

## 6 SUPPLEMENTARY ASSESSMENT – LNG COMPONENT

### 6.1 SUBMISSION ISSUES AND RESPONSES

A total of six submitters specifically addressed social and cultural impacts in the Gladstone area. *Chapter 3* summarises the relevant submissions and responses including where further details of assessment or refined mitigation strategies are discussed in response to submissions.

A summary of submitters' key issues and responses is included in *Table 8.6.1*. Please note additional issues submitted by Traditional Owners are addressed in *Chapter 7* of this volume.

**Table 8.6.1 Gladstone Social Impact Submission Issues and Responses**

| Summary of Submission  | Response   | Submitter Number |
|--|--|------------------|
| Opposes the construction of any bridge to Curtis Island in the Laird Point, Kangaroo Island areas.                   | A bridge to Curtis Island is not proposed as part of this Project.   | 23               |
| Total ban on all fishing by project people.  | QGC's code of conduct for the workforce will include a provision that there will be no fishing during work hours or whilst accommodated in the camp. QGC is not able to prohibit workers from fishing while they are off shift and not based in the camp.  | 23               |
| Emerging cultural issues include increase in Islamic, Indian and African people.                                     | Noted. New residents from non English speaking backgrounds will be considered in the development of social investment strategies, in consultation with the community reference Groups to be established as part of the community engagement Strategy for QCLNG, to be prepared before project construction.  | 29               |
| Public transport is poor and this reduces availability of health services.   | Noted. QCLNG's social impact management plan includes upgrading health facilities (see <i>Appendix 8.4</i> ).  | 29               |
| 'Adequate stock of housing' should be tempered by the reality of marginalised people being unable to access housing. | Vulnerable groups, housing affordability and housing stress discussed in the draft EIS e.g. <i>Volume 8, Chapter 6</i> p.25 – 27; p. 54 – 57.  | 29               |
| Population spikes due to industrial projects cause housing stress.   | The draft EIS ( <i>Volume 8 Chapter 6</i> , e.g. page 55) includes acknowledgement of industries' contribution to housing stress. <i>Volume 8, Chapter 6, Section 6.3</i> of the draft EIS contains a comprehensive assessment of housing impacts related to the project, including indirect and cumulative impacts.<br><br>The project's mitigation strategies for housing stress are described in <i>Volume 8, Chapter 6</i> (e.g. pages 87-89) and <i>Chapter 8</i> of the draft EIS. | 29               |

| Summary of Submission  | Response  | Submitter Number |
|--|---|------------------|
| States that Rockhampton is cited as being the main urban centre for services.  | The draft EIS refers to Rockhampton as a regional centre in the Project area, and notes that Rockhampton has higher order social and community services and facilities available.   | 29               |
| Assessment is based on desk-top research.  | <i>Volume 8, Chapters 1 to 3 and Volume 12</i> outline the methodology of the assessment. The Project has undertaken both desk top research and extensive stakeholder consultation.<br><br>Development of the Social Impact Management Plans will include consideration of updated data and information from reliable sources (see <i>Appendix 8.4</i> ).   | 29               |
| CATI survey is statistically unreliable.   | The CATI survey by UMR Research was based on a sample size of 600 respondents. A sample size of 400 would have provided a statistically reliable sample.  | 29               |
| Assumption that the project will develop strategies to address workforce issues in time is unrealistic.                  | Strategies to address workforce availability issues have been initiated, and will continue throughout the life of the project. These include ongoing recruitment for construction management, participation in industry training initiatives, and the development of a local content strategy.  | 29               |
| Notes 70% local labour availability unlikely due to cumulative impacts on workforce availability.                        | The Project's estimate when the EIS was drafted was 70%, and potentially as low as 50%. This has now been revised to include subcontractors. Estimates of local labour availability are now 40-45% for a single LNG project, and 20-25% with 2 major LNG projects. Revised assumptions and implications are discussed in the Supplementary EIS <i>Volume 8, Chapter 6, Section 6.2</i> .  | 29               |
| SIA has not taken into account the over capacity workload of community services.   | This is comprehensively discussed in <i>Volume 8, Chapter 6</i> of the draft EIS (pages 37 through 50), with reference to the benchmarking analysis undertaken for Gladstone's social infrastructure outlined in the Appendices to <i>Volume 8</i> . Consultation with community service providers during display of the draft EIS has given insight into the capacity issues of the community services. This information is being incorporated in the Project's future strategies on community infrastructure and community housing. | 29               |
| Council has committed ratepayer funds to subsidise human services, and ratepayers should not have to expend these funds. | Community services in Queensland are traditionally funded through a combination of community, Council, State, local and business contributions. The EIS includes mitigation for impacts on human services.  | 29               |

| Summary of Submission  | Response   | Submitter Number |
|--|--|------------------|
| A partnership approach to affordable housing will not be effective in time, and housing strategy needs to be started now.                | The draft EIS describes the partnership approach as one of several strategies which have been or are being initiated to address housing impacts, including camp provision, development of housing stock and an investment in affordable housing. QGC has initiated an Integrated Housing Strategy for QCLNG, which in the case of the Gladstone area includes a current study on opportunities for housing stock creation and purchase.  | 29               |
| States that on page 80 that there will be a need for 818 dwellings and that this is beyond the housing construction industry's capacity. | The estimate in the draft EIS was 285 direct dwellings required without an accommodation camp, and a total of 533 dwellings required for direct and indirect population growth without a camp. This was the estimated level of housing demand unmitigated by a camp. The number 818 is a misinterpretation where the 'direct' and the 'direct and indirect' numbers have been added by the submitter.<br>Housing industry's capacity to build houses is described in <i>Volume 8, Chapter 6</i> , page 53 of the draft EIS and notes housing and building approval levels are traditionally 600 – 700 dwellings per annum. The supplementary EIS includes a revised analysis using recently released data. | 29               |
| Notes cumulative impacts to be addressed by partnership group under Sustainable Resources Policy but asks how and when.                  | Whilst this project will mitigate its impacts, a 'whole of industry' strategy for housing impacts is outside the scope of any one project and should properly be addressed by the Partnership Group established as part of the Sustainable Resource Communities policy.  | 29               |
| Psychological impact on workers and families.  | As described in the draft EIS, the local workforce will return home at the end of their shift.<br>Impacts on families of non-local workers would not be exacerbated by the location of the camp on the island. The project does not agree that an island camp would have psychological impacts on workers. The camp will be designed appropriately to cater to the needs of the workers and ensure their health and recreational needs are serviced, in accordance with good industry practice.  | 29               |

