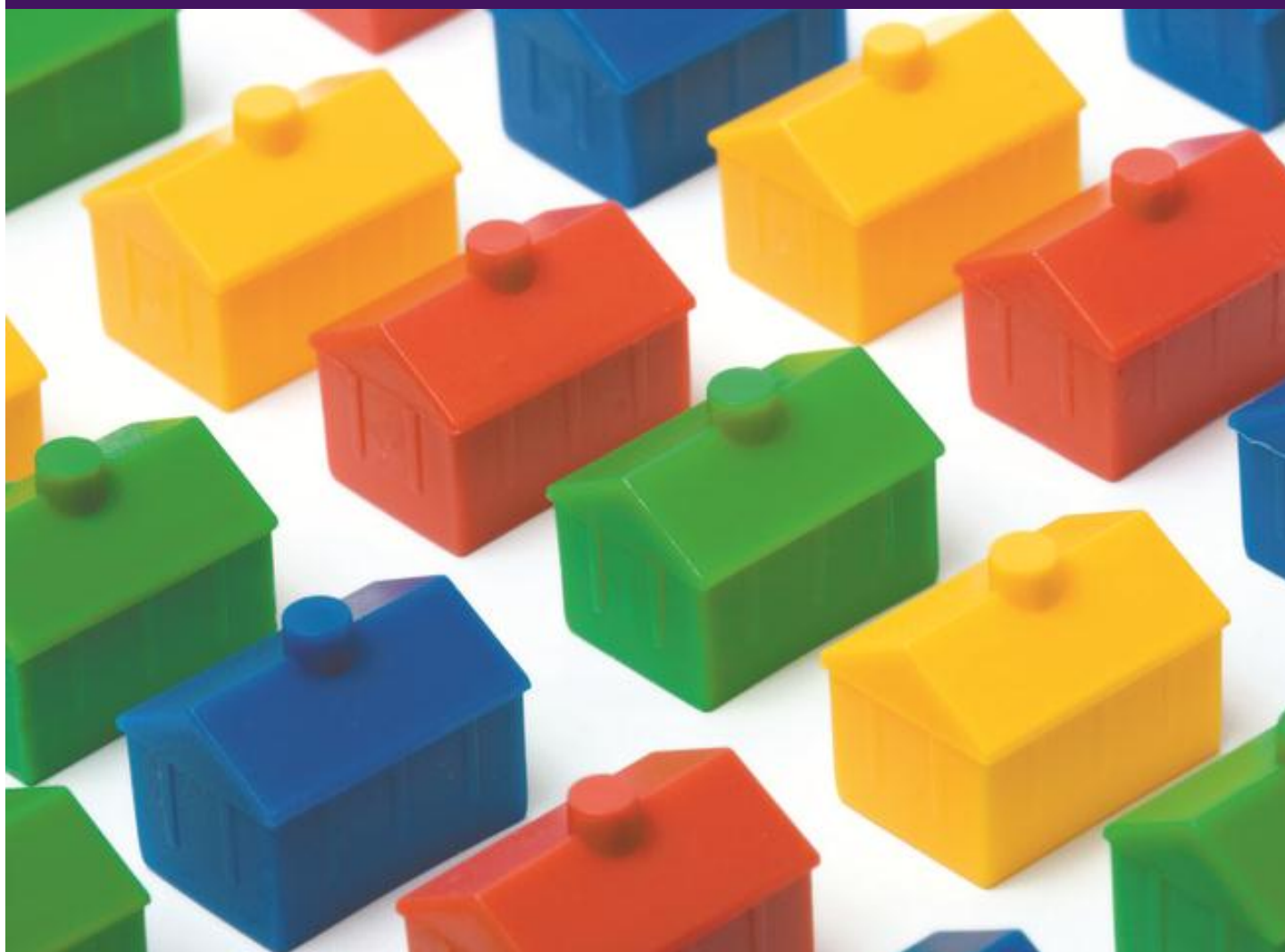


Supplementary Social Assessment

VW07107 | June 2013



Supplementary Social Assessment

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Executive summary

Sinclair Knight Merz has been engaged by Coffey Environments to prepare a supplementary report to the social impact assessment (SIA) undertaken for the Arrow Energy Pty Ltd (Arrow) Surat Gas Project Environmental Impact Statement (EIS) in 2011 (URS, 2011). This report was commissioned in response to updates to the project description since the EIS was finalised and to respond to issues raised in submissions on the EIS. This report validates impacts identified in the SIA and identifies any potential changes to impacts on local and regional communities due to:

- Updates to the project description presented in the EIS, including those relating to the project footprint, a rise in peak construction workforce and workforce accommodation requirements.
- Availability of updated socio-economic information from the 2011 Australian Bureau of Statistics Census of Population and Housing, as well as other sources including the Queensland Government Office of Economic and Statistical Research (OESR), councils and the Real Estate Institute of Queensland, that was not available for the original baseline assessment.

Key changes to the social baseline

A review of key socio-economic indicators reveals that there have been a number of key changes in the social baseline of relevance to the project, including:

- Rates of population growth have been lower than estimated in the SIA which slightly reduces the amount of additional population growth the region can sustain organically.
- There is greater potential for the project, with appropriate accommodation planning, to increase the sustainability of communities who have experienced population loss not captured in the previous population estimates.
- There is a larger proportion of the population in the study area who identified as Indigenous suggesting there could be a larger number of Indigenous people able to benefit from employment and business opportunities presented by the project.
- The study area has been subject to recent strong growth in housing costs, particularly in Chinchilla and Miles however research undertaken by the Western Downs Regional Council (KPMG 2012) has concluded that pressure on the local housing market in towns such as Chinchilla and Miles will reduce as supply of land for development grows to meet demand by 2016.

Validation of impacts

The updates to the project description and social baseline have the potential to change a limited number of the impacts and opportunities identified in the SIA (URS, 2011). Positive impacts that will increase in likelihood include increased local employment opportunities and increased local expenditure on goods and services by incoming workers and residents. The project now also has the potential to impact negatively on sustainable population growth if it triggers population growth that exceeds organic growth in select areas.

The Social Impact Management Plan update (SIMP update) contained in the Supplementary Report to the EIS (SREIS), Attachment 3, addresses these impacts and reflects progress Arrow has made in relation to their social performance strategies and processes since the SIA (URS, 2011) was finalised. The original, updated and new commitments contained in the SIMP update should be sufficient to manage the expected population increases in excess of organic growth. As such no further management measures are proposed in this assessment.



