



Cape York Region Package

Social, Environmental and Economic Impact Assessment

Evaluation Report – December 2022

Copyright

This publication is protected by the Copyright Act 1968.

© The State of Queensland (Department of Transport and Main Roads) 2023. All rights reserved.

Disclaimer: This publication is provided as a source of information only and the State of Queensland makes no statements, representations or warranties about its accuracy or completeness. To the extent permitted by law, the State of Queensland disclaims all responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within and excludes all liability (including, without limitation, liability in negligence) for all expenses, losses, damages and costs that may be incurred.



The Queensland Government is committed to providing accessible services to Queenslanders of all cultural and linguistic backgrounds. If you have difficulty understanding this publication and need a translator, please call the Translating and Interpreting Service (TIS National) on 13 14 50 and ask them to telephone the Queensland Department of Transport and Main Roads on 13 74 68.

Disclaimer: While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing.

Executive summary

1. The Project

1.1 Background of Cape York

Cape York is one of Australia's most remote landscapes. This creates unique challenges for communities with limited or underdeveloped transport, telecommunications and power infrastructure. The monsoonal climate in Cape York is characterised by a warm-to-hot dry season, and a hot, humid, and intensive wet season. Extensive annual flooding during the wet season is typical for all watercourses on Cape York. This annual wet season and associated flooding is a major constraining factor on Cape York as it isolates communities and impacts many economic and social activities, including construction.

Cape York has an estimated population of 19,425 with 56.8 per cent of the population identifying as Aboriginal and/or Torres Strait Islander. Cape York residents are among the most disadvantaged in Queensland with most of the population living in the bottom fifth most disadvantaged local government areas (LGAs) in Australia. At the December quarter 2021, the unemployment rate in Cape York (excluding Aurukun¹) was 16 per cent which was more than triple the unemployment rate of the broader Queensland population.

1.2 Summary of Cape York Region Package

The Peninsula Developmental Road (PDR) is the main transport link within Cape York connecting Cape York to Cairns and the rest of Australia. Prior to the Cape York Region Package (CYRP), most of the PDR was unsealed, which made it highly vulnerable to damage and closures.

CYRP was a 5-year (FY14/15 to FY18/19) \$276 million program of works, jointly funded by the Australian and Queensland governments on an 80:20 Federal:State funding arrangement, to upgrade important infrastructure on Cape York Peninsula. The CYRP consisted of three subprograms:

- PDR sealing works (\$215.5 million)
- Endeavour Valley Road sealing works (\$10 million)
- Indigenous community infrastructure works (\$50.5 million).

The sealing projects under the PDR subprogram are shown in Figure 1.

¹ Estimates of Aurukun are not published due to accuracy concerns by the Department of Employment.

1.3.1 Evaluation Results

CYRP was evaluated against five criteria that measured the extent which the program addressed the goals outlined in the Project Logic Map:

- Criterion 1 – Facilitating economic growth
- Criterion 2 – Enhancing existing economic activities
- Criterion 3 – Improving health and wellbeing outcomes for Cape York residents and visitors
- Criterion 4 – Reducing adverse environmental impacts
- Criterion 5 – Enhancing community infrastructure.

1.4 Criterion 1 – Facilitating economic growth

Project Logic Map Goal (problem) 1 – Lack of efficient access to transport infrastructure (including road, barge, boat ramps and air strips) is limiting the economic potential of the Cape York regarding employment, training, tourism and industry growth.

The CYRP positively impacted the Cape York economy by facilitating economic growth. The program was successful in:

- Indigenous and non-Indigenous training and upskilling
- increasing Indigenous business participation
- increasing local industry participation
- enhancing industry development.

From October 2016, the CYRP PDR works were carried out under an agreement between the Queensland Government and traditional owners, the PDR Indigenous Land Use Agreement (ILUA). The ILUA sets out three key result areas (KRAs) related to local and Indigenous employment and training opportunities that were built into all construction contracts. The overall performance on the three KRAs is summarised in Table 1, which shows that all KRAs were exceeded.

Table 1: KRA performance for CYRP

KRA	Contract Target	Actual Achieved
KRA 1 – Indigenous and non-Indigenous training and upskilling	45,465 hours	152,000 hours
KRA 2 – Implementation of an Indigenous Economic Opportunities Plan	\$16.5 million	\$42.6 million
KRA 3 – Local industry participation	\$50 million	\$84 million

Source: TMR (2022). Submission to the Transport and Resources Committee: public works inquiry into the Peninsula Developmental Road (Laura to Welpa) project.

The CYRP was successful in increasing local and Indigenous employment and training opportunities and supporting local business development. Local councils also reported that the CYRP supported capacity building of local council staff and allowed council equipment to be hired to complete works. Local councils reported that they had leveraged the CYRP to invest in training for their employees such as certificate II and III in civil construction which enabled local councils to undertake more complex civil projects.

Contractors reported that the KRA targets were achievable and successfully helped local contractors remain competitive against other major contractors.

Under the CYRP program of works, indigenous-owned civil construction business Bama Services became the first local Indigenous business to ever achieve prequalification at Road 2, Bridge 2 (R2B2) levels and be awarded a contract in Cape York. Bama Services was initially subcontracted by RoadTek and gained their prequalification through the successful delivery of these pave and seal and culvert works. After gaining prequalification, Bama Services successfully tendered for two other PDR packages and have continued to work on larger packages of work in partnership with Downer EDI in CYRP Stage 2.

In addition to employment and local businesses, CYRP supported industry development, particularly in tourism. The value of tourism in Cook Shire increased significantly from a total value of \$29.77m in 2013/14 to a peak of \$58.59m in 2017/18. In 2019/20, the total tourism and hospitality revenue in Cook Shire was \$45.5m and the total value added was \$24.8m, which shows a contraction of the tourism industry owing largely to the impacts of COVID-19. Prior to the sealing of the PDR, 4WDs were the only passenger vehicles that could safely access most of Cape York. However, with the progressive sealing of the PDR, stakeholders have observed more conventional vehicles, caravans and trailers/boats travelling safely on the PDR and other Cape York roads. Local stakeholders reported that the increase in tourism has provided opportunities for tourism operators and accommodation providers in the region.

Overall, the performance of CYRP on Criterion 1 (Facilitating economic growth) was assessed on 16 performance standards (refer to Figure 2: Four performance standards were rated “excellent”, including local industry participation, training/upskilling hours and expansion of the ILUA, with a further 8 rated “good”. There were two performance standards that were rated “poor”. Firstly, the retention of new apprentices was a challenge owing to the contract-to-contract nature of the works. In response, TMR established the Cape York Indigenous Economic Working Group (CYIEWG) made up of representatives from local business, Government organisations and Traditional Owners. The CYIEWG meets bi-monthly for the purpose of formulating strategies to improve continuity of employment for residents of Cape York Indigenous communities. Secondly, the uptake of new agricultural activities was limited. While CYRP supported existing agricultural activities, external market conditions resulted in a lower-than-expected uptake of new agricultural activities.

Figure 2: Criterion 1 performance standards results

Excellent	Increase in local industry participation
	Increase in Indigenous business participation
	Increase in training/upskilling hours
	Expansion of CYRP ILUA in national approach
Good	Increase in number of local businesses (Indigenous and/or non-Indigenous) in the Cape York region that are TMR pre-qualified in the Cape York region
	Increase in new contracts outside TMR to local businesses (Indigenous and/or non-Indigenous) involved in the CYRP
	Number of new apprenticeships/trainees
	Scholarships
	Increase in Indigenous employment
	Increase in patronage
	Increase in agricultural output
	Increase in new types of tourism
Poor	Retention of new apprentices
	Increase in new agricultural activities
N/A at this time	Decrease in unemployment
	Increase in visitors for tourism

1.5 Criterion 2 – Enhancing existing economic activities

Project Logic Map Goal (problem) 2 – Unsealed sections of key roads in Cape York (including PDR, Endeavor Valley Road and community access roads) are reducing efficiency regarding freight, travel time, maintenance and reconstruction costs, road closures and safety.

The program was successful in:

- reducing vehicle operating costs
- reducing freight costs
- reducing road maintenance costs.

The progressive sealing of the PDR and access roads had significant benefits for reducing vehicle operating costs and freight costs. Road roughness is one of the most important determinants in vehicle operating costs. By improving road surface, CYRP reduced vehicle operating costs for residents, visitors and business. In Cape York, sea freight is typically significantly more expensive than land/road transportation. For example, the cost of transporting a typical single trailer (24 tonne) from Cairns to Weipa by land transportation was \$8,937 whereas by sea, transportation was \$25,794, which represents a potential cost saving of \$16,857 for using road transportation². The progressive sealing of the PDR and access roads provided more opportunities for communities and businesses to use freight via land rather than sea resulting in significant savings.

CYRP contributed to TMR’s goal to reduce maintenance costs on the PDR by maximising the length of seal. The unsealed sections of the PDR typically require reconstruction every three to five years. This extensive high-cost repair works is funded under the TMR Maintenance, Preservation and Environment (MPE) funding program and/or the National Disaster Relief and Recovery Arrangements (NDRRA) when the road is impacted by a declared event. Of the 173km of the PDR sealed under CYRP, only 300m has required repair under NDRRA in the three years post-construction.

Overall, the performance of CYRP on Criterion 2 (Enhancing existing economic activities) was assessed on nine performance standards (refer to Figure 3). There were three performance standards that were rated “excellent” including reduction in vehicle operating costs, reduction in freight costs and reduction in road maintenance costs.

