MINE LIFECYCLE PLANNING AND ENDURING VALUE FOR REMOTE COMMUNITIES

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DECLARATION

I certify that the substance of this thesis is my own and original work that has not already been submitted for any degree and is not currently being submitted for any other degree or qualification. I certify that any help received in preparing this thesis and all sources used have been acknowledged in this thesis.

Stuart Robertson

24 February 2016.

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My initial acknowledgement and thanks go to Anne Rix who through her assigning me a special project whilst I was employed with the NSW Government which started the process that led to this thesis. Anne asked me to examine some of the impacts upon NSW Government funded services and housing costs of the mining activities in the Gunnedah and Narrabri Local Government Areas. The results of this study were presented to a series of meetings throughout the New England and North West of NSW. At one of these meetings, towards the end of 2011, I had a conversation with Professor Alison Sheridan regarding converting the initial work into an Honours project. Professor Sheridan referred me to Dr Boyd Blackwell then a Post-Doctoral researcher at the Cooperative Research Centre for Remote Economic Participation (CRC-REP).

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PREFACE

This thesis is submitted as a thesis by publication under the relevant guidelines of the University of New England. Chapters two, three and five have been published, chapter four has been peer reviewed accepted and in the process of publication. Details of the publications are provided below.

Chapter two Robertson and Blackwell, Mine lifecycle planning and enduring value for remote communities (2014) was published in the Mining in a sustainable world special edition of the International Journal of Rural Law and Policy. The special edition arose from the Mining in a sustainable world conference held at the University of New England in October 2013 where I presented the findings of my literature review. Subsequently the paper Robertson and Blackwell (2014) forms the literature review of this thesis.

Chapter three Buitrago and Robertson, *Mine lifecycle planning: creating lasting value for communities* (2014) was published in the peer reviewed 2014 Life of Mine conference proceedings.

Chapter four Robertson and Argent, *The potential value of lifecycle planning for resource communities and planning for the enduring community value from mining* (*in press*) forms chapter 6 of an edited book, Labour force Mobility in the Australian Resources Industry: Socio-Economic and Regional Impacts. The chapter has been peer reviewed and accepted by the editor and publishers with final publication expected early 2016.

Chapter five Robertson and Blackwell, *Remote Mining Towns on the Rangelands: Determining Dependency within the Hinterland* (2015) was published in The Rangelands Journal v37(6) Innovation in Australian Rangelands. A special issue from the 18th Biennial Conference of the Australian Rangeland Society.

Chapters six and seven will be submitted for publication following the submission of this thesis.

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LIST OF ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACR	Aboriginal Community Researchers
AESCO	Adelaide Electricity Supply Company
ATLA	Adnyamathanha Tribal Lands Association
CRC-REP	Cooperative Research Centre for Remote Economic Participation
CSMI	Centre for Sustainability in Mining and Industry
CSR	Corporate Social Responsibility
DFID	Department for International Development
DIDO	Drive-In-Drive-Out
ETSA	Electricity Trust of South Australia
ECVM	Enduring Community Value from Mining
EIS	Environmental Impact Statement
FIFO	Fly In-Fly Out
FBT	Fringe Benefit Tax
GMI	Global Mining Initiative
ICMM	International Council for Mining and Metals
LDC	Long Distance Commuting
MCA	Minerals Council of Australia
MARP	Mining and Rehabilitation Program
NGO	Non-Government Organisations
OCA	Outback Communities Authority
SLO	Social License to Operate
SD	Sustainable Development
SL	Sustainable Livelihoods Framework

ABSTRACT

Mine lifecycle planning is an important part of any mineral extraction operation. However, mine lifecycle planning has often not taken into account the impacts upon communities and regions that support these operations. This thesis examines whether mine lifecycle planning can generate enduring value to host communities and their hinterlands by highlighting the need for these communities to have a diversified economic base with a normalised local government structure. Using a case study approach, two remote mining communities, Leigh Creek and Roxby Downs, at different stages of their mines lifecycle, in remote outback South Australia were examined.

The establishment and governance structures of the communities were reviewed along with the effect of operational planning decisions upon the mobility of the workforce. A survey and interviews with a subset of the survey respondents were undertaken. Analysis of the results highlighted the high level of dependency upon Leigh Creek by the surrounding hinterland communities, which has had the nearby mine close post the survey. In contrast, Roxby Downs, has not yet had a similar level of dependency develop upon it by its surrounding communities. The perceptions of the social aspects and infrastructure in these towns were examined, with the results indicating the social and infrastructure aspects enabled people to lead fulfilling lives, which in turn made the towns attractive places for residents. However, changes in population and a move to more mobile workforces undermined the ability of Leigh Creek to maintain its sporting and social activities; in Roxby Downs for small private service business to remain viable.

The perceptions of the viability of both communities post mining were analysed. The results indicate that for both communities and their hinterlands the perception was of the towns being unviable post mining unless other industry development was able to provide employment for residents. For Leigh Creek the results also highlighted that to remain viable the town needed to become an open normalised community. These findings reinforce the concept that for a mining-based community to endure post mining, it requires a diversified economic base as well the ability of mining to deliver broader benefits through social and infrastructure benefits that are derived via open communities.

The thesis concludes with recommendations to transition Leigh Creek utilising the Sustainable Livelihoods Framework to an open community now that mining has ceased. In respect to Roxby Downs for Government to aid the development of alternate industry or support the use of Roxby Downs as a host community for future mining operations.