Glossary

Abbreviation	Description
ABS	Australian Bureau of Statistics
Arrow	Arrow Energy
C	Construction
CSG	Coal seam gas
DIDO	Drive in/drive out
DoC	Department of Communities
EIS	Environmental Impact Statement
FIFO	Fly in/fly out
Km	Kilometres
Km ²	Square kilometres
LNG	Liquefied natural gas
O	Operations
OESR	Office of Economic and Statistical Research, Queensland Government
PC	Pre-Construction
SD	Statistical Division
SIMP	Social Impact Management Plan
SREIS	Supplementary Report to the EIS
TWAF	Temporary worker accommodation facility
TAFE	Technical and Further Education
UCL	Urban Centre / Locality
URS	URS Australia Pty Ltd
WWW	World Wide Web



1. Introduction

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- Updates to the project description presented in the SIA (URS, 2011), including those relating to the project footprint, a rise in peak construction workforce and workforce accommodation requirements.
- Availability of updated socio-economic information from the 2011 Australian Bureau of Statistics Census of Population and Housing, as well as other sources including the Queensland Government Office of Economic and Statistical Research (OESR), councils and the Real Estate Institute of Queensland, that was not available for the original baseline assessment.

2. Project description updates

Key updates to the project description considered as requiring validation as a part of this supplementary report, relate to a reduction in the size of the project footprint, changes in location and quantity of project infrastructure and an increase to the peak construction workforce. Further details on these updates are provided below.

Since preparation of the Surat Gas Project EIS, further knowledge of the gas reserves has been gained resulting in further refinement of the field development plan. The main updates to the project description, presented in the EIS, which have the potential to affect the potential social impacts assessed, include changes to the size of the project development area, changes to the sequencing of development and a change in workforce numbers. Details of these changes to the project description are provided below.

Due to the relinquishment of parcels of land within Arrow's exploration tenements, there has been a reduction in the overall size of the project development area from 8,600 km² to 6,100 km². The majority of these relinquishments were made in the Goondiwindi development region. With a smaller project development area, there has been a reduction in the number of production wells anticipated to be drilled reducing from 7,500 to approximately 6,500.

Advancement in field development planning since preparation of the EIS, has also seen the overall project development area separated into eleven drainage areas, identified simply by sequential numbering, that correspond with the gas reserves that will be fed into each central gas processing facility (CGPF), as opposed to the five development regions that were presented in the original project description.

It is currently expected that eight of these drainage areas will be initially developed for the Surat Gas Project with each drainage basin incorporating wells, a water gathering network, a gas gathering network and a CGPF. A further three drainage areas may be developed with favourable reservoir outcomes and future market conditions.

Two of the eight drainage areas will include water treatment facilities located adjacent to a CGPF (as opposed to the six water treatment facilities reported in the EIS). The EIS referred to this arrangement (of a gas processing facility and a water treatment facility) as an integrated processing facility. This term will no longer be used and the facilities will be referred to by their function i.e., CGPF and water treatment facility. The number of potential field compression facilities proposed in the EIS (i.e., six) has not changed.

Arrow has identified four sites to locate CGPFs. A fifth site has been identified by Arrow to accommodate workers. The location and number of temporary workers accommodation facilities (TWAFs) has been revised from five to approximately six, each located in proximity to a central gas processing facility. The exact locations of the TWAFs have not been determined with the final location to be determined through a constraints analysis.

Table 2-1 provides assumed locations and bed requirements for the TWAFs.

Table 2-1 Estimated TWAF sizes and locations

Construction Camp	Number of Beds Required	
	Peak	Long Term
A – Between Wandoan & Miles	575	300
B – Near Miles	800	300
D – Near Kogan	575	300
E – Near Daandine	700	200
F – Near Cecil Plains	1050	500
G – Between Cecil Plains & Millmerran	450	200

*Refer to SREIS Chapter 3, Project Description

Changes to the development sequence and timing have resulted in an increase to the peak construction workforce and a change in the year the peak occurs to that presented in the EIS. **Table 2-2** shows that the revised project construction workforce is projected to peak at approximately 2,300 workers in 2017, which is 1,660 more employees than presented in the EIS. There has been a decrease in the peak operations workforce from approximately 460 described in the EIS, to around 400. The decommissioning workforce remains as was presented in the EIS.

Table 2-2 Estimated construction man-power

Year	Average Daily Man-Power	Peak Daily Man-Power	Year	Average Daily Man-Power	Peak Daily Man-Power
2015	770	1,100	2026	500	600
2016	1,300	1,200	2027	700	700
2017	1,700	2,300	2028	600	700
2018	900	1,100	2029	700	900
2019	1,200	1,400	2030	300	800
2020	900	1,400	2031	300	300
2021	600	800	2032	300	300
2022	700	800	2033	300	300
2023	700	800	2034	300	300
2024	700	1,000	2035	300	300
2025	700	800	–	–	–

Source: Coffey Environments

Further information regarding the updated workforce profile is presented in SREIS Chapter 3, Project Description.

3. Methodology

The assessment involves an update and analysis of the changes to key socio-economic indicators in the study area since the EIS was finalised and an assessment of updates to the project description.

3.1 Changes to key socio-economic indicators

The original SIA (URS, 2011) used the most up to date socio-economic information available to inform the assessment of the project. This included the 2006 census, information from the OESR and other sources. Since the original assessment, data from the 2011 census has become available as well as other data sets that capture recent socio-economic changes in the study area.

This assessment examines changes to key socio-economic indicators within the study area to determine whether they are likely to result in changes to the impacts identified in the SIA (URS, 2011) or new impacts not previously identified. The key socio-economic indicators chosen for update were based on their ability to trigger or modify significant impacts or in response to issues raised in submissions on the EIS. These include indicators on population, age, gender, Indigenous people and housing.

This assessment also examines the social policy context and provides details of new strategies and policies relevant to the social environment.

Geographic boundaries used for the census have changed between the 2006 and 2011 census. This has affected the comparability of some of the data used across some statistical local areas (SLA) and statistical districts (SD). Where this has occurred, other more comparable recent data is used.

