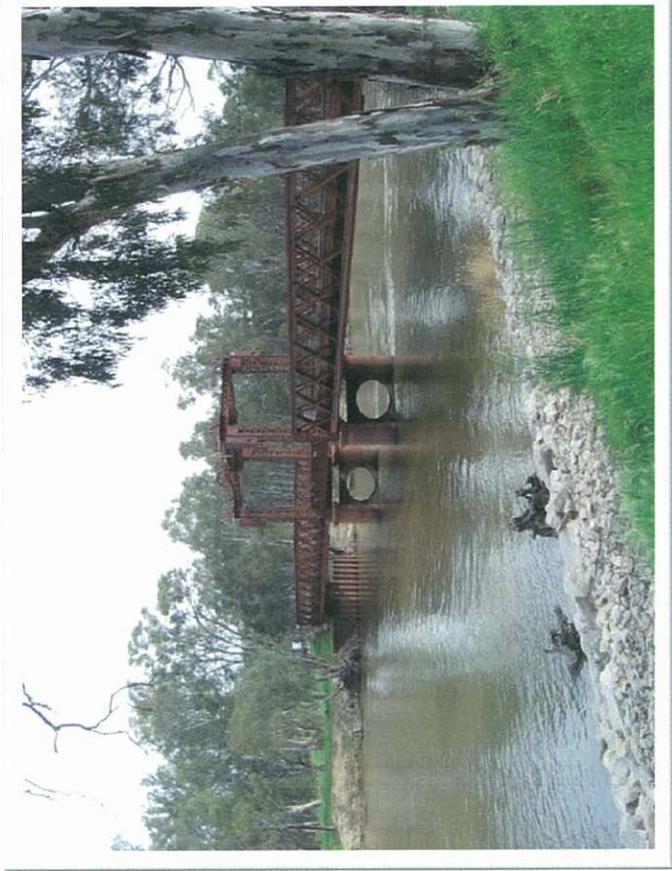


Nation Building: Federation

Tocumwal Bridge

New South Wales and Victorian Border Crossing

- River
- Road and
- Rail communication
and transport



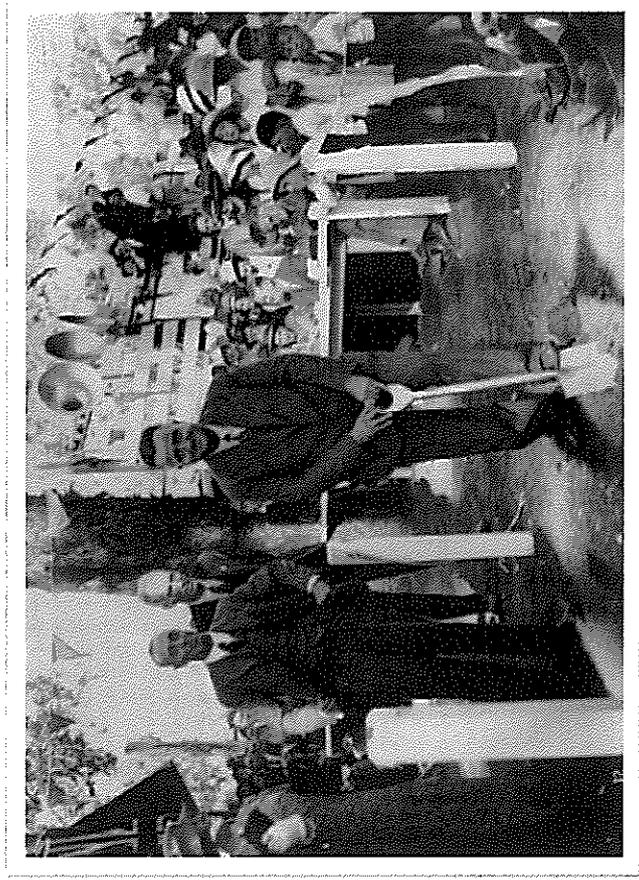
Sacrifice and Local Pride

Berrigan honours its
soldiers

World War I Memorial