| Summary of Submission   | Response   | Submitter Number |
|---|--|------------------|
| Lack of social infrastructure for camp residents.   | Provision of services and facilities in camps (e.g. a dedicated doctor and other health facilities) in the camp will be equal or better than facilities offered in mainland camps, and will include: <ul style="list-style-type: none"> <li>• Provision of health and medical services</li> <li>• Sporting facilities (like cricket, tennis)</li> <li>• Driving range</li> <li>• Gym</li> <li>• Recreation rooms</li> </ul>  | 29               |
| Restricted access to emergency services.  | Access to emergency services is outlined in <i>Volume 5, Chapter 18, Section 18.6.2</i> of the draft EIS, and will be comprehensively addressed, as noted, in the Emergency Response Plans being developed by contractors.   | 29               |
| Impact on existing residents of Curtis island is significant.   | Existing residents of Curtis Island are nine kilometres from the site, buffered by the Environmental Management Precinct, and will not experience any direct impacts as a result of the project. Indirect impact such as limitations on access to recreational fishing are described in draft EIS <i>Volume 8, Chapter 6, Section 6.3.7.1, p. 106-107</i> .  | 29               |
| Considers there will be no benefits from fly in fly out staff to local businesses.  | A comprehensive local content strategy has been developed to maximise local business opportunities. The Local Content Strategy will ensure economic benefits for local businesses, regardless of the location of the camp origin of the workforce. Further detail regarding economic benefits of the camp is included in <i>Sections 6.2.3.1 and 6.2.2.4</i> of this chapter.  | 29, 6            |
| Considers there will be no economic benefits from the island camp, e.g. small businesses are likely to be excluded from servicing an island camp. | The economic benefits of the island camp are discussed in <i>Sections 6.2.3.1 and 6.2.2.4</i> of this chapter.   | 29               |
| The EIS does not appear to have addressed or attempted to quantify the impact of the proposal on existing recreational facilities.                | The proposal to accommodate workers in an island camp would reduce impacts on recreational facilities. Impacts could result from workers' families. In the context of Gladstone's projected growth over the next five to ten years, this is insignificant.<br><br>The project's social performance strategy will include consideration of increasing the capacity of recreational organisations. Priorities for development of recreational facilities will also be addressed through the Gladstone Community Reference Group. | 29               |

| Summary of Submission   | Response  | Submitter Number |
|---|---|------------------|
| Concerns about the cumulative impact of LNG projects on Laird Point's recreational values.  | Laird Point is acknowledged as an area of recreational value. With the potential exception of the Narrows pipeline crossing, construction of which may cause temporary impacts on use (dependent on location), QCLNG's impact on Laird Point is insignificant.<br>As only one other LNG project has progressed up to the EIS stage it is difficult to assess cumulative impacts at this stage.  | 29               |
| If a camp for the pipeline is located outside of the project's license area it will require approval under the Integrated Planning Act.   | This is noted, and will be undertaken as required.  | 29               |
| Rising existing user needs and new proposed developments that will rely on shipping for importing and exporting of goods and services, will ensure that the Gladstone Harbour cannot be used by any other user. | As both a harbour and a growing port, the Gladstone Harbour supports both economic and recreational values for Gladstone residents.<br>Effects on Marine recreation in the Harbour are assessed and reported in <i>Volume 8, Chapter 6, Section 6.7.3.1</i> of the draft EIS.<br>QGC is undertaking further studies to ensure detailed information about existing uses is considered in management of construction and operational marine transport. These are described in <i>Volume 8, Chapter 6</i> of the sEIS. | 6                |
| Emergency Response in case of catastrophic accident - EIS has not adequately assessed medical attention and services required in the case of a major accident or failure of a tank.                             | The risk of incidents requiring Emergency response has been assessed and is reported in <i>Volume 5, Chapter 18</i> of the draft EIS and updated in <i>Volume 5, Chapter 18</i> of the sEIS.<br>QGC is consulting with Emergency Service and health providers in regard to ensuring QGC's practice and operational provisions for health and safety are adequate to mitigate any excessive demand on emergency and health services.   | 2                |
| Environmental impacts of the GPC intention to reclaim parts of the bay between Fisherman's Landing and Friend Point.  | This is discussed in GPC's environmental impact statements for Fisherman's Landing 153 and the Western Basin.   | 16               |
| Loss of some fishing areas.   | QGC has undertaken a boating study and a more detailed assessment of social uses in the Narrows crossing area. The findings of these assessments are included in the <i>Volume 8, Chapter 6</i> of the sEIS.  | 16               |

| Summary of Submission   | Response   | Submitter Number |
|---|--|------------------|
| Loss of access to the Targinie Creek area will affect income. The Southern pipeline route would have fewer impacts.         | The pipeline crossing is likely to be constructed as part of the common user corridor, which will require further consultation with local users. QGC is undertaking a detailed assessment of potential pipeline alignments to feed into consideration of the corridor's alignment. | 16               |
| No reclamation work as currently proposed due to loss of marine ecosystem and viability of local fishing industry.          | Reclamation work is not part of this EIS and is addressed in the Fisherman's Landing EIS and the Western Basin Dredge Spoil Disposal EIS. Submission issues related to reclamation should be directed to the Gladstone Ports Corporation.  | 22               |
| Compensation for local fishers for loss of access or product to be negotiated by QGC.                                       | QCLNG is planning its construction traffic and worker transport routes to avoid any impact on access to fishing areas. Consolation with the Seafood Industry will continue, and a local partnership to sustain harbour access is planned.  | 22               |
| No pipeline should be laid across Targinie Creek as it will limit access to fishing grounds and loss of habitat.            | The pipeline crossing is likely to be constructed as part of the common user corridor, which will require further consultation with local users. QGC is undertaking a detailed assessment of potential pipeline alignments to feed into consideration of the corridor's alignment. | 22               |
| Submitter has housing stock available for renting in Gladstone.   | Noted for consideration in the Housing Strategy.   | 17               |
| Submitter (industry proposal) wishes to work with QCLNG to develop community infrastructure to ensure benefits are released | QGC is willing to work with industry stakeholders to address cumulative impacts and maximise collaborative benefits.   | 39               |

## 6.2 REVIEW OF PROJECT IMPACTS AND MITIGATIONS

### 6.2.1 Workforce

The construction workforce for the LNG facility was estimated in the draft EIS to reach a peak of 1,500 workers. Detailed planning has identified a larger optimal workforce for LNG facility construction than was earlier envisaged, with the peak workforce more than double the workforce forecast in the draft EIS. The workforce forecast has also been expanded to account for key groups of subcontractors.