3.2 The assessment of updates to the project description

The assessment of updates to the project description on the social impacts and opportunities identified in the EIS considers socio-economic changes in the study area since the original SIA (URS, 2011) was finalised. Where impacts are consistent with those already identified, the likely scale, nature, geographic extent, duration, severity and probability are considered to determine possible changes in the evaluation of significance (**Table 3-1**). Where changes in the significance of impacts are identified, mitigation measures proposed in the Social Impact Management Plan (SIMP) (URS, 2011b) are also reviewed.

Table 3-1 : Significance of Impacts Guideline Table

Probability	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost certain	Low	Medium	High	Very High	Very High
Likely	Low	Medium	High	Very High	Very High
Possible	Low	Low	Medium	High	Very High
Unlikely	Low	Low	Medium	High	Very High
Rare	Low	Low	Medium	High	Very High

Source: URS, 2011



4. Social baseline

This section contains a review of relevant new social legislation and policy as well as an assessment of key population and socio-economic indicators based on 2011 Census information and other more recent data sources not available when the SIA (URS, 2011) was finalised.

4.1 Legislation and policy update

A small number of plans and policies relevant to the assessment have been released or updated since the SIA (URS, 2011) was finalised. These are briefly outlined below.

4.1.1 Toowoomba Regional Council Community Plan

The Toowoomba Regional Council Community Plan captures the community vision, goals and priorities of the community to the year 2021. Of relevance to the project the plan notes a desire for:

- Social infrastructure and services to be planned, coordinated and delivered in a manner that supports regional settlement.
- Equitable access to affordable, suitable and good quality housing.
- Access to a diverse range of employment opportunities with a skills base that can meet the needs of businesses and industries.
- Rural communities that are strong and viable with sustainable economies.

4.1.2 Goondiwindi Regional Council Community Plan 2012-2022

The Goondiwindi Regional Council Community Plan 2012-2022 sets out the community's needs, aspirations and priorities for the next ten years. Its overarching vision is for "a vibrant, well planned and welcoming community with opportunity and lifestyle" with 12 key strategic outcomes and 46 supporting actions to be achieved over the next ten years.

Of relevance to this project is the commitment to enhance the economic viability of communities in the region through "supporting the growth of new and existing industry and business activities that enhance local lifestyle and provide long term employment opportunities.

4.1.3 Western Downs Regional Council Housing Affordability Strategy

The Affordable Housing Strategy (KPMG, 2012) aims to address the impacts of increasing demand on the supply and affordability of housing and rental accommodation.

It notes that the study area is currently experiencing a housing shortage due to increased demand associated with resource developments in houses for rent and purchase. The strategy notes the shortage is expected to ease after the year 2016, with sufficient dwellings available in Chinchilla and Miles to meet increased demand. However, in Wandoan there is an insufficient amount of land available to support projected population growth. There is also the potential for land supply to increase in Dalby should Western Downs Regional Council (RC) intervene in relation to lot sizes. Within the strategy, the Western Downs RC has committed to actions to encourage the release and appropriate use of available land.

4.1.4 Implications of the policy changes

Arrow has committed to a number of initiatives to ensure that the project remains compatible with these policies. As per the Toowoomba and Goondiwindi Regional Council Community Plans, the project will facilitate the continued growth of the coal seam gas industry in the region which will have flow on positive impacts on business and employment opportunities in the medium to long term. In line with the Toowoomba Regional Council Community Plan and the Western Downs Regional Council Housing Affordability Strategy, the SIMP

update also contains a commitment to provide information to local and state government agencies to enable them to plan for regional settlement. The project will also avoid adverse impacts on community access to accommodation through implementing accommodation strategies covering the construction and operation stages of the project and measures such as supporting government reviews on housing availability and affordability, and impacts on low income groups.

4.2 Update of key socio-economic indicators

4.2.1 Population of the study area

Recent estimates of the residential population within the study area indicate that the Goondiwindi and Toowoomba RCs had a lower total residential population than estimated within the SIA (URS, 2011).

At the time of the original SIA (URS, 2011), the most current population count for the study area was from the 2006 census, so the estimated population for 2010 was used (**Table 4-1**). More recent estimates from 2011 show Goondiwindi RC had an estimated residential population of 10,840 people. This is approximately, 573 fewer people than the figure presented in the SIA (URS, 2011) for 2010. Toowoomba RC had an estimated residential population of 154,931 people in 2011, approximately 7,126 fewer people than estimated for 2010 in the SIA (URS, 2011). The estimated residential population for Western Downs RC remained relatively stable, with an estimated population of 32,408 people in 2011, compared to 32,071 people in 2010.

The region is projected to experience strong population growth into the future, with a total of 247,446 people projected to live in Goondiwindi, Toowoomba and Western Downs RCs by 2021, a 24% increase (49,267 people) from 2011 (**Table 4-1**).

Table 4-1 : Regional council population and projections 2006, 2010, 2011, 2021 and 2031

Area	Original SIA		2011 estimated population ¹	Projected resident population	
	2006	2010 estimated population		2021 ²	2031
	Goondiwindi RC	10,741	11,413	10,840	12,352
Toowoomba RC	151,297	162,057	154,931	198,591	244,340
Western Downs RC	31,355	32,071	32,408	36,503	40,397
Darling Downs Statistical Division (SD)	243,804	241,537	251,104	289,270	345,280
Queensland	4,090,908	4,513,850	4,474,098	5,588,618	6,592,900

Source: URS, 2011 and OESR, 2011b

The populations of main centres and localities in the study area are presented in **Table 4-2**.

The SIA (URS, 2011) noted that urban centres and localities in the study area, with the exception of Cecil Plains, experienced population growth in the ten years to 2010. Chinchilla had the highest population growth at 31.7%. Cecil Plains experienced a decline in population of -14.2% over the 10 years to 2010. Data from the 2011 Census indicates greater variation in population growth with Chinchilla experiencing higher population growth (at 41.6%) over the ten years to 2011 (**Table 4-2**), while Wandoan, Cecil Plains and Miles experienced negative population growth.

This suggests that communities such as Miles, Wandoan and Cecil Plains would likely benefit from a population influx that off-set these losses while other towns such as Chinchilla, may already be experiencing constraints associated with their rapid population growth.

