

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.

A solid black rectangular box used to redact the signature of the author.

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).

I acknowledge the support of Boyd and the faith placed in me by the CRC-REP and Professor Fiona Haslam McKenzie for the initial offer of the opportunity to undertake this thesis. Without the scholarship provided by the CRC-REP I would have not been able to undertake the research. I further acknowledge the support of Dr Boyd Blackwell as my principal supervisor along with Professor Fiona Haslam McKenzie and Professor Neil Argent as my co-supervisors, particularly through the initial stages converting from a Master by research to the Doctorate candidature. My thanks go to Michael Smart for his support and proofreading at various times.

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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.

TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENTS	iii
PREFACE	iv
LIST OF FIGURES	x
LIST OF TABLES	xii
LIST OF ACRONYMS AND ABBREVIATIONS	xiv
ABSTRACT	xv
CHAPTER: 1 INTRODUCTION	1
1.1 Introduction	1
1.2 Project Setting	2
1.3 Thesis Aims and Objectives	2
1.4 Research Question and Significance.....	2
1.5 Originality	4
1.6 Methods and Methodology.....	4
1.7 Case Study Site Selection	8
1.8 Case Study Site Background	10
1.8.1 Leigh Creek Coalfield	10
1.8.2 Leigh Creek Township and Surrounding Area	12
1.8.3 Traditional Owners	15
1.8.4 Olympic Dam Mine	16
1.8.5 Roxby Downs Township and Surrounding Areas	16
1.8.6 Traditional Owners	18
1.9 Thesis Outline	19
1.10 Conclusion	21
CHAPTER 2: MINE LIFECYCLE PLANNING AND ENDURING VALUE FOR REMOTE COMMUNITIES	27
2.1 Introduction	28
2.2 Mine Lifecycle Planning	29
2.3 Enduring Community Value from Mining	31
2.4 Corporate Social Responsibility	32
2.5 Social Licence to Operate	33

2.6	Mine Lifecycle Planning: Economic and Social Impacts	33
2.7	Mine Closure, Care and Maintenance Operations	34
2.8	Diversification and Building a Sustainable Economic Base	34
2.9	Normalisation of Townships	35
2.10	Socio Economic Impacts of Mining	36
2.11	Discussion	38
	STATEMENT OF AUTHORS' CONTRIBUTION	39
	STATEMENT OF ORIGINALITY	40
	CHAPTER 3: MINE LIFE CYCLE PLANNING- CREATING	
	LASTING VALUE FOR COMMUNITIES	41
3.1	Introduction	42
3.2	Literature Review	43
3.2.1	Mine Lifecycle Planning	43
3.2.2	Lasting Value	43
3.2.3	Sustainable Livelihood Approach	44
3.3	Methodology	45
3.4	Discussion	45
3.4.1	Context-Sustainable Livelihood Framework Application	46
3.4.2	Context-Leigh Creek, Australia	46
3.4.3	Context-Risaralda, Colombia	48
3.4.4	Governance-Sustainable Livelihood Framework Application	49
3.4.5	Livelihood Assets- Sustainable Livelihood Framework Application	49
3.5	Conclusion	51
	STATEMENT OF AUTHORS' CONTRIBUTION	54
	STATEMENT OF ORIGINALITY	55
	CHAPTER 4: THE POTENTIAL VALUE OF LIFECYCLE	
	PLANNING FOR RESOURCE COMMUNITIES AND THE	
	INFLUENCE OF LABOUR FORCE MOBILITY.....	56
4.6.1	Introduction	57
4.6.2	Building Self-sufficiency, Combatting Labour Mobility: Mineral and	
	Energy Resource Development in South Australia's Remote North	59
4.6.2.1	Leigh Creek	59