#### 6.2.1.1 LNG Facility Construction Workforce

The start-up workforce (in Q2 2010) will comprise a total workforce of more than 550 people, building to more than 1,500 workers by April 2011. The workforce will reach more than 3,000 people by January 2012, and will

peak at more than 3,200 by mid 2012. Twenty percent of non-local manual workers would be off-site at any one time.

Labour availability in Gladstone appears highly dynamic, with reports of both worker outflows to Western Australia, and worker inflows from mining communities in the past 6 months.

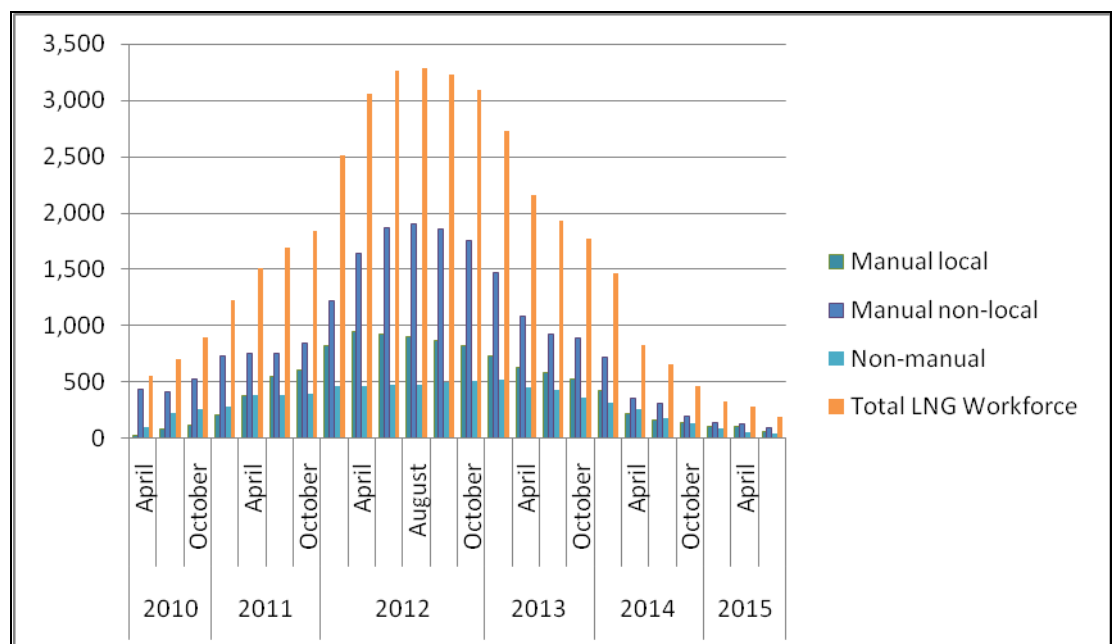
Revised estimates suggest local workers are expected to comprise around 42% of the total workforce, allowing for the presence of other projects in the Gladstone region, and nation-wide competition for relevant trades. However, at peak, the increased number of non-local workers will see the local percentage drop to around 35%. This would include a peak of approximately 950 local manual workers, and a peak of more than 1,900 non-local manual workers, with an additional 400 non-manual workers at that time (July-August 2012).

Construction workforce numbers will decline from mid 2012, to approximately 800 in April 2014, and to less than 200 by June 2015. Construction of the first two trains is expected to be complete by mid 2015.

Over the QCLNG construction period of 60 months, the average number of jobs (manual and non-manual) is forecast at 1,566. Approximately 1,230 would be manual jobs, with an average of 330 non-manual jobs. Approximately one third of non-manual jobs are expected to be taken up by local people.

Figure 8.6.1 is a histogram showing the expected workforce numbers for LNG facility construction between July 2010 and June 2015. This represents the total workforce, rather than the on-site workforce excluding off shift workers. An optimisation exercise is currently underway, and the workforce peak may ultimately decrease to around 2,500 on site.

**Figure 8.6.1 QCLNG Total Local and Non-Local Workforce, LNG Facility construction**





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## Cumulative (2 LNG projects) scenario

With a second similar project beginning concurrently with QCLNG, the share of local workers would be split between projects. At peak, this would see the local manual jobs in QCLNG decrease, and non-local manual workers increase. EPC Contractor estimates that in a two-project scenario, the average percentage of local workers in QCLNG would be around 29%, however at peak this would drop to around 23%. Under this scenario, the non-local workforce could peak at more than 2,300 in total.

### 6.2.2 *Housing Demand*

Potential housing impacts were raised by submitters as discussed in *Section 6.1*, and referred to the need for a strategy to ensure QCLNG and industries' cumulative impacts are addressed, to avoid impacts on low income households' housing security, including Indigenous people's housing.

#### 6.2.2.1 *QCLNG Workforce Housing Requirement at Start-up (2010-11)*

Rental dwelling availability (vacancy rate) in the Gladstone region (LGA) in 2008-2009 was approximately 8%, which would see around 476 dwellings available (from a total rental dwelling availability of approximately 5,900 dwellings). Availability in the previous year was approximately 3%, which saw around 179 dwellings available.

It is likely that housing availability will decline if, as expected, the market for the region's exports continues to expand, and as news of LNG project sanction approaches. As such it has been assumed that in 2010-2011, around 250 dwellings (approximately 4% of stock) will be available.

*Figure 8.6.2* shows the expected dwelling requirement for QCLNG's non-local workforce and subcontractors from start up in April 2010 to February 2011, when the QCLNG island camp will become available.

Manual workers with unattached status will be accommodated in mainland camp accommodation during this period.