¹ Preliminary rebased – the assumptions behind this estimate have been updated using the 2011 census data

² 2011 edition *Queensland Government population projections (medium series)*

Table 4-2 : Population change of main centres and localities in the study area 2001-2011

Urban centre or locality	Total population			% change 2001-2011
	Original SIA		2011 Census	
	2001	2006		
Cecil Plains	281	236	202	-28.1
Chinchilla	3,376	3,681	4,780	41.6
Dalby	9,731	9,778	10,861	11.6
Goondiwindi	5,491	5,629	5,509	0.3
Miles	1,196	1,164	1,170	-2.2
Millmerran	1,250	1,223	1,329	6.3
Toowoomba	89,338	95,265	96,567	8.1
Wandoan	396	386	330	-16.7

Source: ABS 2012a, 2012b & 2012c

4.2.2 Age and gender

Data on the median age of the study area population suggests that while it aged between 2001 and 2006, between 2006 and 2011 the population of several localities experienced a reduction or stabilisation in their median age.

This was highest in Chinchilla which has experienced strong population growth and had a five year drop in the median age over this period. While the reduction in the median age was more modest in other communities, in both Cecil Plains and Wandoan, towns that have experienced population loss, the median age has increased by two years to 41 and 42 respectively (**Table 4-3**)

Table 4-3 : Median age of persons in study area 2001 to 2011

Locality	Original SIA		2011 Census Median Age of Persons
	2001 Median Age of Persons	2006 Median Age of Persons	
Cecil Plains	32	39	41
Chinchilla	37	39	34
Dalby	33	34	34
Goondiwindi	33	34	35
Miles	38	41	38
Millmerran	37	39	39
Toowoomba	33	35	36
Wandoan	35	40	42
Darling Downs SD	34	37	38
Queensland	35	36	36

Source: ABS 2012a, 2012b & 2012c

The reduction and stabilisation in median ages suggests that localities in the study area that are experiencing population growth, with the exception of Chinchilla, are likely developing more demographically sustainable communities. However, the gender balance in the study area is beginning to shift. With the exception of Miles, and Goondiwindi the proportion of males increased between 2006 and 2011 (**Table 4-4**).

Table 4-4 : Gender of persons in study area 2006 and 2011

Locality	Original SIA		2011 Census	
	2006 Census		Male%	Female%
	Male %	Female%	Male%	Female%
Cecil Plains	51.3	48.7	53.5	46.5
Chinchilla	50.4	49.6	51.4	48.6
Dalby	49.8	50.2	50	50
Goondiwindi	49.5	50.5	48.3	51.7
Miles	46.6	53.4	45.7	54.3
Millmerran	48.5	51.5	49.1	50.9
Toowoomba	47.7	52.3	47.7	52.3
Wandoan	48.2	51.8	51.8	48.2
Darling Downs SD	49.2	50.8	49.4	50.6
Queensland	49.6	50.4	49.6	50.4

Source: ABS 2012b & 2012c

This underscores the importance of avoiding locating predominately male Fly in/ Fly out (FIFO) and Drive in / Drive out (DIDO) workforces in urban communities in the study area during construction.

4.2.3 Indigenous population characteristics

At the 2011 Census, the Western Downs, Toowoomba and Goondiwindi RCs had a total of 7,176 people identifying as Indigenous (**Table 4-5**) compared to 5,681 people at the 2006 Census. This suggests that there could be a larger number of Indigenous people who are able to benefit from the employment and business opportunities presented by the project.

Compared to Queensland as a whole, the Goondiwindi and Western Downs RCs and Darling Downs SD had higher proportions of people identifying as Indigenous at the 2011 Census.

Table 4-5 : Indigenous population of the study area 2006 and 2011

LGA	Original SIA	2011 Census	
	2006 Census	Proportion of total population (%)	Number
	Proportion of total population (%)	Proportion of total population (%)	Number
Goondiwindi RC	3.7	4.9	517
Toowoomba RC	2.9	3.5	5,242
Western Downs RC	4.2	4.5	1,417
Darling Downs SD	3.1	4.7	5,752
Queensland	3.3	3.6	155,825

Source: ABS 2012c

4.2.4 Housing trends

Information on the housing market in the study area for December 2012 is presented in **Table 4-6**. It shows over the 12 months to December 2012, the Western Downs and Goondiwindi RCs experienced relatively strong growth in house prices, at 10.9%, and 13.3% respectively, while Toowoomba RC experienced marginal growth in house prices (1.8%). At a township level, Chinchilla experienced the highest growth in house prices, at 14.0%

over the 12 months. Please note the information on housing costs presented in **Table 4-6** and **Table 4-7** comes from a different source to the SIA (URS, 2011) which used the Queensland Housing Market Report. This supplementary social report uses data from the Real Estate Institute of Queensland (REIQ) as it provides a breakdown of housing costs for select towns in the study area, a level of detail not available in the Queensland Housing Market Report.

Table 4-6 : Median house prices in the study area December 2012

Regional Council	Median house price	% Change (2011-2012)
Toowoomba RC	\$295,000	1.8%
Western Downs RC	\$305,000	10.9%
Chinchilla	\$342,000	14.0%
Dalby	\$265,000	10.4%
Miles	\$330,000	n/a
Goondiwindi RC	\$238,000	13.3%

Source: REIQ (2013)

Table 4-7 shows rental prices within the study area increased between 2011 and 2012, which reflects the recent development activity occurring in the study area. Miles experienced the largest increase, with median rents rising 83.3% over the 12 months to December 2012. Over the same period, Chinchilla also experienced an increase in rental prices of 17.2%. This is likely the result of increased demand placed on accommodation by workers and contractors supporting the coal seam gas and mining industries in the planning and development of major projects in the Surat Basin. It is possible that this demand has moderated more recently as a result of the postponement of some projects in the region.

Table 4-7 : Median weekly rental prices (3 bedroom house) in the study area, December 2012

	Dec Quarter 2011	Dec Quarter 2012	% Change (2011-2012)
Toowoomba RC	275	280	1.8%
Western Downs RC	270	300	11.1%
• Miles	300	550	83.3%
• Dalby	280	300	7.1%
• Chinchilla	320	375	17.2%
Goondiwindi RC	260	280	7.7%
Queensland	340	350	2.9%

Source: REIQ (2013)

As noted in Section 4.1.3, Western Downs RC believes that the pressure on the local housing market in towns such as Chinchilla and Miles will reduce with supply of land for development anticipated to meet demand after 2016. If this occurs it is likely that growth in accommodation costs will slow or reduce.