Figure 3: Criterion 2 performance standards results

Excellent	Reduction in vehicle operating and maintenance costs
	Reduction in freight costs
	Reduction in road maintenance costs
Good	Increase in amount of maintenance on PDR (non-sealed sections) by Indigenous businesses
	Reduction in travel time
N/A at this time	Enhancement of cattle industry ³
	Reduction in price of goods ⁴
	Reduction in storage requirements for fuel and food ⁷

² Based on Tuxworth & Woods Carriers September 2022 for 24 tonne single trailer and Seaswift September 2022 for standard 20ft container from Cairns to Weipa

³ Data was requested but not available. However, the benefit of a reduction in price of goods is not expected to be fully realised until the full PDR is sealed.

⁴ Data was requested but not available. However, the benefit of a reduction in price of goods is not expected to be fully realised until the full PDR is sealed.

⁷ Data was requested but not available. However, the benefit of a reduction in storage requirement is not expected to be fully realised until the full PDR is sealed.

1.6 Criterion 3 – Improving health and wellbeing outcomes for Cape York residents and visitors

Project Logic Map Goal (opportunity) 3 – Increased access to community as well as reduced road closure can lead to improved health and social outcomes

CYRP was successful in improving the health and wellbeing of Cape York residents and visitors. The program was successful in:

- increasing road safety
- reducing isolation
- improving access to health services
- increasing cultural heritage knowledge sharing.

Through the PDR sealing works, CYRP has increased road safety on the PDR. From FY09/10 to FY13/14, prior to construction, the average number of accidents on the PDR sections 90C and 90D was 12 per year with a peak of 20 crashes in FY13/14. This reduced to an average of six per year through construction and post construction to FY21/22.

The progressive sealing of the PDR and access roads has reduced isolation by enabling residents to:

- safely travel to country to fulfil the aspiration to care for country
- drive to Cairns to stock up on supplies which is often preferred to flying because it is cheaper for families
- access health services in Cairns and other communities
- visit family members in other communities more readily.

Sealing the PDR and key sections of community access roads has facilitated the improved access for the mobile health services such as the dental and breast screen vans and improved road safety for health practitioners visiting primary health centres. Stakeholders from the local communities identified that the CYRP improved access to major health facilities in Weipa, Cooktown and Cairns, with the improved access specifically having social and cultural benefits in:

- locals being more likely to drive to Weipa for preventative medical services because of the reduced travel time
- family members being able to drive to provide support to patients in Cairns Hospital (as only one family member can fly with the patient)
- locals being able to safely transport the bodies of those who have passed away in Cairns back to their communities.

TMR supported cultural heritage sharing by undertaking cultural heritage surveys and requiring workers to complete a Cultural Heritage Induction. TMR was committed to cultural heritage surveys and monitoring throughout the project. Cultural heritage surveys were undertaken with Traditional Owners and used to inform the design. TMR also engaged 108 local Traditional Owners employed to provide over 10,000 hours of cultural heritage monitoring. TMR's Cultural Heritage Induction was designed to help workers understand their legislative responsibilities under the *Aboriginal Cultural Heritage Act 2003* and to raise awareness of local Aboriginal cultural traditions, languages and areas. Balkanu certified 242 workers across the CYRP PDR packages.

Overall, the performance of CYRP on Criterion 3 (Improving health and wellbeing outcomes) was assessed on 13 performance standards (refer to Figure 4). There were three performance standards that were rated "excellent" including reducing isolation, better access to health services and increase in cultural heritage knowledge sharing.

Figure 4: Criterion 3 performance standards results

Excellent	Increase in cultural heritage knowledge sharing
	Improvement in wellbeing of remote residents during wet season
	Better access to health services
Good	Increased road safety
	Increase in safe overtaking opportunities
	Enhanced opportunities for wealth creation
	Improvement in food security
	Increase in access to venues for community events
	Increase in uptake of preventative health services
	Improvement in Indigenous health outcomes
	Reduction in isolation for remote communities
	Reduced incidents due to night driving
	Increase in access to better food choices in local shops

1.7 Criterion 4 – Reducing adverse environmental impacts

Project Logic Map Goal (problem) 4 – Current conditions are causing adverse environmental impact regarding sediment runoff, dust, carbon emission and flood vulnerability.

The CYRP was successful in reducing adverse environmental impacts. CYRP reduced adverse environmental impacts by:

- reducing dust levels
- increasing revegetation
- reducing water usage
- improving scientific understanding in the region.

The volume of dust has been significantly decreased along roads which have now been sealed. The reduction in dust is clearly noticeable by comparing the thick dust coating roadside vegetation (up to 20-30m into the vegetation) on unsealed sections of the road to the now sealed section of the road. This reduction of dust has a number of environmental benefits including improved visibility for drivers which reduces the likelihood of vehicles impacting wildlife, improved growth for roadside vegetation without the dust impacts, and the reduction in airborne dust impacting residents and other motorists during travel.

During the early design phases of the CYRP, it was identified that the flora species *Cajanus mareebensis* was abundant across a number of the proposed project sites. Until August 2020 *Cajanus mareebensis* was listed as Endangered under both the *Environmental Protection Biodiversity and Conservation Act 1999* (EPBC) and the *Nature Conservation Act 1992* (NCA). The process of identifying the prevalence of *Cajanus mareebensis* as part of the Environmental Assessments for the CYRP lead TMR to approach the now Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) and the now Queensland Department of Environment and Science (DES) to change the status of the plant. This delisting was successful and *Cajanus mareebensis* has been removed from the EPBC completely and changed to Least Concern under the NCA.

Overall, the performance of CYRP on Criterion 4 (Reducing adverse environmental impacts) was assessed on 11 performance standards (refer to Figure 5). There were five performance standards that were rated “excellent” including improvement in water quality, reduction in dust levels, reduction in road materials lost each year, reduction in erosion, increase in revegetation and water usage during construction and operation.

Figure 5: Criterion 4 performance standards results

Excellent	Improvement in water quality
	Reduction in dust levels
	Reduction in road material lost each year
	Reduction in erosion
	Increase in revegetation
	Water usage during operation
Good	No net loss of habitat/vegetation
	No loss of terrestrial species
	No impact on fish or other aquatic species
	Improvement in open opportunities for scientific research

1.8 Criterion 5 – Enhancing community infrastructure

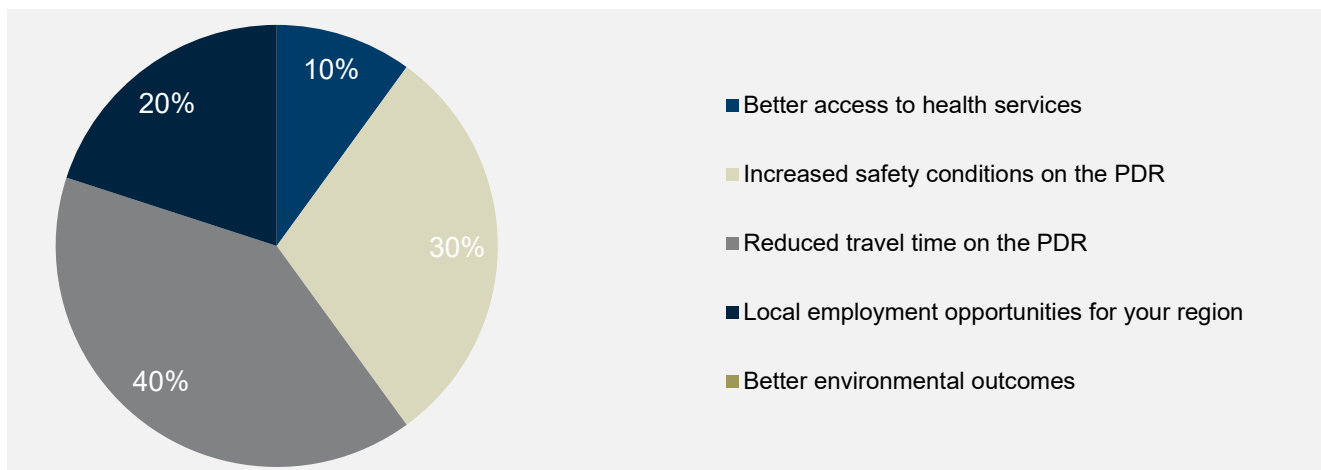
Project Logic Map Goal (opportunity) 5 – Increased amenity infrastructure (including water and sewerage treatment plants, solid waste management, refuse, footpath) can lead to improved economic, health and social, and environmental outcomes.

CYRP was successful in enhancing community infrastructure work through the Indigenous community infrastructure works subprogram. CYRP was successful in:

- increasing community satisfaction
- increasing access from community access roads.

All local council stakeholders agreed that CYRP improved community satisfaction. Local councils reported that the CYRP was critically important to the region and their communities across the economic, social and environmental considerations in Criteria 1 to 4. Representatives from each local council were asked to rank five key objectives of the program by importance to their region. The top priority objective for each local council is shown in Figure 6.

Figure 6: Top CYRP outcome for local councils



The Indigenous community infrastructure works program enhanced the benefits of the PDR upgrades by improving access roads and other critical infrastructure. The subprogram increased resilience for the access roads to the PDR from Aurukun, Kowanyama, Lockhart River, Napranum and Pormpuraaw and provided critical community infrastructure in Mapoon, NPA and Wujal Wujal.

Overall, the performance of CYRP on Criterion 5 (Enhancing community infrastructure) was assessed on four performance standards (refer to Figure 7) and all were rated “good”. The Indigenous community infrastructure works subprogram was an important complementary project to enhance the benefits of the major road sealing works.