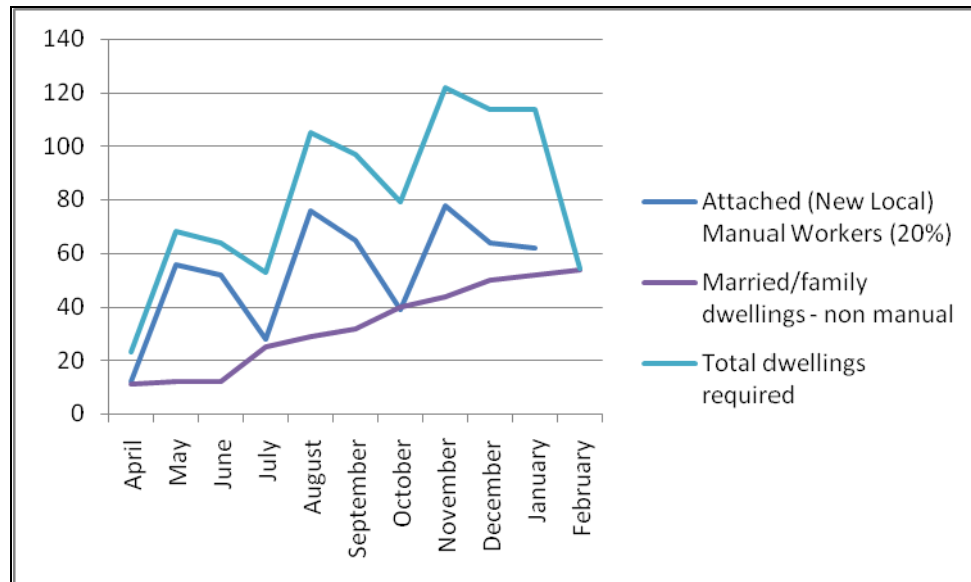
As discussed in the draft EIS, analysis of housing impacts includes an assumed 20% of non-local workers who will move their families to the Gladstone region, at least for the five year construction period, and that workers will require housing as follows:

- 20% of manual workers with attached status, requiring one dwelling per worker
- 25% of non-manual workers with unattached status, at the rate of one dwelling (unit) per worker
- 75% of non-manual workers with attached (married or family) status.



The analysis indicates that the total housing requirement for non-local construction workers (manual and non-manual, and including major contractors) would total around 20 houses at start-up (mid 2010), peaking at more than 120 dwellings by late 2010.

**Figure 8.6.2 Workforce Housing Requirements 2010-11**



This level of demand on rental housing is likely to place demand-pull inflation on rental housing costs and increase local housing stress if not carefully managed.

Section 6.2.2.3 shows analysis of the peak demand for housing including construction and operation, and indicates that, by the peak of construction in 2012, QCLNG’s total workforce (including major contractors’ staff) may require more than 320 dwellings, including purchased and rental dwellings, both units and houses.

As discussed in the draft EIS, a combination of housing strategies will be required to mitigate demand on the local housing supply, and these are outlined in Section 6.2.2.4.

**Cumulative Impact**

Whilst a number of housing projects in the Gladstone region are proposed and/or approved, large investor confidence has not yet returned to pre-October 2008 levels, and new dwelling constructions are likely to lag behind demand by 2010-2011 if more than two major industry projects proceed next year.

With two LNG projects of similar size and workforce requirements, assuming a similar timeframe for construction, and without large accommodation camps for each project, the cumulative demand would exceed rental dwelling supply at or soon after project start-up.

### 6.2.2.2 *Housing for Operational Staff*

QCLNG currently expects that the LNG facility will require a direct workforce of approximately 160 people, of whom some 120 would be located in Gladstone. This will increase to nearly 200 in Gladstone following commissioning of Train 3. Others staff would be located in Brisbane. Direct jobs will include production operators, instrument technicians, skilled trades people, and supervisory and managerial staff.

QGC estimates that, in 2009, 45% of Gladstone based jobs could be filled locally. QGC is committed to ensuring that local job opportunities are maximised, and aspires to a target of 80% local employment in its Gladstone operations. Both social performance and human relations programs are targeted towards this outcome. Strategies include developing paths to qualifications for Gladstone residents, and a staff development program using specialist expatriate staff to coach and train local people.

Depending on the operational model adopted, QGC may employ staff in additional occupational categories, or source services from suppliers. Whilst some specialist services can only be accessed through other Australian cities, QGC has initiated a Local Content Strategy to develop the Gladstone region's capacity to supply competitive services for operations. An additional 200-300 contracted positions are likely, however a more detailed estimate will be available in mid 2010.

Operational staff will be employed well ahead of plant commissioning, with around 75% of the full complement employed before construction is complete. Up to 20 staff are expected by early 2011, for a housing requirement of up to 20 dwellings. If 50% of the Gladstone-based staff are local at start-up, 60 would require housing, amounting to a dwelling requirement of about 40 dwellings (given shared housing for singles). If 80% are local on start-up, approximately 24 non-local staff would be required in Gladstone, for a housing requirement of around 15 dwellings.

This will need to be progressively reviewed, and the composition of the workforce determined (e.g. local/non local, and direct/non-direct) before more detailed planning is undertaken.

An Integrated project Housing Strategy is in preparation and will be provided as part of the Social Impact Management Plan (working draft attached as *Appendix 8.4*).

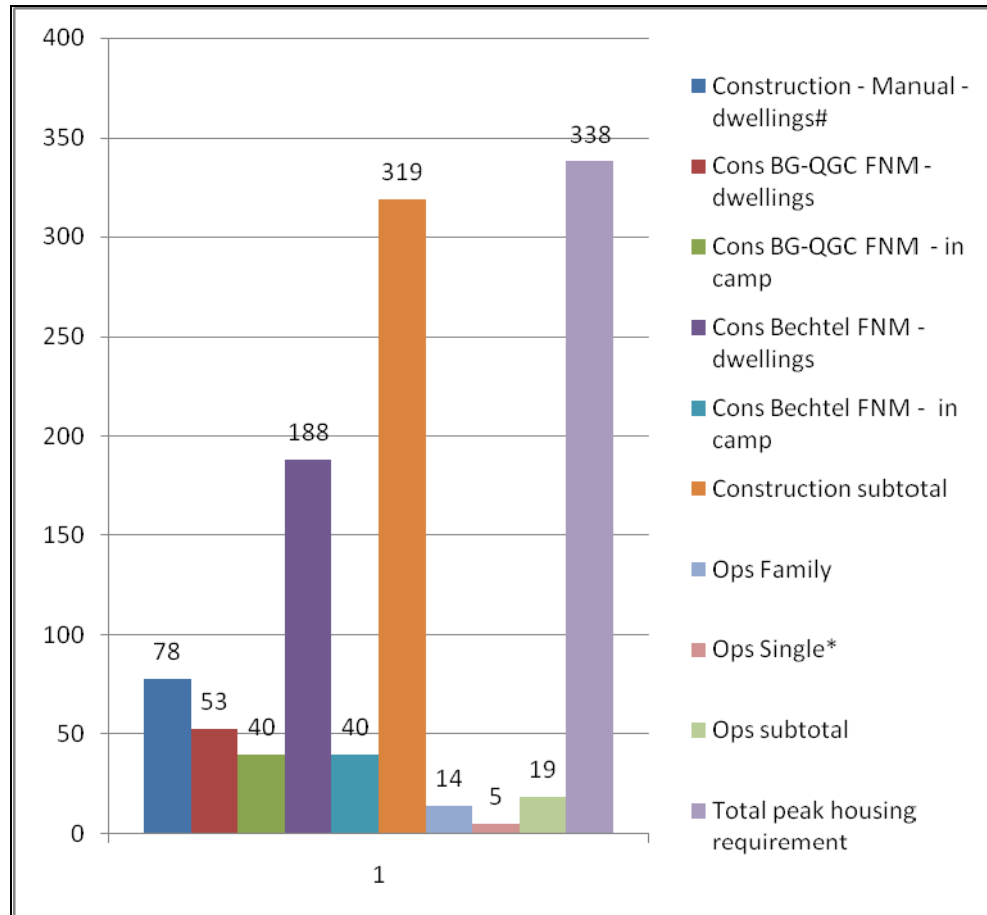
### 6.2.2.3 *Constructions plus Operations Peak Housing Demand*