4.2.5 Non-resident population

The SIA (URS, 2011) used data from June 2008 for the non-resident worker³ population of the study area. As of June 2008, Western Downs RC had 1,208 non-resident workers (**Table 4-8**).

More recent information indicates the number of non-resident workers in the study area increased to June 2012, where there were 4,175 non-resident workers located in the Western Downs RC (**Table 4-8**). Approximately half

³ Non-resident workers are people who FIFO/DIDO to work and live in the area temporarily while rostered on, and who have their usual place of residence elsewhere.

of the non-resident workers within the Western Downs RC resided in rural areas. This is likely to reflect the presence of TWAF⁴s established to support the development of the gas industry. The Toowoomba RC had a smaller non-resident population, with 190 non-resident workers in 2012. This represented approximately 3.2% of the total non-resident population in the Surat Basin.

Table 4-8 : Non-resident population within the study area, June 2008, 2011 and 2012

Locality	Original SIA 2008	2011			2012		
		Estimated Resident Population (ERP)	Non-resident workers		ERP	Non-resident workers	
			No.	%		No.	%
Western Downs RC	1,208	32,355	2,005	6.2	32,905	4,175	12.7
• Chinchilla UCL ⁵	Not available	4,900	515	10.5	5,180	970	18.7
• Dalby UCL	Not available	11,130	450	4.0	11,270	700	6.2
• Miles UCL	Not available	1,195	105	8.8	1,230	195	15.9
• Wandoan UCL	Not available	340	75	22.1	350	170	48.6
• Other towns ⁶	Not available	1,145	10	0.9	1,055	20	1.9
• Rural areas ⁷	Not available	12,885	830	6.4	12,920	2,080	16.1
Toowoomba RC	Not available	154,930	105	0.1	156,640	190	0.1
• Oakey UCL	Not available	4,385	50	1.1	4,505	65	1.4
• Other towns	Not available	29,025	15	0.1	29,550	30	0.1
• Rural areas	Not available	22,215	0		22,340	0	
Surat Basin total	Not available	200,750	3,265	1.6	203,140	6,445	3.2

Source: OESR, 2012

Table 4-8 shows that as of June 2012, 78% of workers (5,025 workers) resided in TWAFs, with approximately 14% in hotels/ motels, and the remainder in caravan parks and other accommodation. This suggests that the impact on the housing market of non-resident workers on shift in the region is being managed in part through the use of temporary or company facilitated accommodation. In total there were 66 TWAFs in the Surat Basin, of which five were located within five kilometres of Dalby and Chinchilla.

Table 4-9 : Non-resident workers by accommodation type, Surat Basin June 2012

LGA	TWAF	Hotels/motels	Caravan parks/other	Total non-resident workers on shift
Maranoa RC	1,595	335	145	2,075
Western Downs RC	3,430	400	340	4,170
Toowoomba RC	0	155	40	190
Surat Basin Total	5,025	890	525	6,440

Source: OESR, 2012

⁴ The OESR uses the term workers accommodation village (WAV) instead of TWAF.

⁵ UCL – Urban Centre or Locality

⁶ Localities with fewer than 20 non-resident workers are aggregated in 'other towns'

⁷ Rural areas include populations outside localities, including non-resident workers in Workforce Accommodation Villages located more than 5km from town

4.2.6 Summary

Key points from the social baseline update for this assessment are:

- Recent population growth continues to be concentrated within the Western Downs RC, however is occurring at a lower rate than previously indicated in the SIA (URS, 2011).
- The region is projected to experience continued population growth, with 49,267 people projected to live in the Goondiwindi, Toowoomba and Western Downs RCs by 2021, a 24% increase from 2011.
- Communities such as Miles, Wandoan and Cecil Plains may benefit from a population influx that off-set these losses while other towns such as Chinchilla, may already be experiencing constraints associated with their rapid population growth.
- In 2011, the Western Downs, Toowoomba and Goondiwindi RCs had a total of 7,176 people identifying as Indigenous, 1,495 more than the 2006 Census. This suggests that there could be a large number of Indigenous people who are able to benefit from the employment and business opportunities presented by the project.
- Western Downs and Goondiwindi RCs experienced relatively strong growth in house prices, at 10.9%, and 13.3% respectively, while Toowoomba RC experienced marginal growth in house prices since 2011. At a township level, Chinchilla experienced the highest growth in house prices, at 14.0% over the 12 months.
- Rental prices within the study area have increased between 2011 and 2012, which reflects the recent development activity occurring in the study area. Miles experienced the largest increase, with median rents rising 83.3% over the 12 months to December 2012. Over the same period, Chinchilla also experienced an increase in rental prices of 17.2%.
- The number of non-resident workers in Western Downs increased from 1,208 in 2008 to 4,175 as of June 2012. Most of the non-resident workers on shift in the region are living in TWAF's which is reducing their impact on the local accommodation market.



5. Validation of impacts

This section details the key implications of the updated social baseline on the social impacts identified in the SIA and then assesses the updates to the project description against these socio-economic changes.

5.1 Implications of the changes in the social baseline

The key changes in the social baseline of relevance to the project relate to population growth, the increase in the number of people identifying as Indigenous and changes in the housing market.

Rates of population growth have been lower than estimated in the SIA (URS, 2011). This slightly reduces the amount of additional population growth the region can sustain organically.

There is also greater potential for the project, with appropriate accommodation planning, to increase the sustainability of communities who have experienced population loss (Wandoan, Cecil Plains and Miles) not captured in the population estimates included in the original SIA. This possible benefit is predicated on the ability of the project to avoid further contributing to large changes in the age of Chinchilla and Miles and gender of communities across the study area. In 2011, the larger proportion of the population in the study area who identified as Indigenous suggests that there could be a larger number of Indigenous people who are able to benefit from the employment and business opportunities presented by the project.