Figure 7: Criterion 5 performance standards results

Good	Increase in access from community access
	Improvement in community satisfaction
	Improvement in access from boat/barge ramps
	Improvement in waste management

1.9 Conclusions

An evaluation of the social, environmental and economic impacts of the CYRP project was undertaken, which consisted of the PDR and Endeavour Valley Road sealing subprograms, as well as the Indigenous community infrastructure works subprogram. Overall, review findings were positive, with 85% of the project outcomes rated as 'good' or 'excellent' against the evaluation criteria. The CYRP program is a critical project to facilitate beneficial social, environmental and economic outcomes for the people of the Cape York region, as it ensures connection and access to some Queensland's most remote and disadvantaged communities, contributing to the overall growth and development of the Far North Queensland economy.

The overall findings from this SEEIA showed that, while CYRP resulted in a range of "excellent" or "good" social, environmental and economic impact ratings, the complete benefits realisation for the Cape York region may only be achievable once the PDR and community access roads are sealed in their entirety. Therefore, it is expected that further investigation may be required to determine the viability and timing of such works and that a committed funding source will be required to continue the realisation of benefits associated with the CYRP program of works.

1.10 Recommendations

While the evaluation demonstrated positive impacts of the CYRP, it also identified opportunities to improve future stages of the CYRP. The key recommendations, based on the findings of the evaluation, are summarised in Table 2.

Table 2: Recommendations

Recommendation 1: Long term employment, training and upskilling

Detailed requirement	Responsible entity
Develop an action plan to create long-term employment, training and upskilling opportunities for locally-based workforce, including during the wet season.	TMR, other Government departments, local councils and TCICA, contractors

Recommendation 2: Capture benefits realisation data in real time

Detailed requirement	Responsible entity
Integrate ongoing monitoring and reporting frameworks so that benefits realisation data can be captured in real time and referenced for future stages of work.	TMR

Recommendation 3: Stakeholder engagement regarding project priorities

Detailed requirement	Responsible entity
Develop an action plan to mitigate unexpected negative impacts. For example, while the CYRP works undertook a segmented approach to align with local employment and training strategies, some stakeholders questioned the prioritisation, timing and sequencing of the upgrades. A mitigation to this misalignment to apply for future stages could involve a community wide consultation or awareness campaign, which is transparent about the timing and expected duration of works.	TMR

Recommendation 4: Environmental inspections

Detailed requirement	Responsible entity
Undertake a visual inspection of environmental conditions.	TMR, qualified environmental engineer

Contents

Copyright	1
Executive summary	2
1. The Project	2
1.1 Background of Cape York	2
1.2 Summary of Cape York Region Package	2
1.3 This Evaluation	3
1.3.1 Evaluation Results	4
1.4 Criterion 1 – Facilitating economic growth	4
1.5 Criterion 2 – Enhancing existing economic activities	6
1.6 Criterion 3 – Improving health and wellbeing outcomes for Cape York residents and visitors	7
1.7 Criterion 4 – Reducing adverse environmental impacts	9
1.8 Criterion 5 – Enhancing community infrastructure	10
1.9 Conclusions	11
1.10 Recommendations	12
Contents	13
Glossary of terms	16
2. Introduction	18
2.1 Purpose of chapter	18
2.2 Project background	18
2.2.1 PDR sealing works	18
2.2.2 Endeavour Valley Road sealing works	19
2.2.3 Indigenous community infrastructure works	20
2.3 Future works	22
2.4 Report structure	22
3. Current state of the Cape York region	23
3.1 Remote Cape York	23
3.1.1 Geography and climate	23
3.1.2 Transport infrastructure	23
3.1.3 Telecommunications and power	23
3.2 Population and employment	24
3.3 Economy and industry base	24
3.4 Annual Average Daily Traffic (AADT) for PDR	29
4. Methodology	33
4.1 Purpose of chapter	33
4.2 Project logic mapping	34
4.3 Evaluation framework	38
4.4 Data collection techniques	38
4.4.1 Primary data	39

4.4.2	Secondary data	39
4.5	Existing project data	40
4.6	Consultation with internal and external stakeholders	42
5.	Summary of findings	45
5.1	Purpose of chapter	45
5.2	Criterion 1 – Facilitating economic growth	45
5.2.1	Employment and training opportunities	46
5.2.2	Local business development	49
5.2.3	Industry development – enhancement of agricultural and pastoral industries	50
5.2.4	Industry development – enhancement of tourism industry	50
5.2.5	Enhancement of other industries	52
5.2.6	Summary – Facilitating economic growth	53
5.3	Criterion 2 – Enhancing existing economic activities	53
5.3.1	Improving freight efficiency	53
5.3.2	Reducing vehicle operating and maintenance costs	54
5.3.3	Reducing travel time	55
5.3.4	Reducing road maintenance and reconstruction costs	55
5.3.5	Increasing productivity by reducing damage to commodities	56
5.3.6	Summary – Enhancing existing economic activities	56
5.4	Criterion 3 – Improving health and wellbeing outcomes for Cape York residents and visitors	56
5.4.1	Access to health services	57
5.4.2	Isolation for remote communities	57
5.4.3	Road safety	58
5.4.4	Food security and storage requirements	59
5.4.5	Flood immunity	60
5.4.6	Education experience	61
5.4.7	Cultural heritage awareness	61
5.4.8	Access to community activities	63
5.4.9	Summary – Health and wellbeing	63
5.5	Criterion 4 – Reducing adverse environmental impacts	64
5.5.1	Environmental impacts	64
5.5.2	Summary – Environmental impacts	66
5.6	Criterion 5 – Enhancing community infrastructure	66
5.6.1	Improved roads	67
5.6.2	Improved barge and waste facilities	67
5.6.3	Improved community satisfaction	68
5.6.4	Summary – Enhancing indigenous communities	68
	Assessing outcomes	69
5.7	Purpose of chapter	69
5.8	Approach	69
5.9	Quantitative outcomes	69
5.10	Qualitative outcomes	72
5.11	Summary of chapter	73

6.	Conclusions and recommendations	75
6.1	Purpose of chapter	75
6.2	Conclusions	75
6.3	Recommendations	76
6.4	Actions proposed	77

Glossary of terms

Term	Definition
AADT	Annual Average Daily Traffic
CHMA	Cultural Heritage Management Agreement
CHO	Cultural Heritage Officer
CIAF	Cairns Indigenous Art Fair
CYIEWG	Cape York Indigenous Economic Working Group
CYLC	Cape York Land Council
CYPLUS	Cape York Peninsula Land Use Strategy
CYPTR	Cape York Peninsula Tenure Resolution Program
CYRP	Cape York Region Package
CYRP2	Cape York Region Package Stage 2
DAF	Department of Agriculture and Fisheries
DSDILGP	Department of State Development, Local Government, Infrastructure and Planning
DRDWM	Department of Regional Development, Manufacturing and Water
EAR	Environmental Assessment Report
EDR	Environmental Design Report
EMS	Environmental Management Strategy
GRP	Gross regional product
IEPP	Indigenous Economic Participation Plan
ILUA	Indigenous Land Use Agreement
KRA	Key Result Areas
LGA	Local Government Area
NPA	Northern Peninsula Area

Term	Definition
NPARC	Northern Peninsula Area Regional Council
PDR	Peninsula Developmental Road
PLM	Project Logic Map
R2B2	Road 2, Bridge 2
RDA	Regional Development Australia
ROSI	Roads of Strategic Importance
RTAW	Rio Tinto Aluminium Weipa
SEEIA	Social, Environmental and Economic Impact Assessment
TCICA	Torres Cape Indigenous Council Alliance (formerly the Cape Indigenous Mayors Alliance)
TCHHS	Torres and Cape Hospital and Health Service
TMR	Department of Transport and Main Roads
TTNQ	Tourism Tropical North Queensland
VOC	Vehicle operating costs

2. Introduction

2.1 Purpose of chapter

In 2022, a Social, Environmental and Economic Impact Assessment (SEEIA) for Stage 1 of the Cape York Region Package (CYRP) was conducted. The SEEIA Framework was developed to allow TMR to evaluate the broader outcomes and impacts of transport projects in Queensland, including projects in rural and remote regions. This SEEIA will be a critical tool for TMR to articulate the benefits of further investment in important regional and remote infrastructure. This Evaluation Report sets out the outcomes of the SEEIA for CYRP.

2.2 Project background

CYRP was a five-year (FY14/15 to FY18/19) \$276 million program of works jointly funded by the Australian and Queensland governments to upgrade important infrastructure on Cape York Peninsula. The CYRP consisted of three subprograms:

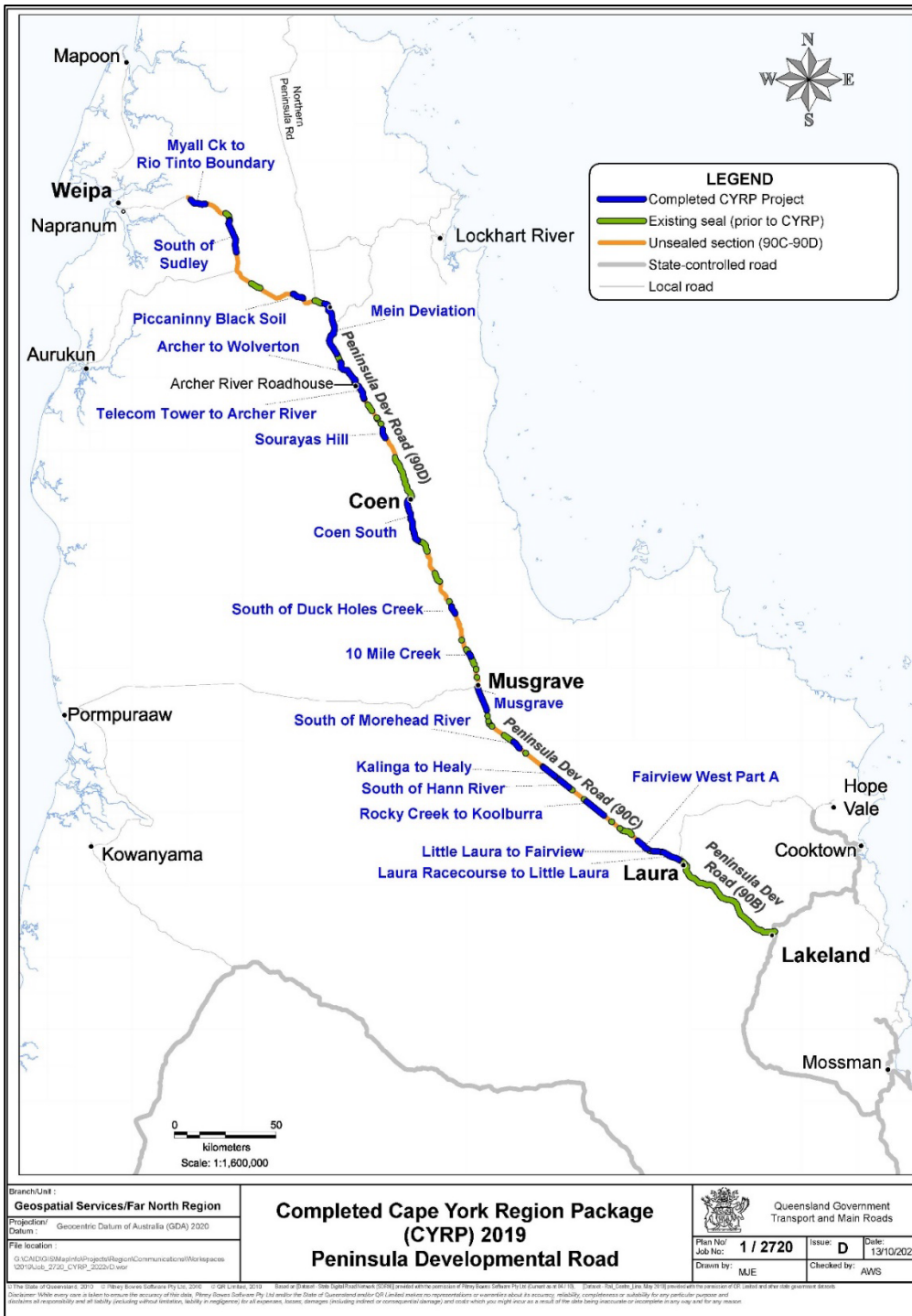
- Peninsula Developmental Road (PDR) sealing works (\$215.5 million)
- Endeavour Valley Road sealing works (\$10 million)
- Indigenous community infrastructure work (\$50.5 million).

2.2.1 PDR sealing works

The PDR is a 571-kilometre-long road between Lakeland in the south and Weipa in the north, with 527 kilometres of road within Cook Shire Council and the remaining 44 kilometres within the Rio Tinto lease boundary to Weipa. The PDR is the principal transport route in and out of Cape York with direct connection to Coen, Musgrave and Laura along its route and connection via local access roads to other local communities such as Pormpuraaw, Aurukun and Lockhart River. It is widely used by residents, freight operators and tourists, and serves important roles in community health and wellbeing, logistics, and supports the economic prosperity of the Cape York region. Until 2014, most of this regionally critical road was unsealed.

The PDR sealing works subprogram was a \$215.5 million program of works to seal 173 kilometres of the PDR between Laura and the Rio Tinto lease boundary south of Weipa (TMR road codes 90C – Peninsula Developmental Road (Laura – Coen) and 90D – Peninsula Developmental Road (Coen to Weipa)). The PDR sealing works subprogram is illustrated in Figure 8. Construction of the PDR projects under the subprogram commenced in mid-2014 and was completed in late 2019.

Figure 8: Completed CYRP PDR program



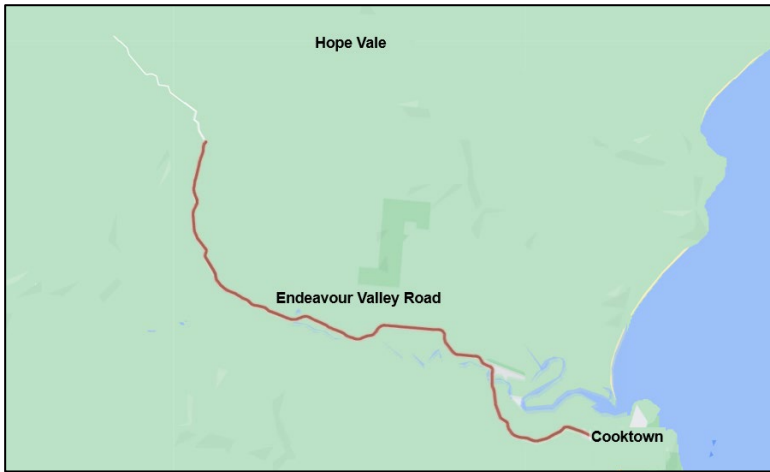
Source: TMR – Projects, Cape York Region Package

2.2.2 Endeavour Valley Road sealing works

The Endeavour Valley Road is a 34.8-kilometre-long road that connects Hope Vale to neighbouring Cooktown, as shown in Figure 9. Hope Vale is a remote Indigenous community with a population of more than 1100 people, administered by the Hope Vale Aboriginal Shire Council. The Endeavour Valley Road provides access for local residents and visitors to a range of tourism and industry businesses as well as the Cooktown airport. For Hope Vale residents and visitors, Endeavour Valley Road also provides access to health and education centres in Cooktown.

The Endeavour Valley Road sealing works subprogram was a \$10 million package, delivered over four years, to seal sections of the road between Cooktown and Hope Vale. The subprogram aimed to provide jobs and training opportunities to local communities and Indigenous groups including upskilling Hope Vale Aboriginal Shire Council in road building techniques⁵.

Figure 9: Endeavour Valley Road map



Source: Google map data 2022

2.2.3 Indigenous community infrastructure works

The Indigenous community infrastructure works subprogram was a \$50.5 million package which delivered community infrastructure works selected by representatives from eight discreet councils through the Torres Cape Indigenous Council Alliance (TCICA) (formerly the Cape Indigenous Mayors Alliance). Projects delivered under this subprogram involved upgrades and improvements to key infrastructure – roads, barge and boat ramps, water and sewerage treatment plants – in remote indigenous local government council areas in Cape York. The benefits of the PDR and Endeavour Valley Road sealing projects were complemented by the indigenous community infrastructure works to support a whole of network approach. The locations of the projects are shown in Figure 10.

Figure 10: Indigenous community infrastructure subprogram key locations



⁵ TMR (2020). Cape York Region Package. Accessed at <https://www.tmr.qld.gov.au/projects/cape-york-region-package>

The final community infrastructure works under this subprogram were completed in late 2020. A list of projects in each location is provided in Table 3.

Table 3: Indigenous community infrastructure works

Location	Projects under Indigenous community infrastructure works
Aurukun	<ul style="list-style-type: none"> • Aurukun Access Road drainage, pavement and sealing works
Kowanyama	<ul style="list-style-type: none"> • Topsy Creek Access Road causeway No. 1, 2, 3 and 4 • Topsy Creek Access Road pavement and sealing works • Topsy Creek barge ramp and access road
Lockhart River	<ul style="list-style-type: none"> • Airport bridge upgrade • Portland Roads Road drainage, pavement and sealing works
Mapoon	<ul style="list-style-type: none"> • Wheeler Street pavement construction and sealing works • Cullen Point Road pavement construction and sealing works • Hudson Street pavement construction and sealing works • Thuungu Road pavement construction and sealing works • Mapoon airstrip pavement construction, sealing works and fencing
Napranum	<ul style="list-style-type: none"> • Napranum Access Road drainage, pavement and sealing works • Foreshore footpath and traffic improvements • Boat ramp construction • Community footpath construction • Ruchook Cultural Grounds Access Road construction and sealing works
NPA	<ul style="list-style-type: none"> • Injinoo-Ferry Road Floodway (CH1940) upgrade • Injinoo-Ferry Road CH32000 – CH33500 pavement construction and sealing works • Burster Creek culvert upgrade • Injinoo-Ferry Road CH000 – CH1770 upgrade • Injinoo-Ferry Road CH35000 – 55000 pavement construction and sealing works • Seisia jetty refurbishment
Porpuraaw	<ul style="list-style-type: none"> • Strathgordon Road Site 44, 58, 60 and 48 elevate formation and install concrete floodway and medium culverts • Strathgordon Road – Site 42 elevate formation and install concrete floodway • Strathgordon Road CH39-41 2km stabilisation, sealing and drainage
Wujal Wujal	<ul style="list-style-type: none"> • China Camp Road concrete road construction • SCADA sewerage system • Recycle centre • Watermain crossing • Pump station sewer • SCADA Water • Water filtration system membrane • Boat ramp

2.3 Future works

TMR is currently completing Stage 2 of the CYRP (CYRP2) which includes:

- \$190 million to progressively seal priority sections of the PDR
- \$47.5 million to progressively seal priority sections of community access roads linking to the PDR.

The funding contributions from the Australian and Queensland governments are \$190 million and \$47.5 million, respectively. As part of the Australian Government's 2022 budget, a further \$68.5 million was allocated to the Roads of Strategic Importance (ROSI) Cooktown to Weipa Corridor program (PDR subprogram of CYRP2). The Queensland Government has committed \$17.1 million towards this as a continuation of the current 80:20 Federal:State basis funding arrangement. At the completion of CYRP2, there is expected to be 145 kilometres of the PDR to be sealed. TMR has indicated that there are multiple future stages that are yet to receive funding commitments from the Australian and Queensland governments. The SEEIA will be critical in identifying the social, economic and environmental impacts from the initial CYRP funding which will support the case for further funding.