At August 2012 (the construction peak), the operational housing requirement is expected to be around 20 dwellings.

At the construction peak, and including dwellings required for non-local operational staff, the total housing requirement for QCLNG is forecast at up to 340 dwellings, as indicated in *Figure 8.6.3*. This is a higher estimate than that

included in the draft EIS, as workforce forecasts have changed and major contractors have been considered in further detail.

**Figure 8.6.3 Peak Housing Demand - QCLNG - Construction and Operational Staff Dwellings**



6.2.2.4 *Mitigation*

**Investment in Development of Onshore Camps**

Submission issues included a preference for onshore accommodation camps, believing economic benefits would be greater.

The LNG facility construction will require workers' camp accommodation for up to 2,000 workers. Construction of the pipeline and accommodation of pipeline workers would also require the establishment of a camp for about 300 workers to be established near the Callide Range, and the Narrows Crossing will require camp accommodation for up to 150 workers in the Gladstone area.

Following consultation on the draft EIS and review of workforce numbers, QCLNG has amended its camp accommodation strategy housing strategy as follows.

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QGC and its principal contractor will initiate an agreement with the managers of a camp with planning scheme approval in Gladstone LGA to develop and accommodate QCLNG workers in 2010-2011, and potentially in 2012.

This will initiate construction of these camps, supporting the provision of a long term construction housing option for Gladstone.

Economic benefits will ensue as follows:

- QCLNG workers will live in on-shore camps for up to two years, and will contribute to the local economy on a daily basis during that period.
- Workers flowing through Gladstone between shifts will access businesses (such as hotels and accommodation places) and services on a weekly basis.
- Businesses that build and service on-shore camps used by QCLNG will benefit.
- Initiation of the approved camps will build local capacity for supply to the island camp, with the assistance of capacity building initiatives under either cross-industry or QGC local content strategies.

A camp is also required in or near Gladstone LGA for pipeline construction workers. QGC will advise Gladstone Regional Council or Banana Shire Council of the intended location of camps, seek Councils' input to camp siting considerations and consult on mitigation measures where relevant, and seek regulatory approvals as required.

### **Island Camp Rationale**

At peak construction (2012) QCLNG will require accommodation for up to 2,000 workers. Gladstone's currently approved camp capacity is limited to two workers' accommodation facilities with a combined capacity of 540 places, which would be insufficient for QCLNG demand by early 2011.

It is likely that approval and then construction processes for a workers' accommodation camp for 2,000 workers in Gladstone would delay a larger on-shore camp's construction beyond 2011, and cause unacceptable impacts on housing availability.

QGC remains certain that the development of a workers' accommodation camp on the island is required to mitigate impacts on housing and social values. These potential impacts include:

- conflicts with adjacent land uses
- commuter traffic to the ferry terminal
- local perceptions of safety
- anti-social behaviour and poor role modelling regarding alcohol use
- sexual health issues

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- demands on social, health, recreational and traffic infrastructure
  - worker fatigue, for workers from nearby regional centres.

QCLNG will provide for construction workforce health and safety within the LNG precinct camp, including:

- a full time doctor
- a paramedic/nurse practitioner service
- a worker health facility within the camp
- occupational health and medi-vac services.

The draft EIS proposed a temporary camp on the LNG facility to house up to 1,200 workers. Given revised workforce availability forecasts, a camp with up to 2,000 personnel is now proposed for construction and operation by Q2 2011.

The proposed camp on the LNG facility site would mitigate most of the social issues arising from large non-local workforces living in or near towns. QGC is also cognisant of the need to ensure that workers transiting through Gladstone between shifts are appropriately managed. The majority will be bussed directly to Gladstone Airport. Some will choose to stay in Gladstone, and are expected to make demands on (and provide economic benefits for) short stay accommodation, hotels and restaurants. Codes of conduct for worker behaviour are being developed as outlined in the draft EIS *Volume 8, Chapter 8*.

### **Housing Strategy**

QGC has initiated development of an integrated Housing Strategy for the whole QCLNG project, to address all QGC housing impacts, and cumulative impacts as determined. The housing strategy will include:

- joint ventures or investment for construction of dwellings in approved residential sub-divisions for project families (currently being identified)
- securing rental dwellings with consideration to managing impacts on dwelling supply and rental costs
- investing in affordable housing for very low income households who may be affected by rental price increases
- developing relationships with key stakeholders to generate co-operative housing solutions
- provision of further data and options analysis to fulfil and monitor EIS commitments in housing in Gladstone.

Whilst QGC is willing to share responsibility and potentially lead co-operative solutions to cumulative impacts, a successful solution is dependent on the level of co-operation from industry, and government stakeholders.

*Volume 8, Chapter 6 and Chapter 8* of the draft EIS include reference to affordable housing initiatives required for the project, with Indigenous people identified as a community which should benefit from affordable housing initiatives. QGC's housing strategy will include a component designed to address the specific vulnerabilities faced by Indigenous communities, new migrants and young people in respect to housing security.

### **6.2.3 Other Changes as a Result of Increased Workforce**

#### **6.2.3.1 Employment Security and Economic Benefits**

The provision of a peak of more than 3,000 construction jobs for the LNG component will increase the number of jobs available for local and regional residents with appropriate skills, and consequently their employment and income security.