4.6.2.2 Roxby Downs	66
4.6.3 Lifecycle Planning and Labour Force Mobility	72
4.6.4 Conclusion	76
STATEMENT OF AUTHORS' CONTRIBUTION	84
STATEMENT OF ORIGINALITY	85
CHAPTER 5: REMOTE MINING TOWNS ON THE RANGELANDS: DETERMING DEPENDENCY WITHIN THE HINTERLAND	86
5.1 Introduction	87
5.2 Background to the Case Studies	88
5.2.1 Leigh Creek	88
5.2.2 Roxby Downs	89
5.3 Methodology	90
5.3.1 Defining the Town and Hinterlands	90
5.3.2 Distribution and Promotion	90
5.3.3 The Survey	90
5.3.4 Use of Aboriginal Community Researchers.....	91
5.3.5 Response	91
5.3.6 Secondary Data	91
5.3.7 Data Analyses	92
5.4 Results	93
5.4.1 Utilisation of Services	93
5.5 Discussion	97
5.6 Conclusion	98
STATEMENT OF AUTHORS' CONTRIBUTION	101
STATEMENT OF ORIGINALITY	102
CHAPTER 6: PERCEPTIONS OF THE BUILT AND SOCIAL INFRASTRUCTURE BENEFITS AND COSTS OF REMOTE MINING COMMUNITIES	103
6.1 Introduction	104
6.2 Infrastructure and Social Changes in Remote Australian Locations.....	105

6.3	Methodology	107
6.3.1	Leigh Creek	107
6.3.2	Roxby Downs	108
6.3.3	The Survey	109
6.3.4	The Interview	110
6.4	Results	111
6.4.1	Leigh Creek Job Opportunities and Infrastructure	111
6.4.2	Leigh Creek Social Aspects	116
6.4.3	Roxby Downs Job Opportunities and Infrastructure	119
6.4.4	Roxby Downs Social Aspects	124
6.5	Discussion and Conclusion	127
CHAPTER 7: VIABILITY OF REMOTE MINING COMMUNITIES: LESSONS FROM COMMUNITY PERCEPTIONS, LEIGH CREEK AND ROXBY DOWNS		138
7.1	Introduction	139
7.2	Structural change in remote/regional Australia and the potential for tourism as an alternate industry	140
7.3	Methodology	141
7.3.1	Leigh Creek	142
7.3.2	Roxby Downs	142
7.3.3	Survey and Data Analysis	143
7.3.4	The Interview	145
7.3.5	Data Analysis	145
7.4	Results	146
7.4.1	Leigh Creek Viability	146
7.4.2	Roxby Downs Viability	149
7.4.3	What is Required to Ensure Town Remains Viable: Leigh Creek Respondents' View	152
7.4.4	What is Required to Ensure Town Remains Viable: Roxby Downs Respondents' View	154
7.5	Discussion and conclusion	157
CHAPTER 8: CONCLUSION		165

8.1	Introduction	165
8.2	Aims and Objectives	165
8.2.1	Degree of Dependence	165
8.2.2	Social and Infrastructure	166
8.2.3	Viability	167
8.2.4	Planning	169
8.3	Lifecycle Planning and Enduring Value	172
8.4	Diversification and Normalisation	175
8.5	Socioeconomic Impacts	177
8.6	Differences and Similarities between Leigh Creek and Roxby Downs	178
8.7	Limitations and Further Research	179
8.8	Recommendations	181
8.9	Concluding Comments	182
 APPENDICES.		
	Appendix 1 Distributed Paper Version of the Survey	187
	Appendix 2 Leigh Creek Interview Questionnaire	213
	Appendix 3 Roxby Downs Interview Questionnaire	214