The study area has also been subject to recent strong growth in housing costs, particularly in Chinchilla and Miles. However, research undertaken by the Western Downs RC (KPMG 2012) has concluded that pressure on the local housing market in towns such as Chinchilla and Miles will reduce as supply of land for development is anticipated to meet demand after 2016. If this occurs it is likely that growth in accommodation costs will slow or reduce in time for the peak demand from the Surat Gas Project construction and operations workforce

5.2 Impacts associated with the project description updates

This section contains an assessment of the updates to the project description on relevant unmitigated social impacts identified in the SIA, in the context of the key changes in the socio-economic indicators discussed in Section 5.1. The ability of existing management measures within the SIMP to manage these impacts is considered in Section 7.

5.2.1 Changes in the project footprint

Impacts on land use and property are assessed in Section 6.4 of the SIA (URS, 2011). A reduction in the project footprint will reduce the extent of this impact as there will be a reduction in the number of properties potentially impacted by the project.

The SIA (URS, 2011) assessed increased landholder and community uncertainty as being of high significance, with the impact “likely” to occur and the consequence of the impact considered to be “moderate”. While reducing the project footprint has the potential to lower the number of landholders concerned about direct impacts on their properties during the planning phase, this impact is still “likely” to occur and likely to result in moderate impacts. As such, the significance of this issue for local communities is likely to remain high, although the geographic extent of the impact would be slightly reduced.

The SIA (URS, 2011) noted that the location of wells and gathering lines has the potential to disrupt or impede some agricultural activities, potentially impacting on farming livelihoods by lowering productivity and farming efficiency. This was considered to potentially result in a reduction/loss of farm income and disruption to farm operations. These impacts were identified as being of low significance in the SIA (URS, 2011), with the likelihood of impact expected to be “possible” and the consequence of “minor” impact.

The project description updates include a reduction in the number of wells, by 1,000 wells, fewer water treatment facilities and an additional TWAF. While disruptions to some agricultural activities are possible, this

would impact a smaller number of landholders and properties. As such, the updates to the project description are not expected to result in an impact of greater significance than that identified in the SIA (URS, 2011) (i.e. low).

5.2.2 Changes in the peak construction and operational project workforce

The SIA (URS, 2011) identified that the construction workforce was estimated to peak at 710 people in 2016 before reducing to between 220 and 400 personnel after 2021. As indicated in **Table 5-1**, the project description changes show a peak construction workforce of 2,300 people in 2016, before decreasing to 300 people by 2031.

The net result of this change to the peak construction workforce will be an increase of approximately 1,144 workers residing in TWAF's, 247 workers being recruited locally for construction and approximately 288 workers relocating to the study area with 403 family members (**Table 5-2**) based on the assumptions presented in Section 5.1.1 of the SIA (URS, 2011).

Table 5-1 : Peak construction workforce

Construction workforce	Peak workforce (EIS)	Peak workforce (revised)	Change
Main construction workforce	640	2,070	1,430
• Existing resident (existing accommodation in the area)	96	310	215
• New resident (seeking accommodation in the area)	32	104	73
• Non-resident (camp based)	512	1,656	1,144
Onsite Support Workforce	70	230	160
• Existing resident (existing accommodation in the area)	14	46	32
• New resident (seeking accommodation in the area)	56	184	128
Total	710	2,300	1,590

Table 5-2 : Peak resident population change associated with the construction workforce

	Peak (EIS)	Peak (revised)	Change
Relocated workers	88	288	200
Worker's family members	123	403	279
Total resident population influx	211	690	479

Based on the updates to the project description, the project is estimated to require a peak operational workforce of 400 people, a reduction of 64 workers from the description used in the SIA (URS, 2011) (**Table 5-3**). Approximately 100 of the operational workers are already resident in the study area and captured in the data contained in the revised social baseline. A further 150 local workers will be recruited for the operational workforce and another 150 workers will relocate to the study area.

Table 5-3 : Peak operation workforce

	Peak (EIS)	Peak (revised)	Change
Existing resident (already employed and accommodated in the study area)	0	100	100
Existing resident (existing accommodation in the area)	232	150	-82
To relocate to the study area	232	150	-82
Total operational workforce	464	400	-64

The reduction in the operational workforce will result in a reduced number of family members accompanying operational workers entering the study area. Using the same estimates of 1.4 family members per relocated worker assumed in the SIA (URS, 2011) it is estimated that 360 workers and their families will become resident in the study area at the peak of operations in 2019, a reduction of -197 people from that presented in the SIA (URS, 2011).

Table 5-4 : Peak resident population change associated with the operation workforce

	Peak (EIS)	Peak (revised)	Change
Relocated workers	232	150	-82
Worker's family members	325	210	-115
Total resident population influx	557	360	-197

The following sections provide an overview of potential impacts of changes in the construction and operations workforce due to updates to the project description.

5.2.3 Population change

The impact of population change associated with the project is assessed in Section 6.2.1 of the SIA (URS, 2011). It identifies that the number of workers and their families/partners moving to the study area and surrounds for the project is small and in line with organic growth (+/- 5% of the average annual population change) for towns and the region generally.

As indicated in the SIA (URS, 2011), the additional growth that will accrue from the project will result in a number of impacts including:

- Off-set population decline in smaller rural communities (positive, medium significance)
- Generate a higher skilled resident workforce (positive, medium significance)
- Retention of younger population (positive, medium significance)
- Increase in resident population (positive, low significance)
- Increase in families associated with operational workforce(positive, low significance)
- Influx of young male dominated construction workforce (negative, low significance).

Updates to the project description will result in a peak increase in the residential population across the project development area of up to 690 construction workers and their families in 2017, an increase of 479 people from figures presented in the SIA (URS, 2011). This increase will be offset in part by a reduction of 197 operations workers and their families moving to the area under the updates to the project description.

This is likely to result in impacts consistent with those identified in the SIA (URS, 2011) and in line with the level of organic growth expected in the region at approximately 2% of the total projected population growth for the Goondiwindi, Toowoomba and Western Downs RCs by 2021 (49,267 people). However, should workers choose to relocate entirely to the Western Downs RC, as has been the trend with non-resident workers, the population increase from the project could exceed 5% of the council area's total projected population increase to the year 2021. This would exceed the organic growth for the region, resulting in a possible negative impact of moderate consequence and medium significance.