It may also lead to an increase in the labour draw from local businesses and services, or from other industrial projects. Mitigation strategies for labour draw are outlined in the draft EIS.

Benefits for local businesses are also expected to improve beyond that anticipated in the draft EIS. This is due to:

- the requirement for on-shore camps for LNG construction workers in the first ten months
- the requirement for accommodation camps for pipeline and Narrows Crossing workers
- the increased number of non-local workers accessing businesses and services on the way in and out of Gladstone
- the development of QGC's Local Content Strategy, which will increase local businesses' knowledge of opportunities and capacity to compete.

QGC has developed a Local Content Strategy to maximise local economic benefits. The Local Content Strategy will ensure economic benefits for local businesses. It includes:

- a focus on recruitment strategies and contract conditions which will attract local labour
- maximising employment and economic development for indigenous people through direct employment and training, and support for business development
- working with local suppliers to increase their capacity to supply QCLNG and like projects
- providing capable Suppliers with full, fair and reasonable opportunity to supply equipment, materials and services
- facilitating Suppliers to competitively replace imports and access global supply chains.

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QGC is also participating in the QMEA cross-industry training initiative, and assessing strategies proposed by the National Resources Sector Employment Taskforce.

#### 6.2.3.2 *Population Increase*

The increased number of jobs now available and the LNG facility's 60 month construction timeframe, are expected to draw additional people to Gladstone for QCLNG jobs. Using the more detailed data now available, it is estimated that, at peak, QCLNG could be responsible for more than 330 families living in Gladstone. Of these, some construction workers' families would stay in Gladstone after construction, strengthening the population base and the local skills profile. Operations would see upwards of 30 new families attracted to Gladstone for permanent jobs in the LNG facility.

#### 6.2.3.3 *Interaction of Non-Local Workers*

One submitter noted that integrating workers into the community is desirable and that an island camp would prevent this. Prior to the construction of the island camp, non-local workers will be based in Gladstone, and this will lead to increased interaction of non-local workers in the Gladstone community. Programs will be delivered to encourage their participation in local sporting groups and community events. By late 2010 this could see more than 300 single status manual workers and some 20 single status non-manual workers in the Gladstone community.

As discussed in the draft EIS, QCLNG is developing its worker code of conduct (town and camp rules) to ensure workers moving through town between shifts are respectful of local values. Workers will be required to sign in and out of the camp (for emergency management purposes) which will assist in behavioural management.

QCLNG is also investing in local community capacity to expand community services and provide targeted initiatives to ensure any residual impacts on community safety perceptions or other community values are offset.

The availability of Australian workers for 'non-local' employment is uncertain, due to the inability to predict if or when other Australian projects (LNG or others with similar requirements) will proceed. It is not planned, but possible, that imported workers will be required to supplement Australian labour. As discussed in the draft EIS, these would be drawn firstly from New Zealand, and the US. As forecast in the draft EIS, consultation with local organisations would assist in developing strategies for the successful integration of workers.

#### 6.2.3.4 *Impacts on Social Infrastructure*

The anticipated increase in the increased number of both non-local workers and families is expected to cause an incremental increase in demand for social and recreational facilities, and community services.



The population increase stimulated by QCLNG is likely to lead to a small but appreciable increase in demand for health services, school enrolments and employment services for partners and young family members.

QGC will liaise with key agencies including Education Queensland, Queensland Health and Queensland Police to ensure they are aware of QCLNG's employment program and the periods in which either new families or an influx of non-local workers is expected.

QCLNG's mitigation strategy for impacts on social and health infrastructure is outlined in the draft EIS (*Volume 8 Chapters 6 and 8*). QGC is currently undertaking consultation with social infrastructure stakeholders to further detail its social infrastructure baseline with respect to the capacity and priorities of local organisations, and is developing partnerships and projects to address social impacts in co-operation with key stakeholders, for delivery upon project approval. QGC also anticipates that Gladstone's Strategic Social Infrastructure report will identify further priorities to be addressed through co-operation between industry, government and community stakeholders.

QGC has also committed to contributions to health facility upgrades in Gladstone, and will commence discussions with health stakeholders to develop the plan for health service investment in Q1 2010.

#### **6.2.4 Marine Recreation**

The Narrows is an important waterway located between Targinie and Curtis Island. In addition, the study area comprises a number of creeks, being Humpy Creek, Targinie Creek and Grahams Creek. Submissions highlighted the importance of this area to Traditional Owners, community members, sailors, and fishers and crabbers, both recreational and commercial. The Great Barrier Reef Marine Park is located directly north of the study area, and has national and internal significance as a place for recreation, conservation activities, fishing, boating and environmental appreciation.

QGC activities which may affect boating and fishing uses include the Narrows pipeline crossing, construction of marine facilities including the construction dock, marine traffic, and dredging to gain access to the QCLNG facility.

Access to the study area is currently provided via Phillipies Landing Road, which connects to the Bruce Highway via The Narrows Road, Nichols Road, Targinnie Road and Flinders Road and to the Mt Larcom Gladstone Road via Calliope River Targinie Road and Flinders Road.

Construction methods for the pipeline will be determined as part of the FEED phase, but may include:

- Open cut trench across extending across each of the five sections.
- Horizontally Directionally Drilling (HDD) across the Creek, Marshland and The Narrows sections.
- Combination of the above two methodologies.

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QGC has undertaken additional studies to inform impact assessment and mitigation of impacts on recreational and commercial boating, and develop targeted management strategies, as outlined here.

#### 6.2.4.1

##### *Consultation*

Consultation undertaken to inform this assessment involved key stakeholders including commercial fishing, recreational fishing, tourism, scouts, birdwatchers, industry, and other groups, regarding:

- Times of use, including on a weekly, monthly and annual/seasonal basis.
- Key events that may occur in the area (i.e. boating, fishing, camping, etc) and the timing of these events.
- Locations in the study area that have high levels of use and reason for use (i.e. Graham's Creek, The Narrows, fishing, boat mooring, etc).
- Other similar facilities/ public accesses available locally (i.e. boat ramps, fishing, boating, etc).
- Other important values relevant to the study area (i.e. cultural, environmental, etc).

The purpose of the consultation was to gather baseline information on the use of the study area. In addition, this study was informed by:

- Weekday and weekend observations of the use of the Phillipies Landing boat ramp, in October 2009.
- Observations of the use of Humpy and Targinie creeks, in October 2009.