Hall



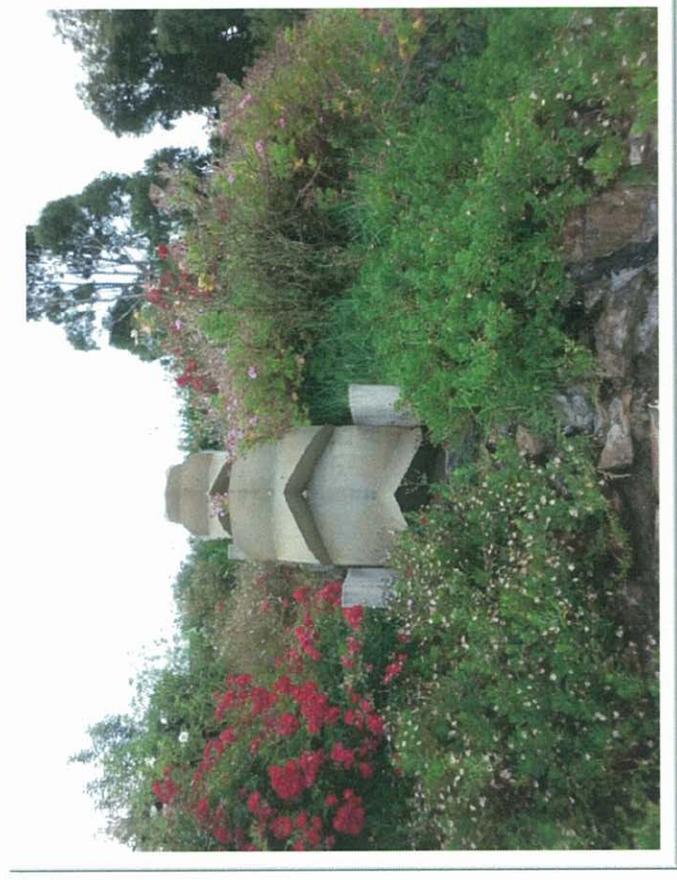
State of New South Wales Confidence and Local Pride 1933



Riverina Irrigation the
first sod is turned by
the then NSW Premier
Bertram Stevens

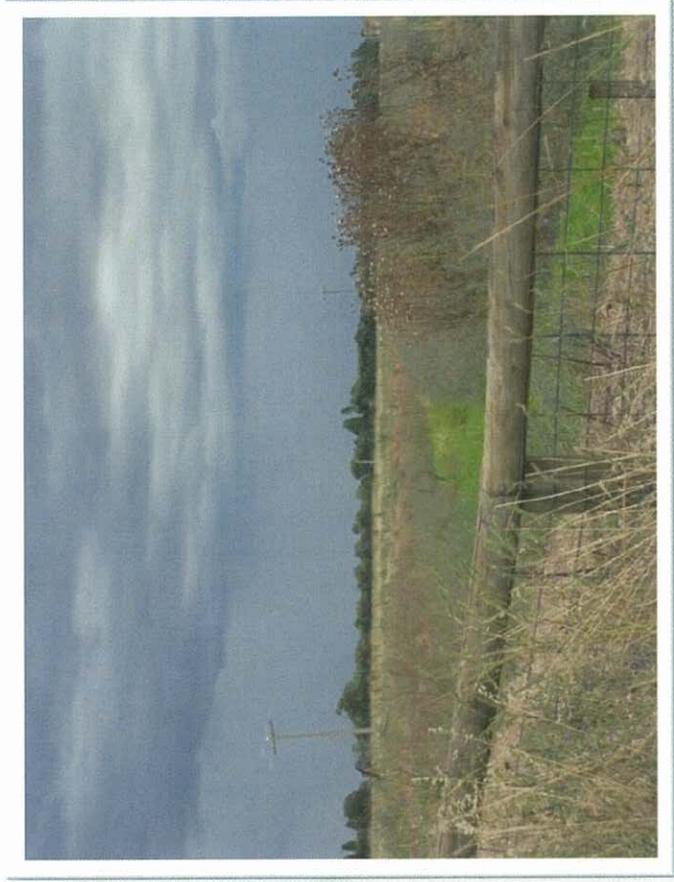
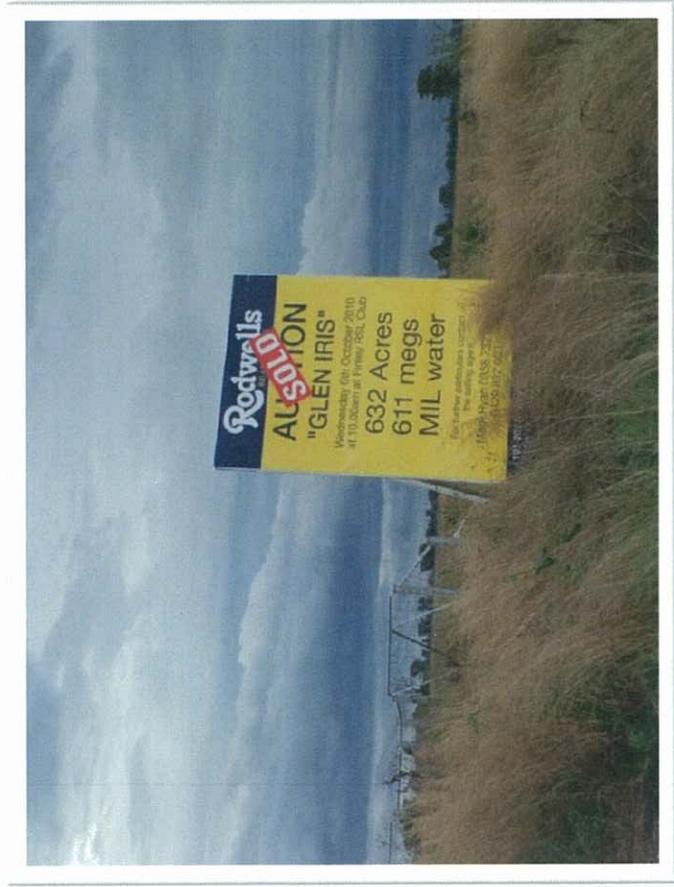
Finley 1996: A Prosperous Community:

Five decades later
Finley is the New South
Wales National Tidy
Towns State Finalist
and to celebrate local
service clubs
commission the Finley
Wheel of Prosperity



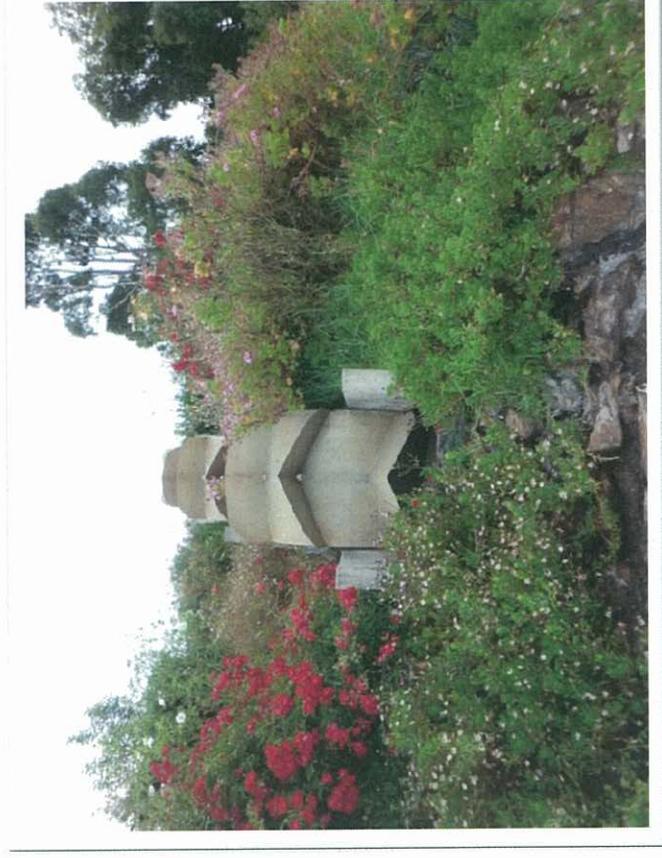
15 Years Later ...

For Sale: Water and weed infested irrigation channels



Main Street: Finley

Finley 1996: Prosperity and Resilience



Finley 2010: Poverty and Radicalism