5.2.4 Employment, skills and business impacts

Employment skills and business impacts are identified in Section 6.3.1 of the SIA (URS, 2011). It considered increased local employment opportunities accruing from the project to be of high significance (positive impact), due to the project providing long-term employment security and a wider range of employment occupations for local workers. This was considered to benefit the existing workforce and provide an incentive and opportunity for younger local residents to remain in or return to the study area. Based on the changes to the project

description, a peak construction workforce of 357 local workers will be required, an increase of 247 workers from the SIA (URS, 2011). This would increase the number of positions available to local residents, increasing the likelihood of local employment being generated by the project.

The SIA (URS, 2011) also noted that local businesses may struggle to retain staff and have difficulties in hiring workers during construction. This was assessed as being of high significance (negative impact), given the likely “major” consequences and “possible” likelihood of this occurring. Based on the updates to the project description, while there will be an increase of 165 positions available locally on the project there is still a high degree of uncertainty as to the likelihood of this impact. As such it is expected that this would continue to have a “major” consequence and a “possible” likelihood resulting in the significance of this impact remaining at “high”. The SIMP update contains measures to address impacts on local businesses resulting from skills shortages and competition for workers which are discussed in Section 7.

The SIA (URS, 2011) also notes that the project has the potential to increase local expenditure on goods and services by incoming workers and residents, an impact identified as being of medium significance (positive impact). An increase in the construction workforce and families relocating to the study area will increase the likelihood of this impact occurring to “likely”. This would result in an increase in the significance of this impact to “high”.

5.2.5 Community values and lifestyle

Community values and lifestyle impacts are considered in Section 6.5 of the SIA (URS, 2011). It identified the potential for an influx of people into the community to disrupt community spirit and create a perception of ‘us and them’. It also identified potential community concerns that the project workforce could result in a loss of ‘rural friendliness’ when integrating construction workers into towns (as opposed to TWAFs), and a perception among some local residents that anti-social behaviour would result from a male dominated demographic during construction.

The likelihood of these concerns materialising is assessed as being of low significance in the SIA (URS, 2011). It recognised that while there will be a large cumulative influx of non-resident workers into the study area (predominantly during construction), there will generally be limited interaction between workers and the community as many workers will be operating from remote sites and staying at self-contained TWAFs. While the updates to the project description will result in an increase in the construction workforce, the significance of this impact is expected to be unchanged, with the majority of the construction workforce still to be located in TWAFs. Construction workers who relocate to the area will account for part of the organic projected increase in the resident population of the region and are more likely to have families, which is likely to strengthen their ability to integrate into the community and reduce the likelihood they will engage in anti-social behaviour.

5.2.6 Community infrastructure and services

Community infrastructure and services impacts are discussed in Section 6.6 of the SIA (URS, 2011). It notes that the project will result in an increase of up to 758 workers and their families residing in the study area by 2021, increasing demand on medical and health facilities and possibly:

- Heightened road safety risk
- Increased demand on emergency services
- Increased demand on community support services
- Increased demand on recreational facilities
- Increased demand on schools and childcare
- Increased demand on utilities
- The study area being unable to attract and retain service provider workers (e.g. police, teachers, doctors) due to increased living costs (especially housing).

Updates to the project description will result in a change in the scale and timing of both the construction and operation workforce peaks.

The projected number of workers located in TWAF's will increase to 1,656 non-resident workers, an increase of 1,144 workers. This component of the construction workforce is not expected to place a significant burden on community infrastructure or services as they will be located away from population centres and as detailed in the SIMP update, a range of facilities and services will be provided at the TWAFs.

As part of the peak construction workforce up to a further 690 construction workers and their families will relocate to the study area by 2017, an increase of 479 people in the peak construction workforce identified in the SIA (URS, 2011). A smaller peak of people associated with the operations workforce (360 workers and their families) will relocate to the study area in 2019. At this time, the construction workforce will have reduced by approximately 900 workers, reducing the aggregate increase in the resident population.

As such it is likely that while there will be an increase in the resident population associated with the construction workforce, the scale of this increase will be lessened by the reduction in the operational workforce and changes in the timing of peaks for both workforces, resulting in a more modest increase to that described in the SIA (URS, 2011).

This level of resident population increase is in line with the organic growth projected for the study area and so is not anticipated to alter the level of significance identified in the SIA (URS, 2011) for this impact.

5.2.7 Housing and accommodation

Housing and accommodation impacts are discussed in Section 6.7 of the SIA (URS, 2011), which estimated that up to 316 workers (construction and operation) would relocate to the study area and would require housing. Updates to the project description will result in an increase of 200 construction workers seeking accommodation in the study area and a reduction of 82 operational workers seeking accommodation. It is unlikely that this demand will overlap, however, in the case that it did overlap it could result in a peak net increase of 119 workers seeking accommodation in the study area between 2017 and 2019.

With the exception of Toowoomba RC, accommodation costs in the study area have experienced strong growth recently. An influx of this scale, if not planned appropriately could potentially put increased pressure on the local housing market and accommodation costs. However, the Western Downs Regional Council Housing Strategy (KPMG, 2012) notes that after 2016, when the construction workforce will peak, most towns, with the exception of Wandoan will have sufficient land available to meet housing demand. It is still possible that the housing market will be unable to effectively respond to the increased demand for residential land in time. As such the likelihood of increased house, land purchase and rental prices resulting in diminished levels of housing affordability is still considered "possible" and to be of "Major" consequence leaving the significance of this impact unchanged at "high".

5.2.8 Health, Safety and Environment

Impacts related to health safety and environment are assessed in Section 6.8 of the SIA (URS, 2011) which notes there is likely to be community concern related to the potential for increased levels of crime and anti-social behaviour amongst the project workforce. This concern, in tandem with the community anxiety on health, safety and environment effects of the project was identified as being of high significance (negative impact).

While the updates to the project description are expected to result in an increase in the construction workforce, the majority of these workers are expected to reside in TWAFs located away from population centres reducing the likelihood these workers can engage in anti-social behaviour in the community. The number of construction workers anticipated to reside in the community is expected to increase however this will be offset in part by a reduction in the number of the operational workers and their families relocating to the area. These workers are more likely to have families, which is likely to strengthen their ability to integrate into the community and reduce the likelihood they will engage in anti-social behaviour. As such, the significance of the impact is not expected to change, with the impact considered likely to occur and of moderate consequence.

5.3 Summary of impact changes

Table 5-5 provides a summary of new social impacts identified in this supplementary report and impacts assessed as having a revised significance ranking based on updates to the project description and updated socio-economic data.