Concerns were raised by the commercial fishing community during draft EIS consultation as follows:

- impacts on the Narrows area and Targinie Creek
- potential restrictions on access to fishing grounds and loss of habitat
- subsequent impacts on commercial fishing operations.

Consultation with commercial fishers and crabbers indicated that a number commercial fishing businesses operate locally, including:

- a local shark fisherman (working from Facing Island) and four smaller commercial fishing businesses operating at the top end of The Narrows
- Eight fishing tourism charter businesses, including one offering crabbing tours
- 10-12 commercial crabbing operations, for some of whom crabbing is their sole income.

QGC has committed to ongoing consultation with the commercial fishing and boating industry in Gladstone to ensure impacts of construction and operation

are mitigated through detailed knowledge of local values and consideration of locational issues wherever possible in project planning.

A survey of boating activity conducted for QGC by Central Queensland University in October 2009 provides additional information (see *Appendix 5.5* of the sEIS for the full report).

#### 6.2.4.2 *Narrows and Creeks' Social and Cultural Values*

As described in the draft EIS, social and cultural values include Indigenous heritage values, boat passage, recreational boating, fishing and crabbing. The Great Barrier Reef Marine Park is located directly north of the study area, and has national and international significance for recreation, conservation activities, fishing, boating and environmental appreciation.

Traditional owners' particular values as expressed in consultation include:

- Kangaroo Island is extremely sensitive, and the PCCC consider Kangaroo Island to be much bigger in area than the cadastral area.
- The salt marsh and creeks in the vicinity of Phillipies Landing are sensitive and very high in spiritual and cultural heritage values. The PCCC's preference would be for the crossing to be moved south.
- The PCCC is very concerned about the loss of mangroves, particularly in relation to their habitat and cultural values in relation to food.

Environmental values are also strongly held by community members and Traditional Owners.

Consultation with stakeholders (listed in *Chapter 5*) provided the following information about the use of particular areas:

- The Narrows and Grahams Creek are popular for fishing and boating, and provide safe harbours for smaller private sailing vessels during cyclones and rough weather.
- Boats currently moor in Graham's Creek (near Laird Point) as it provides good access into Gladstone.
- Graham's Creek is also used as a safe haven during inclement weather and cyclones, particularly for larger vessels as it provides deep water and good swing room.
- Graham's Creek is popular for crabbing, including commercial and recreational crabbers.
- Laird Point is a popular location for informal camping and day trips by yachties as it is the "only piece of sandy beach in The Narrows".
- At low tide, boats congregate at Black Swan Creek and Graham's Creek (near Laird Point) waiting to pass on the high tide.
- Friend Point is an important location for the crabbing industry.

- Targinie Creek and Graham's Creek are popular for crabbing and shorelines including adjacent to the proposed LNG site, are popular for Barramundi.

Further consultation data on seasonal community uses included:

- The Gladstone Sportfishing Association conducts monthly outings to nominated fishing spots.
- Between May and August, The Port Curtis Sailing Club (PCSC) runs social sailing events which come down The Narrows.
- Between April and June, a lot of yachts use The Narrows, particularly those who are heading north for the winter months.
- Some boats come through The Narrows at night due to the tides, as such lighting will be an issue during construction. Background lighting from Gladstone at night can cause confusion and is currently a safety issue.

#### 6.2.4.3 *Boating Survey*

QGC commissioned Central Queensland University to undertake a boating use survey. Its objectives were to quantify boating and fishing activity in the harbour from the Calliope River Mouth, to the Narrows and Graham Creek, and including the Targinnie and Hump Creek system. The survey was not able to reflect seasonality, but the survey period is considered typical.

The survey was conducted over five weekdays and five weekends between 25 October 2009 and 8 November 2009 and aimed to:

- Determine the level of commercial and boating activity during weekdays and weekends.
- Determine the type of vessels that used this area and the types of activities undertaken.
- Determine the speeds and direction of boat traffic.

A total of 2,747 boats were recorded during the boating survey of which approximately 63% were recorded at Gladstone Harbour (refer *Table 8.6.2*)

A total of 331 boats were recorded at The Narrows over the 10 days of the survey.

**Table 8.6.2** *Boat Activity*

| Location                           | Total number of boats surveyed | Average number of boats per day |          |
|------------------------------------|--------------------------------|---------------------------------|----------|
|                                    |                                | Weekdays                        | Weekends |
| Gladstone Harbour (Auckland Creek) | 1,741                          | 128                             | 183      |
| Calliope River                     | 675                            | 37                              | 98       |
| The Narrows                        | 331                            | 20                              | 37       |

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CQU's report identified the following findings:

- each location had more than twice the number of recreational vessels at the weekend compared to weekdays
- overall, each location generally had higher proportions of recreational vessels than commercial vessels
- at The Narrows, sailing boats comprised the largest proportion of boats on weekdays (40%), while 'tinnies' and 'half-cabin' boats comprised the largest proportion on weekends (61%)
- the majority of boats in both Gladstone Harbour and The Narrows were 'travelling' on both weekends and weekdays, while the majority of boats in the Calliope River were involved with fishing or crabbing activities
- there were higher proportions of boats in The Narrows at anchor on weekdays (22%) than on weekends (16%).

### **Creeks**

A separate survey was also conducted to determine the use by small vessels of creeks in The Narrows. This involved a survey of boat trailers at boat ramps at Phillipies Landing and Ramsey's Crossing (north and south) during high tide over four weekdays and four weekends between 13 November 2009 and 22 November 2009.

The boat ramp survey recorded a total of 133 boat trailers at the three boat ramps. Of these, approximately 64% (85 trailers) were recorded on weekends. The Phillipies Landing boat ramp tended to be used more on weekends than during the week. On average, approximately nine boat trailers were recorded at the Phillipies Landing boat ramp on weekends and about 6 trailers during weekdays.

This is slightly lower than information received during consultation for this study on the estimated number of people that use this boat ramp, but also reinforces feedback received during consultation that boat ramps closer to Gladstone (i.e. Auckland Creek and Calliope River) are generally more popular than the Targinnie boat ramp.

#### **6.2.4.4**

##### *Scope of Impacts*

The scope of social impacts which may be experienced as a result of the Narrows pipeline crossing construction or other activities adjacent to the Narrows includes:

- A number of cultural heritage sites are located in the vicinity of Phillipies Landing Road and boat ramp and could be impacted by construction activities. The location of the pipeline in the vicinity of Phillipies Landing was identified as a key concern for the PCCC.
- Kangaroo Island has been identified as having important cultural heritage values for local Indigenous groups and impact on this area would be a concern for these groups.