2.4 Report structure

This Evaluation Report has been developed in accordance with the guidelines outlined in TMR's SEEIA Framework and is structured as follows:

- **Chapter 1: Introduction** which defines what is being evaluated, the purpose of the project and project background and purpose of the evaluation
- **Chapter 2: Current state of the Cape York region** which summarises the geography and economy in Cape York including population, employment and output and the traffic data for the PDR
- **Chapter 3: Methodology** which outlines the approach to undertaking the SEEIA in accordance with TMR's SEEIA Framework, including the process of consultation with internal and external stakeholders, a summary of data collection techniques and relevant assumptions and limitations
- **Chapter 4: Summary of findings** which summarises the findings from the stakeholder consultation and research
- **Chapter 5: Assessing outcomes** which outlines the qualitative and quantitative ratings of the evaluation
- **Chapter 6: Conclusions and recommendations** which includes any recommendations and actions proposed for ongoing monitoring and evaluation, particularly for future stages of the CYRP.

3. Current state of the Cape York region

3.1 Remote Cape York

The Cape York region considered in this report comprises of the local government areas (LGAs) of Aurukun, Cook, Hope Vale, Kowanyama, Lockhart River, Mapoon, Napranum, Northern Peninsula Area, Pormpuraaw, Wujal Wujal Shire and Weipa Town. Cape York is one of Australia's most remote landscapes which causes unique challenges for communities. Cape York residents are amongst the most disadvantaged in Queensland with most of the population living in the bottom fifth most disadvantaged LGAs in Australia⁶.

3.1.1 Geography and climate

Cape York land is mostly flat and approximately half the area is used for grazing cattle. The climate in Cape York is characterised by a warm-to-hot dry season, and a hot, humid, and intensive wet season. This annual monsoon season is a major constraining factor on Cape York as it isolates communities and impacts many economic and social activities in the region. Extensive annual flooding during the wet season is typical for all watercourses on Cape York⁷.

3.1.2 Transport infrastructure

The PDR is the main road transport link within Cape York and connecting Cape York to Cairns and the rest of Australia. Prior to CYRP, most of the PDR was unsealed which made it highly vulnerable to damage and closures. The unsealed roads can deteriorate quickly with wet weather and heavy rain, requiring regular maintenance and reconstruction to keep the road open. Road closures disrupt freight routes and isolate many communities and property for up to five months a year. Air travel and freight can also be disrupted because of damage to airstrips and/or storm activity. Road construction cannot be undertaken during the annual wet season which results in a shorter annual construction period of approximately five to seven months.

3.1.3 Telecommunications and power

Limited and/or unreliable telecommunications contributes to the remoteness in Cape York for residents and visitors. Mobile phone and internet coverage is available in most local communities; however, beyond the towns, there is little coverage and satellite phones are required. In May 2022, the Government announced that Lockhart

⁶ Australia Bureau of Statistics (2016). IRSD. Accessed at <https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2033.0.55.001~2016~Main%20Features~IRSAD%20Interactive%20Map~16>

⁷ House of Representatives Economics (2010). Chapter 2 Cape York – Context and Consultation. Accessed at https://www.aph.gov.au/parliamentary_business/committees/house_of_representatives_committees?url=economics/wildrivers/report/chapter2.htm

River, Seisa and Cooktown would receive major updates to telecommunications infrastructure in their respective communities under the Australian Government's Regional Connectivity Program. Federal Regional Communications Minister stated, "As the last two years have shown, digital connectivity is an essential part of how we work, learn, stay healthy and remain in contact with loved ones and also to manage, adapt to and recover from an increasing range of natural disasters."

The majority of Cape York communities rely on major diesel power generation systems with only the townships in the far south-east of the region connected to grid power⁸.

3.2 Population and employment

Cape York has an estimated population of 19,425 with 56.8 per cent of the population identifying as Aboriginal and/or Torres Strait Islander⁹. At the December quarter 2021, the unemployment rate in Cape York (excluding Aurukun¹⁰) was 16 per cent which was more than triple the unemployment rate of the broader Queensland population¹¹. Within the Cape York region, Pormpuraaw had the highest unemployment rate of 54.8 per cent while Weipa had the lowest unemployment rate of 1.9 per cent².

3.3 Economy and industry base

In 2021, TCICA, which represents 10 of Queensland's 16 Indigenous local governments, as well as Torres Shire Council, Cook Shire Council and Weipa Town Authority, developed economy and industry sector profiles. The profiles were modelled by Dr Shashi Karunanethy, a consultant economist who works with the University of Melbourne. This data modelling was commissioned to provide a current baseline gross regional product (GRP) for the TCICA region and at the individual community level in the absence of any current GRP data for the region. The Torres and Cape York region generated GRP of \$1.74 billion in 2021 which represented 0.5 per cent of Queensland's GRP. The gross value-add for each LGA in the region is shown in Figure 11. Cook Shire Council, which is the largest LGA in the region by land area, contributes to over 35 per cent of the TCICA economy. Other populous LGAs such as Weipa and NPA, each contribute more than 5 per cent of the TCICA region's GRP. The CYRP sealing works are critical to connecting local council areas in the Cape York region to major economic centres to the south.

⁸ House of Representatives Economics (2010). Chapter 2 Cape York – Context and Consultation. Accessed at https://www.aph.gov.au/parliamentary_business/committees/house_of_representatives_committees?url=economics/wildrivers/report/chapter2.htm

⁹ Queensland Government's Statistician's Office (2021). *Queensland Regional Profiles*. Accessed at <https://statistics.qgso.qld.gov.au/qld-regional-profiles>

¹⁰ Estimates of Aurukun are not published due to accuracy concerns by the Department of Employment.

¹¹ Queensland Government's Statistician's Office (2021). *Queensland Regional Profiles*. Accessed at <https://statistics.qgso.qld.gov.au/qld-regional-profiles>.

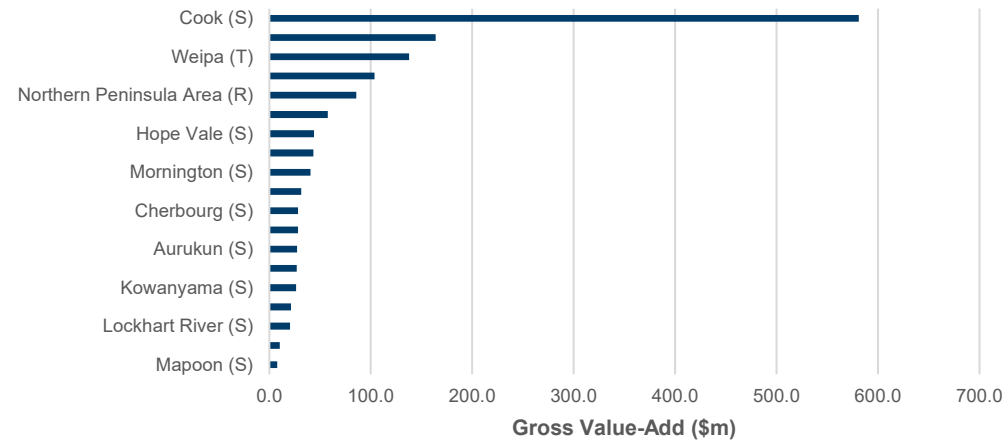


Figure 11: Gross value-add by council

Source: Shashi Karunanethy (2022), using a Flegg Location Quotient (FLQ) regional economic input-output model. Commissioned by the Torres Cape Indigenous Council Alliance.

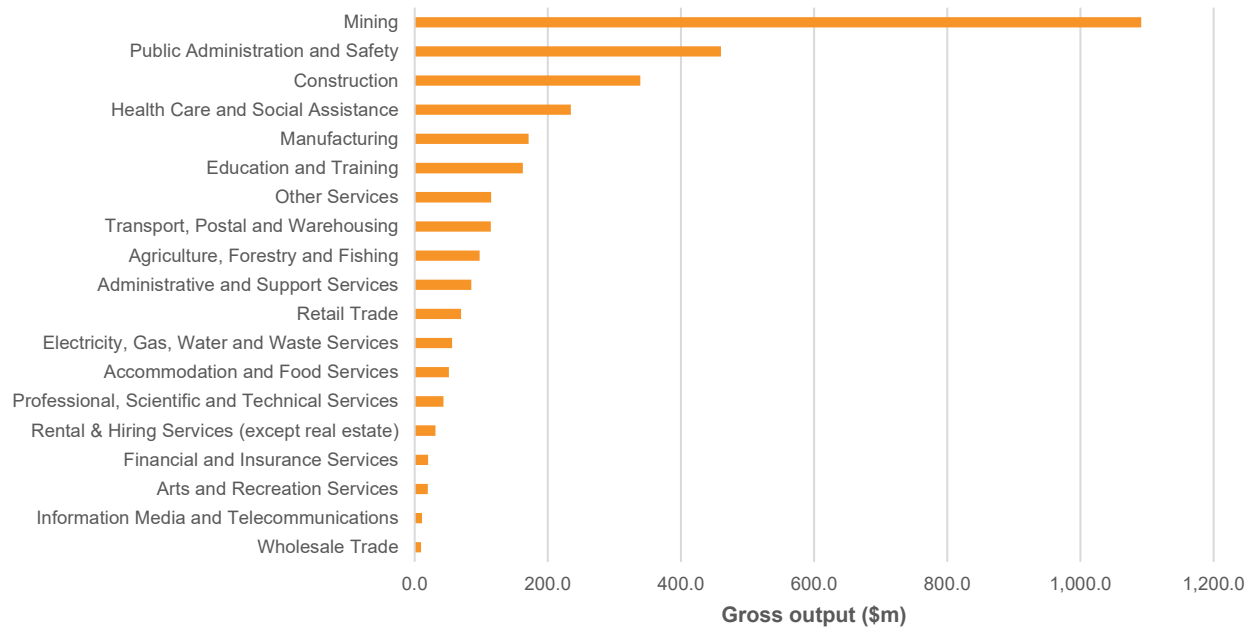
As shown in Figure 12 the Torres and Cape economy is driven by key industries:

- mining
- public administration and safety
- construction
- health care and social services
- manufacturing
- education and training
- other services
- transport, postal and warehousing
- agriculture, forestry and fishing.