Table 5-5 : Summary of changes to impacts

Impact or opportunity	Status	Phase ⁸	Pos/Neg	Likelihood	Consequence	Significance
Changes to Population and Demographic Profile						
Population increase in excess of organic growth	New impact	C	Negative	Possible	Moderate	Medium
Impacts on Employment, Skills and Business						
Increased local employment opportunities	Increased likelihood	C, O	Positive	Almost certain	Moderate	High
Increased local expenditure on goods and services by incoming workers and residents	Increased likelihood	C, O	Positive	Likely	Moderate	High
Impacts on Land Use and Property – The project description updates are unlikely to alter the level of significance for this category of impact.						
Impacts on Community Values and Lifestyles – The project description updates are unlikely to alter the level of significance for this category of impact.						
Impacts to Community Infrastructure and Services The project description updates are unlikely to alter the level of significance for this category of impact.						
Impacts on Housing and Accommodation Availability and Affordability The project description updates are unlikely to alter the level of significance for this category of impact.						
Impacts on Health, Safety and Environment The project description updates are unlikely to alter the level of significance for this category of impact.						

⁸ C = Construction, O = Operation

6. Cumulative impacts

As noted in the SIA (URS, 2011), cumulative social impacts are inherently difficult to identify or assess due to a lack of data on other projects in the region. However, other projects underway in the Surat Basin are already producing cumulative impacts which are partially captured in the updated housing and population data provided in Section 4.2 of this report.

A number of key considerations for the regional area regarding cumulative impacts are identified in the SIA (URS, 2011) (**Table 6-13**). Updates to the social baseline and the project description are not expected to result in changes to these. Arrow will continue to manage cumulative impacts when planning through consulting with state government, other proponents and stakeholders where appropriate as well as participating in consultative forums in the region.



7. Management measures

The updates to the project description and social baseline have the potential to change a limited number of the impacts and opportunities identified in the SIA (URS, 2011). Positive impacts that will increase in likelihood include increased local employment opportunities and increased local expenditure on goods and services by incoming workers and residents. However, the project now also has the potential to impact negatively on sustainable population growth if it triggers population growth that exceeds organic growth in select areas.

The SIMP update addresses these impacts and reflects progress Arrow has made in relation to their social performance strategies and processes since the SIA (URS, 2011) was finalised and exhibited.

Key actions presented in the SIMP update with the potential to assist in increasing the likelihood of increased local employment opportunities include:

- Implement a hierarchy of preferred employment for employees and contractors based on home or source location, with the highest preference for those living within the study area.
- School-based training for year 11 and 12 students in Dalby and Moranbah who want to gain vocational qualifications at the Certificate II level.
- Arrow Diversity Council to continue to work with industry groups that focus on increasing the engagement of women in the industry and developing pathways for women to work in non-traditional roles.

Key actions presented in the SIMP update with the potential to reduce the likelihood of population increase in excess of organic growth include:

- Develop a Construction Workforce Accommodation Strategy three months after Financial Investment Decision. The strategy will identify the preferred approach for facilitating accommodation for construction workers who relocate to the local area for the project, based on the state of the market to meet project generated demand and required market interventions to minimise adverse impacts upon the community.
- Develop an Operations Accommodation Strategy 12 months prior to the commencement of operations. The strategy will identify the preferred approach for facilitating accommodation for the operational workforce based on the ability of the market to meet project generated demand and required market interventions to minimise adverse impacts on the community.
- Encourage workers relocating to the area to move to towns better suited to growth by providing accommodation advice services for workers and their families and providing work shuttle buses between work site and towns with an employment pool (e.g. Toowoomba, Dalby, Cherbourg).
- Encourage local population growth where it is desired and planned for, enforcing the expectation that nonlocal operations employees will relocate to the project development area as there are no plans to establish fly-in, fly-out or drive-in, drive-out operations.

The revised commitments contained in the SIMP update are considered sufficient to increase the likelihood of local employment growth. In addition, they will assist in reducing the likelihood that the population will increase in excess of organic growth. As such no further management measures are proposed in this assessment.

Table 7-1 below provides a summary of the residual impacts once the measures above and others in the SIMP update have been applied to the impacts identified in Section 5.3.

Table 7-1 : Summary of changes to impacts

Impact or opportunity	Phase ⁹	Pos/Neg	Likelihood	Consequence	Significance
Changes to Population and Demographic Profile					
Population increase in excess of organic growth	C	Negative	Unlikely	Moderate	Medium
Impacts on Employment, Skills and Business					
Increased local employment opportunities	C, O	Positive	Almost certain	Moderate	High
Increased local expenditure on goods and services by incoming workers and residents	C, O	Positive	Likely	Moderate	High

⁹ C = Construction, O = Operation

8. Conclusions

The review of key socio-economic indicators undertaken as a part of this supplementary report has revealed that there have been a number of key changes in the social baseline of relevance to the project, including:

- Rates of population growth have been lower than estimated in the SIA which slightly reduces the amount of additional population growth the region can sustain organically.
- There is also greater potential for the project, with appropriate accommodation planning, to increase the sustainability of communities who have experienced population loss not captured in the previous population estimates.
- There is a larger proportion of the population in the study area who identified as Indigenous suggesting there could be a larger number of Indigenous people able to benefit from employment and business opportunities presented by the project.
- The study area has been subject to recent strong growth in housing costs, particularly in Chinchilla and Miles, however research undertaken by the Western Downs RC has concluded that pressure on the local housing market in towns such Miles will reduce as supply of land for development grows to meet demand after 2016.

The updates to the project description and social baseline have the potential to change a limited number of the impacts and opportunities identified in the SIA (URS, 2011). Positive impacts that will increase in likelihood include increased local employment opportunities and increased local expenditure on goods and services by incoming workers and residents. The project now also has the potential to impact negatively on sustainable population growth if it triggers population growth that exceeds organic growth in select areas.

The SIMP has been updated to better address the revised potential impacts and reflects the progress Arrow has made in relation to their social performance strategies and processes since the SIA (URS, 2011) was finalised. The commitments contained in the SIMP update are considered sufficient to manage the positive and negative social impacts triggered by the project. As such no further management measures have been proposed. The SIMP update contains a range of measures to monitor the effectiveness of the mitigation measures and will continue to evolve with the project.



9. References

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