- Construction could require clearing of mangroves, which have been identified as providing important habitats for fish and crabs and having important cultural values.
- Noise and dust from construction activities may impact on amenity for recreational users in Targinnie and Humpy Creeks.
- Access to the Targinie Creek may require dredging of the tributary to Targinie Creek to allow access with work barges or establishing a temporary road in this area.
- Phillipies Landing boat ramp provides access for commercial crabbing operations, particularly during rough weather, and any temporary closure would require commercial fisherman to access pots in The Narrows area from Gladstone.
- One method of construction is to dredge a trench across The Narrows prior to laying the pipe (pre-trenching). Access to The Narrows would be restricted for some or all vessels during dredging operations, laying the wire (from Friend Point to Laird Point) and pulling through the pipeline. The duration of access restrictions are still being determined.
- An alternative method is to lay the pipeline on the sea bed and to trench this using a “jetting machine” (i.e. post trenching). Access to The Narrows may be restricted for some or all vessels during the jetting operation or while the pipeline is laying on the sea bed. The duration of any access restrictions are still being determined.

As a submerged pipeline, no impacts are expected in relation to operation of the pipeline in this area, with the exception of very occasional temporary disturbance to recreational use in the surrounding area during maintenance activities.

#### 6.2.4.5

#### *Mitigation*

Evaluation of the significance of impacts is not possible until common corridor issues (such as location and possible co-location of pipelines) and construction methods are resolved. However mitigations which will be required in respect to The Narrows crossing and other activities within The Narrows area include:

- Undertake early and ongoing consultation with Traditional Owners regarding construction locations and methodology.
- Manage cultural heritage in the area such as to meet all duties of care and comply with the CHMP for the area.
- Undertake early and ongoing consultation with key user groups and marine event managers about construction activities, including timing, duration, potential impacts and mitigation measures.
- Minimise clearing of mangroves and construction impacts on important crab habitats, including in the vicinity of Targinie Creek, Humpy Creek and Friend Point.

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- Where possible, schedule works that may result in the temporary closure of Phillipies Landing during the low seasons for commercial crabbers (i.e. August - October).
  - Maintain deep water access to The Narrows to allow boats to pass through The Narrows, particularly during rough weather.
  - Provide early and ongoing notification for users of The Narrows about construction activities, including timing, duration and potential impacts (specifically around closures or restricted access).
  - Ongoing consultation and notification to commercial fishers, particularly commercial crabbing operations.
  - Signage at Phillipies Landing boat ramp.

QGC also intends to establish a Gladstone Harbour Partnership to work with local stakeholders to:

- identify initiatives to enhance safe enjoyment of the Harbour, The Narrows and adjacent creeks
- support environmental protection initiatives in this area
- identify economic value which could accrue to the local fishing or boating industries through supply or partnership options.

## **6.3 SIGNIFICANCE AND MITIGATION**

### **6.3.1 Significance of Changed Impacts**

An amended table of significance and impact on social indicators is included in the draft SIMP. In summary, key changes to the significance of project impacts as compared to those documented in the draft EIS include:

#### *Positive*

- an increased workforce, with jobs available for all local workers with appropriate skills, and a peak of more than 3,000 construction jobs
- increased indirect jobs, with an estimated average of 300 and peak of 1,000 indirect jobs in Gladstone's economy
- increased contribution to building a strong and highly skilled construction workforce in Gladstone
- the legacy of facilitating on-shore accommodation camp development, and enhanced benefits for businesses in relation to the camps.

#### *Negative*

- increased demands on housing supply (more than 300 dwellings at peak) and potential for negative effects on local housing access
- increased demand from workforce families on social and health infrastructure



- increased attention required to ensure positive interaction between the increased non-local workforce and the community.

Supplementary assessment has also provided more detailed information to ensure social values attached to the local marine environment are protected.

Community legacies inherent in QCLNG's approach include:

- Facilitating the development of on-shore camps approved but not yet constructed, with a commitment of up to 2 years' uptake.
- Facilitating development of housing stock for QCLNG families who will be Gladstone residents.
- Affordable housing, health and social infrastructure upgrades, as a result of commitments to investment in social, health and housing infrastructure as detailed in the draft EIS *Volume 8, Chapter 8*.
- Local skills enhancement, employment pathways and training for young people.
- Local labour force readiness for major projects.
- Development of local suppliers' capacity to benefit from local industry and export supply.

### **6.3.2 Mitigation Amendments**

The Draft Social Impact Management Plan (SIMP) will provide the framework and detail for mitigation of social impacts as discussed in the draft and sEIS (as detailed in *Appendix 8.4*). The SIMP outlines mitigation and management strategies to address key impact areas, and includes objectives, performance criteria, detailed implementation activities and accountabilities, community engagement, and monitoring and auditing protocols.

QGC will consult with key stakeholders on the draft SIMP between February and April 2010, with the SIMP finalised prior to project approvals.

Amendments to mitigations identified as the result of consultation on the draft EIS and assessment for the Supplementary EIS include:

- a commitment to using onshore camps for the pre-peak workforce
- provision of a full time doctor and camp health facility for the workforce, in addition to the workforce health services identified in the draft EIS
- a Gladstone Harbour Partnership to engage stakeholders in mitigation and social investment projects to protect the safety, enjoyment and environmental qualities of Gladstone Harbour and the Narrows
- detailed mitigation measure in relation to the Narrows Pipeline crossing
- development of an integrated housing strategy for the project area, including plans to address housing production and affordable housing in Gladstone.

QGC is currently working with stakeholders to develop mitigations outlined in the draft EIS, in readiness for project approvals. This includes consultation with social infrastructure stakeholders in the Gladstone region to identify partners and projects for implementation.

QGC has also integrated social performance requirements for Project construction contractors in invitations to tender and contract discussions. Contractors will be responsible for key tasks and work programs, and are required to comply with QGC social performance standards and accountabilities for impact mitigation.

In the case of housing, social and health infrastructure, roads and marine safety, co-operative strategies are required to mitigate impacts from QCLNG and other projects. These will range from supporting local initiatives, to major regional and strategic partnerships. It will include co-operation with Traditional Owners, Councils, Governments, businesses and other industry partners to address shared priorities.