Mining alone contributes 34 per cent of gross output, with the top six industries contributing over 75 per cent of gross output. The sealing of the PDR and local access roads as part of CYRP is key to the industries in the region as they are critical for transportation of goods and access for employees to places of employment.

Figure 12: Gross output by industry

Methodology



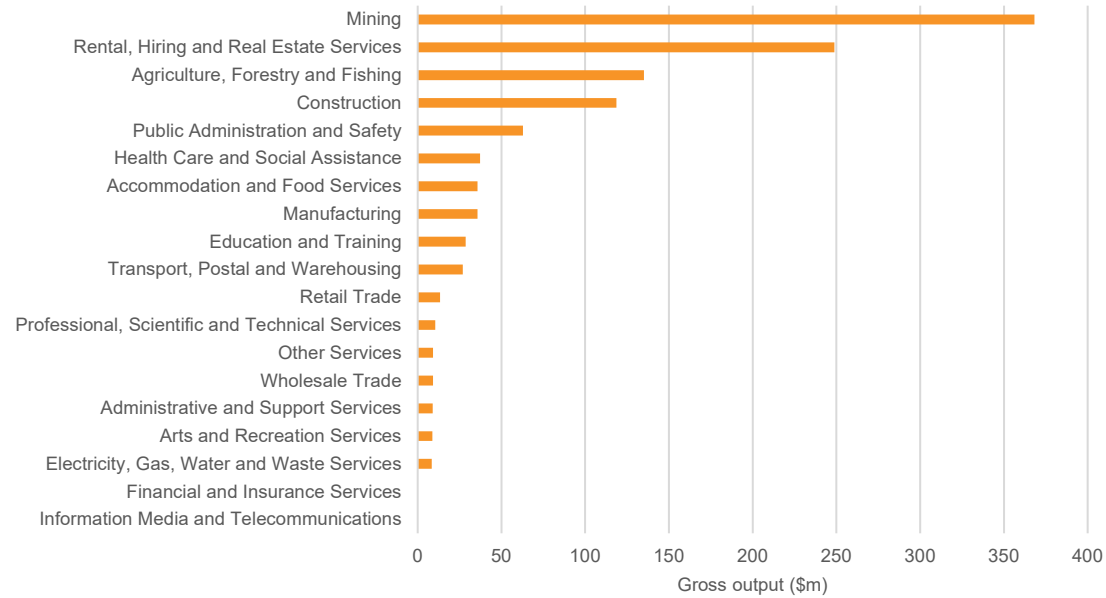
Source: Shashi Karunanethy (2022), using a Flegg Location Quotient (FLQ) regional economic input-output model. Commissioned by the Torres Cape Indigenous Council Alliance.

Cook Shire generated GRP of \$0.5 billion in the year ending 2021 which represented 0.13 per cent of Queensland's Gross State Product¹². In Cook Shire, mining had the largest output by industry, generating \$368 million in 2020/21. The output by industry is shown in Figure 13.

Figure 13: Cook Shire Gross output by industry 2021

¹² .id (informed decisions) (2021). *Cook Shire Council*. Accessed at <https://economy.id.com.au/cook>

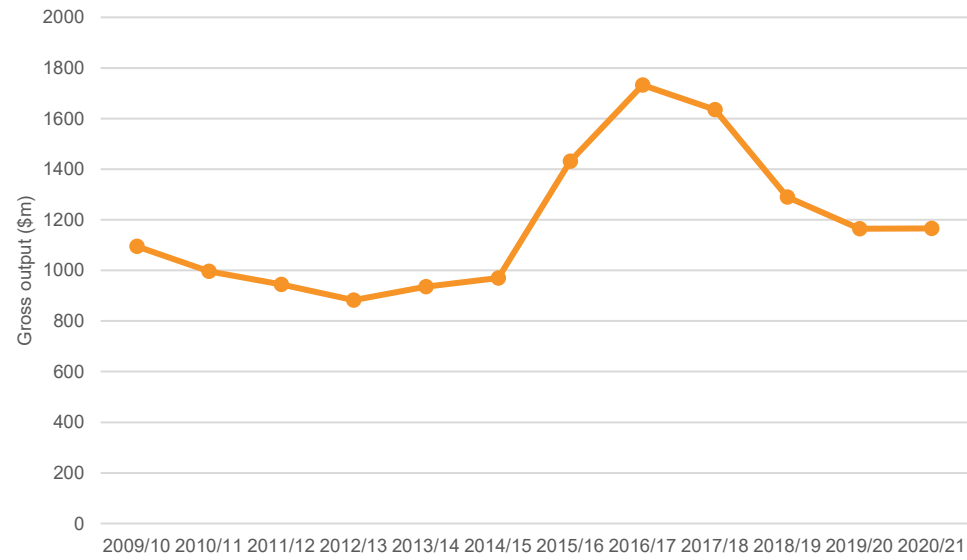
Methodology



Source: .id (informed decisions) (2021). Cook Shire Council. Accessed at: <https://economy.id.com.au/cook>

The gross output in Cook Shire is highly correlated with the trends in the mining industry. Over the past 10 years there was a peak in mining from 2015-2018. The gross output has also been impacted by COVID-19 and the associated closures and business changes. The gross output over time is shown in Figure 14.

Figure 14: Cook Shire gross output over time

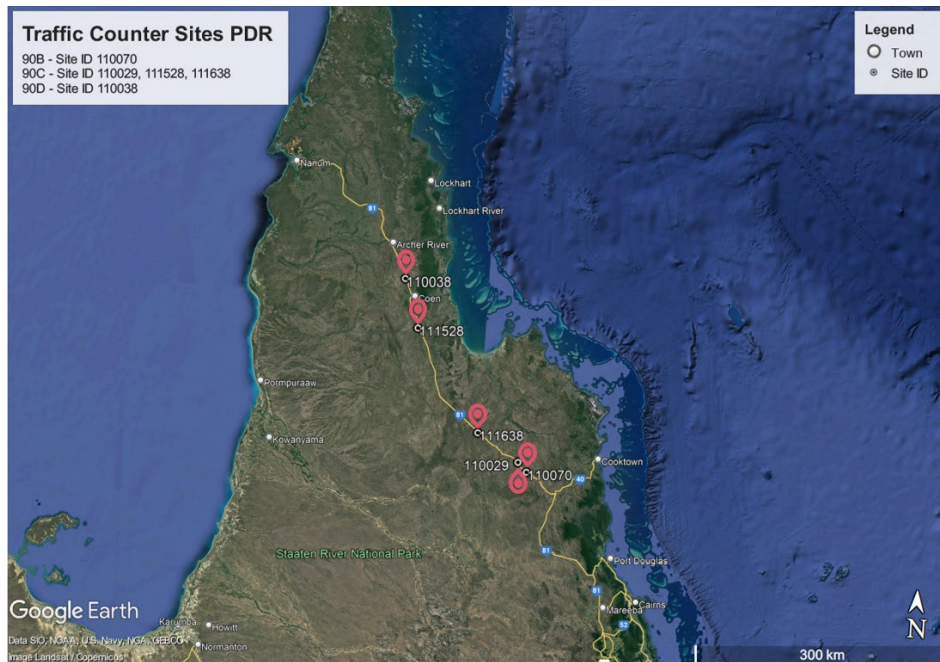


Source: .id (informed decisions) (2021). Cook Shire Council. Accessed at: <https://economy.id.com.au/cook>

3.4 Annual Average Daily Traffic (AADT) for PDR

The PDR is the key road access throughout the Cape York region. TMR collected AADT at five traffic counter sites along the PDR from south of Laura to north of Coen as shown in Figure 15. There are currently no traffic counters near Weipa nor on Bamaga and Aurukun Roads which residents and visitors are likely to travel in and out of.

Figure 15: Traffic Counter Sites PDR



Source: TMR (2022)

In 2021 (post CYRP construction), traffic volumes on the PDR ranged between 159 AADT and 277 AADT. The AADT at each traffic counter sites on the PDR from pre-construction 2014 to post-construction 2021 are shown in Figure 16 to Figure 20. The traffic volumes were disrupted by COVID-19 when much of Cape York was closed owing to Australian Government emergency restrictions on entry to remote Aboriginal and Torres Strait Islander communities ('designated areas') made under the Biosecurity Act 2015 (Cth). However, the AADT figures generally show a recovery to pre-COVID levels in 2021, particularly for light/private vehicles which may be a result of increased tourism.

Figure 16 and Figure 17 shows the AADT for traffic counter sites 110070 and 110029 near Laura where the roads are fully sealed to Cairns. At counter site 110070 there was a general increase in AADT from 2017.