LIST OF FIGURES

Figure 1.1:	Current and historic mining and exploration leases	9
Figure 2.1:	Four stages of the mine lifecycle	23
Figure 2.2:	Temporal nature of the mine lifecycle	24
Figure 3.1:	Sustainable livelihood framework	39
Figure 4.6.1:	Map of South Australia highlighting the location of Leigh Creek and Roxby Downs	54
Figure 4.6.2:	Leigh Creek Population	56
Figure 4.6.3:	Leigh Creek Employment by occupation by Usual Place Residence and Place of Enumeration for 2006 and 2011 Census	58
Figure 4.6.4:	Roxby Downs Employment by industry by Usual Place Residence and Place of Enumeration for 2006 and 2011 Census	62
Figure 4.6.5:	The Mine Lifecycle	67
Figure 5.1:	Communities within a 140-km radius of centres	82
Figure 5.2:	Percentage of respondents by location accessing Leigh Creek for services	85
Figure 5.3:	Percentage of respondents by location accessing Roxby Downs for services	86
Figure 5.4:	Services accessed out of Leigh Creek by location of service	89
Figure 5.5:	Services accessed out of Roxby Downs by location of service	89
Figure 5.6:	Leigh Creek respondents by Indigenous and employment status	90
Figure 5.7:	Roxby Downs respondents by Indigenous and employment status	90
Figure 5.8:	Leigh Creek employment by occupation by Usual Place of Residence and Place of Enumeration for 200 and 2011 Census	91
Figure 6.1:	Communities within 140km radius of centres	100

Figure 6.2:	Mean scores of perceived infrastructure amenity of Leigh Creek by Hinterland and Leigh Creek residents	103
Figure 6.3:	Mean scores of perceived infrastructure amenity of Leigh Creek by Indigenous status	105
Figure 6.4:	Mean scores of perceived infrastructure amenity of Leigh Creek by Employment status	105
Figure 6.5:	Leigh Creek perception of social amenity by area of residence, Aboriginal and Torres Strait Islander and employment status	109
Figure 6.6:	Mean scores of perceived infrastructure amenity of Roxby Downs by Hinterland and Roxby Downs residents	112
Figure 6.7:	Mean scores of perceived infrastructure amenity of Roxby Downs by Indigenous status	113
Figure 6.8:	Mean scores of perceived infrastructure amenity of Roxby Downs by Employment status	114
Figure 6.9:	Mean scores Roxby Downs perception of social amenity by area of residence, Aboriginal and Torres Strait Islander and employment status	117
Figure 7.1:	Communities within 140kms radius of centres	130
Figure 7.2:	Perceptions of the future by Leigh Creek by Hinterland and Leigh Creek residents and Indigenous Status	135
Figure 7.2a:	Leigh Creek mean score by employment category	136
Figure 7.3:	Perceptions of future by Roxby Downs Hinterland and Roxby Downs residents and Indigenous Status	137
Figure 7.3a:	Roxby Downs mean score by employment category	137

LIST OF TABLES

Table 3.1:	Leigh Creek survey responses to the question “in your opinion what would be required to ensure that Leigh Creek was to remain a viable community into the future?”	43
Table 4.6.1:	In-, Out- and Net Migration Rates; Roxby Downs, 1996-2001 – 2006-2011	61
Table 5.1:	Collection of survey	84
Table 5.2:	Respondents by location and town accessed for services ...	84
Table 5.3:	Chi-squared tested variables	85
Table 5.4:	Access to Leigh Creek services by Leigh Creek and hinterland residents	87
Table 5.5:	Access to Leigh Creek service by Indigenous status	87
Table 5.6:	Access to Leigh Creek services by Indigenous status of the hinterland residents	87
Table 5.7:	Number of Leigh Creek case study respondents by Indigenous status	87
Table 5.8:	Access to Roxby Downs services by Roxby Downs and hinterland residents	88
Table 5.9:	Access to Roxby Downs services by Indigenous status	88
Table 5.10	Number of Roxby Downs case study respondents by Indigenous status	88
Table 6.1:	Respondents to questions on perceived infrastructure amenity by location and Aboriginal and Torres Strait Islander status	101
Table 6.2:	Statements and test variables	102
Table 6.3:	Interviews conducted	103
Table 6.4:	Leigh Creek ATSI status by Employment status	106
Table 7.2:	Viability question respondents by location and Indigenous status	131
Table 7.3:	Statement and test variables	132
Table 7.4:	Interviews conducted	133

Table 7.5:	Responses to, “In your opinion what would be required to ensure that Leigh Creek was to remain a viable community into the future?”	141
Table 7.6:	Responses to, “In your opinion what would be required to ensure that Roxby Downs was to remain a viable community into the future?”	144

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.