Figure 16: AADT traffic counter site 110070 over time

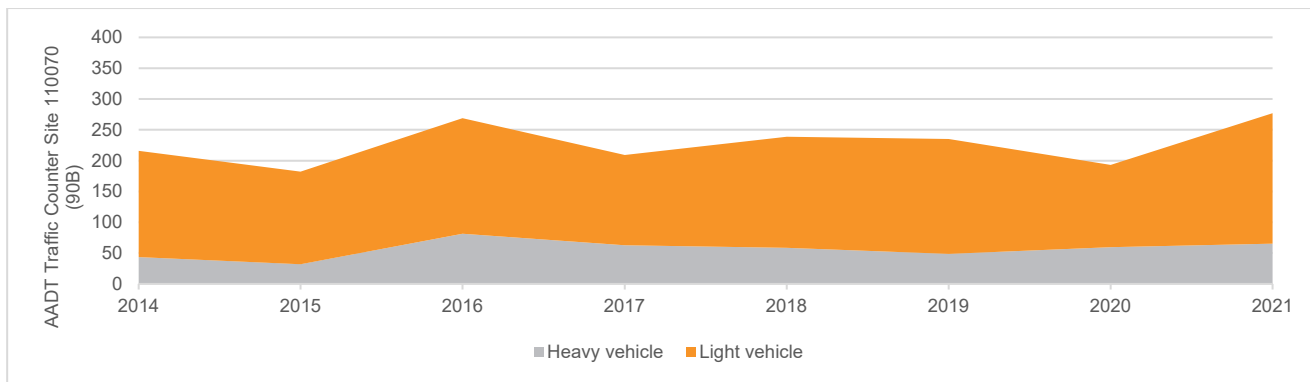
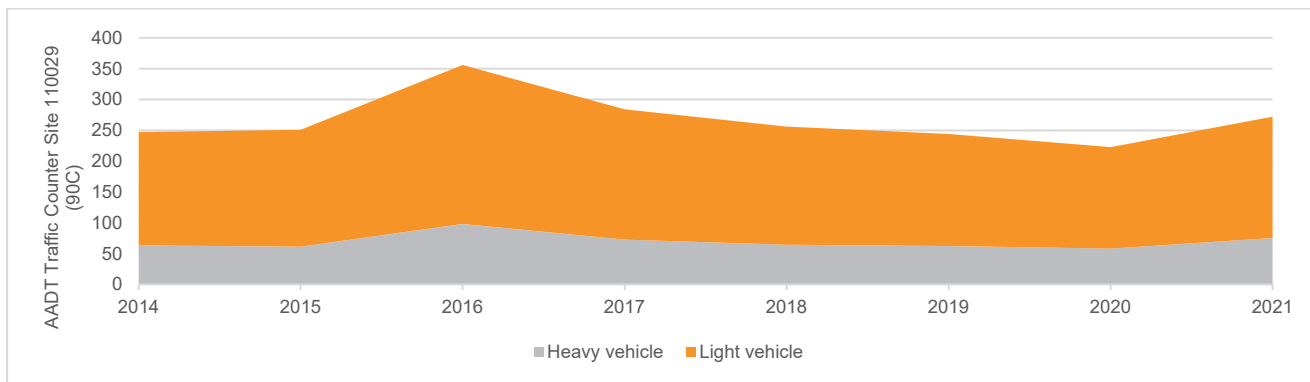


Figure 17: AADT traffic counter site 110029 over time



The AADT for traffic counter sites 111638 (north of Laura), 111528 (south of Coen) and 110038 (north of Coen) showed a general increase in AADT from 2017 (excluding 2020) as shown in Figure 18, Figure 19 and Figure 20. However, the overall traffic volumes were lower than the counter sites in Laura. A contributing cause

to the traffic volume is that beyond Laura parts of the PDR remain unsealed and the PDR is still subject to road closures during the wet season and can be cut off from Cairns.

Figure 18: AADT traffic counter site 111638 over time

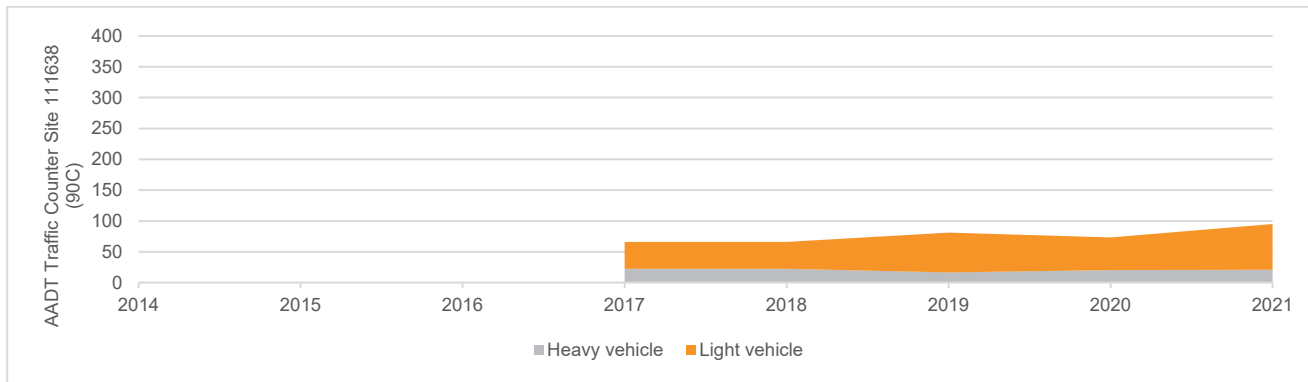


Figure 19: AADT traffic counter site 111528 over time

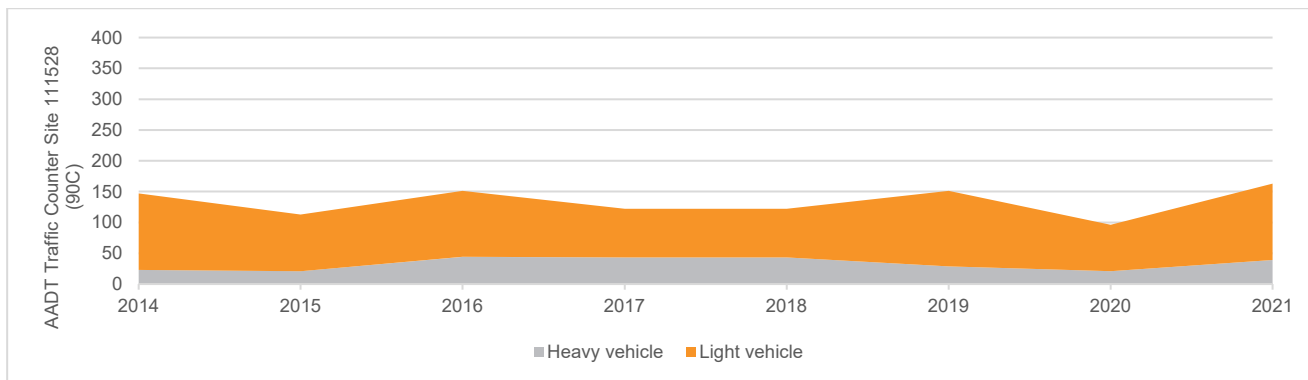
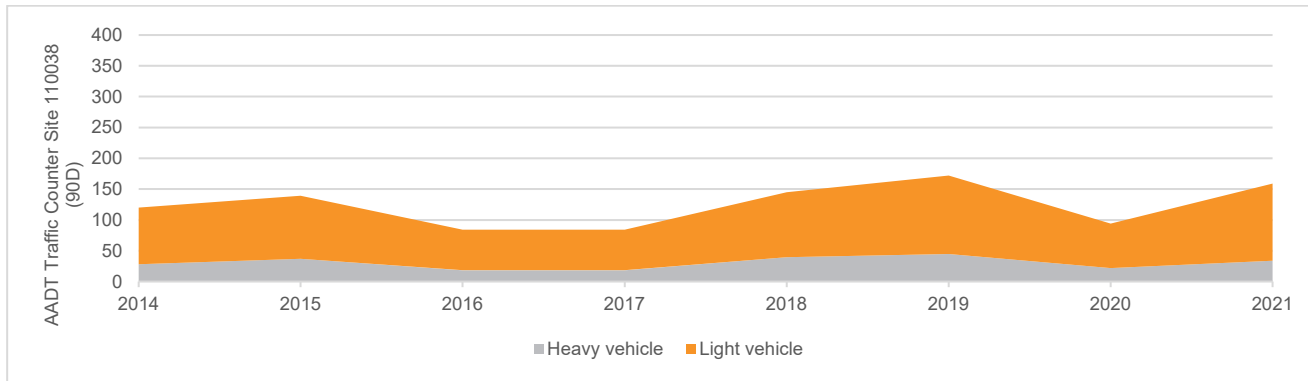


Figure 20: AADT traffic counter site 110038 over time

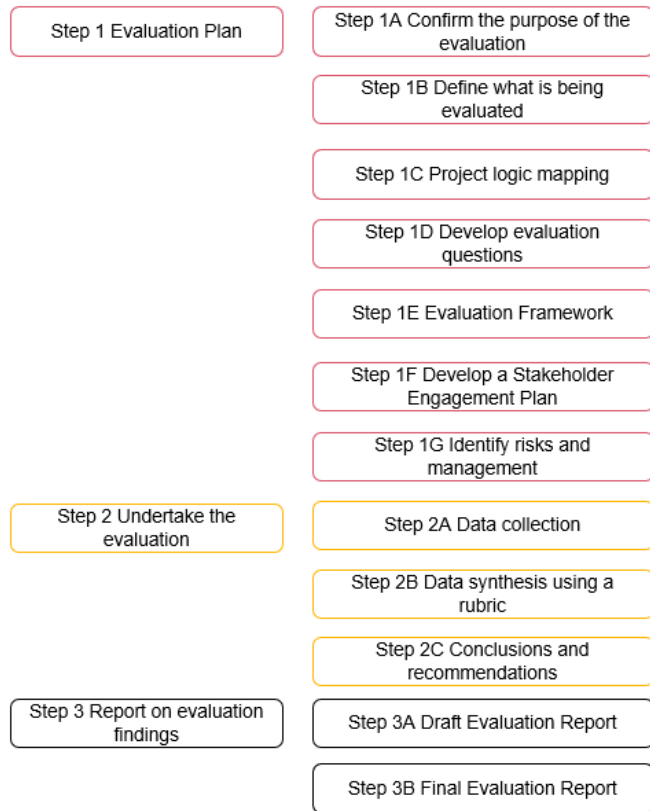


4. Methodology

4.1 Purpose of chapter

The purpose of this chapter is to detail the methodology for the evaluation in accordance with TMR's SEEIA Framework. The overall SEEIA Framework methodology is outlined in Figure 21.

Figure 21: SEEIA Framework methodology



Source: TMR SEEIA Framework

In Step 1, an Evaluation Plan for the SEEIA that addressed Step 1A to 1G was developed. The Evaluation Plan included the Stakeholder Engagement Plan and evaluation framework for the analysis. In Step 2, stakeholder engagement was undertaken from May to August 2022. The purpose of this report is to summarise Step 2 and Step 3.

This chapter summarises the key steps in the SEEIA process for the purposes of undertaking the evaluation. These are:

- project logic mapping
- evaluation framework
- data collection techniques
- existing project data
- consultation with internal and external stakeholders.

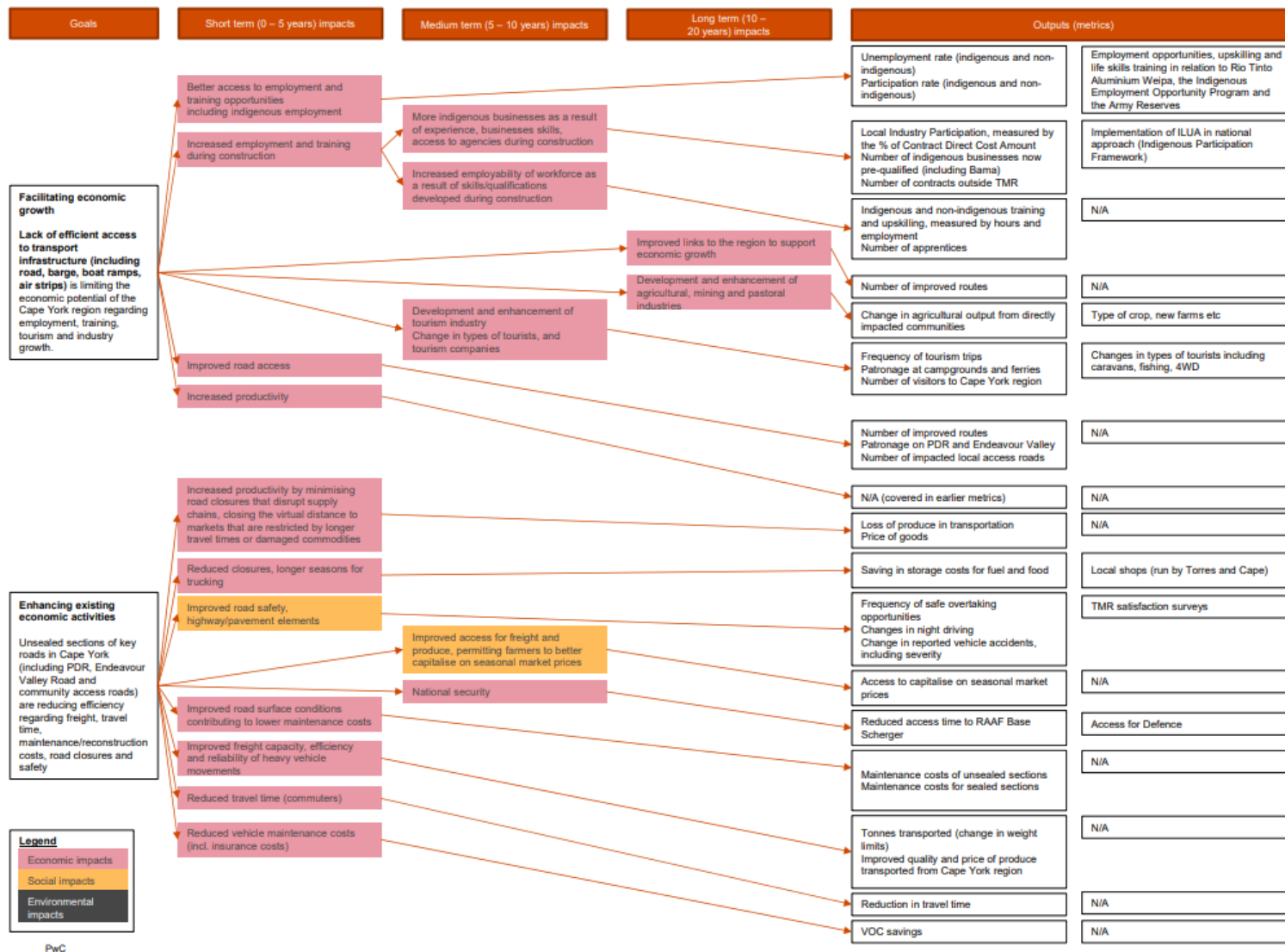
4.2 Project logic mapping

A key step of TMR's SEEIA Framework was the development of a Project Logic Map (PLM) to clearly articulate the project's outcomes and impacts. The PLM provided the foundation of the Evaluation Plan and stakeholder questions. On 23 March 2022, a PLM workshop was held that was attended by TMR officers, representing a range of sectors and disciplines, including:

- transport
- land use planning
- environment
- economic development
- communications
- project management.

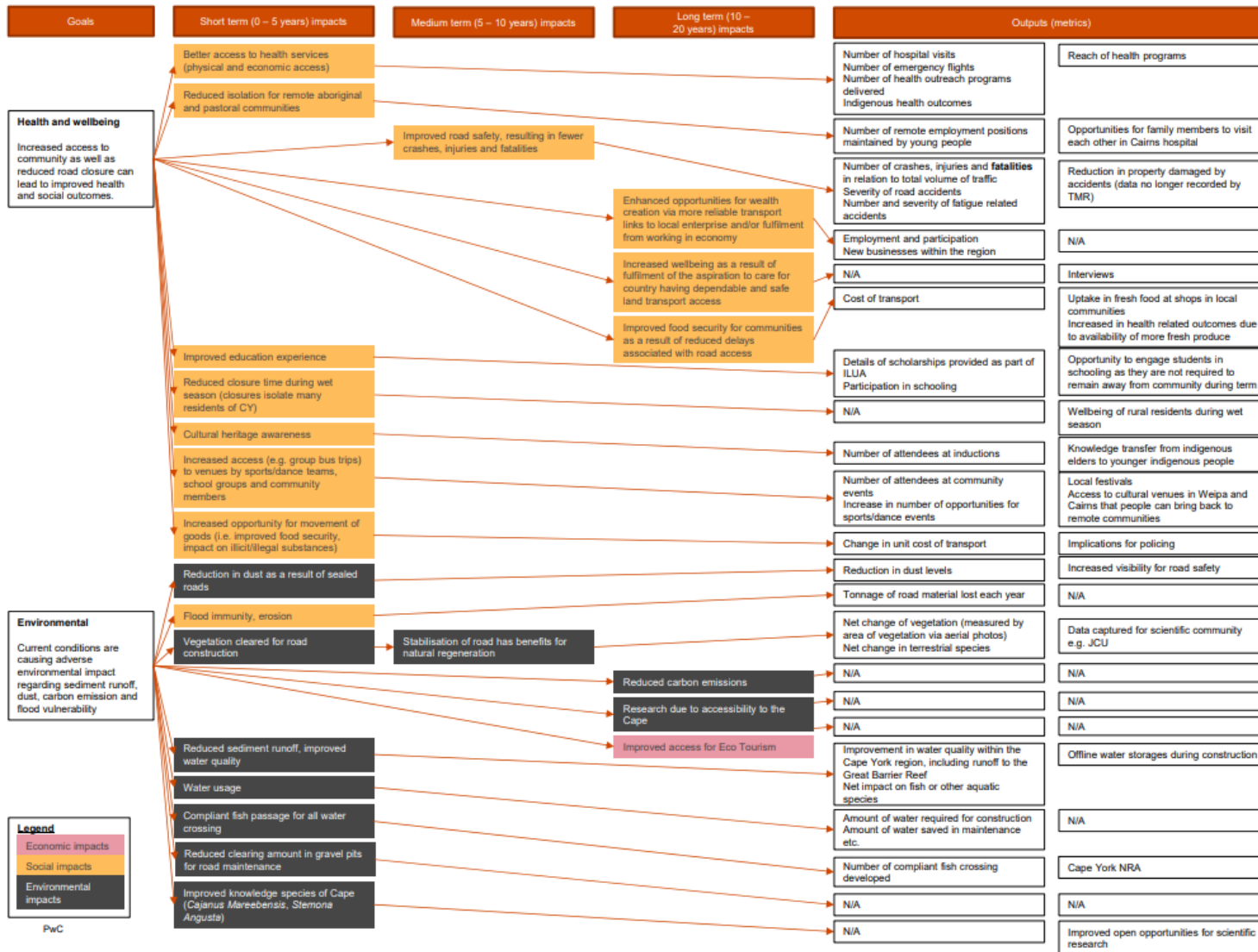
The PLM is shown in Figure 22 to Figure 24.

Figure 22: Project logic map



Source: PwC analysis

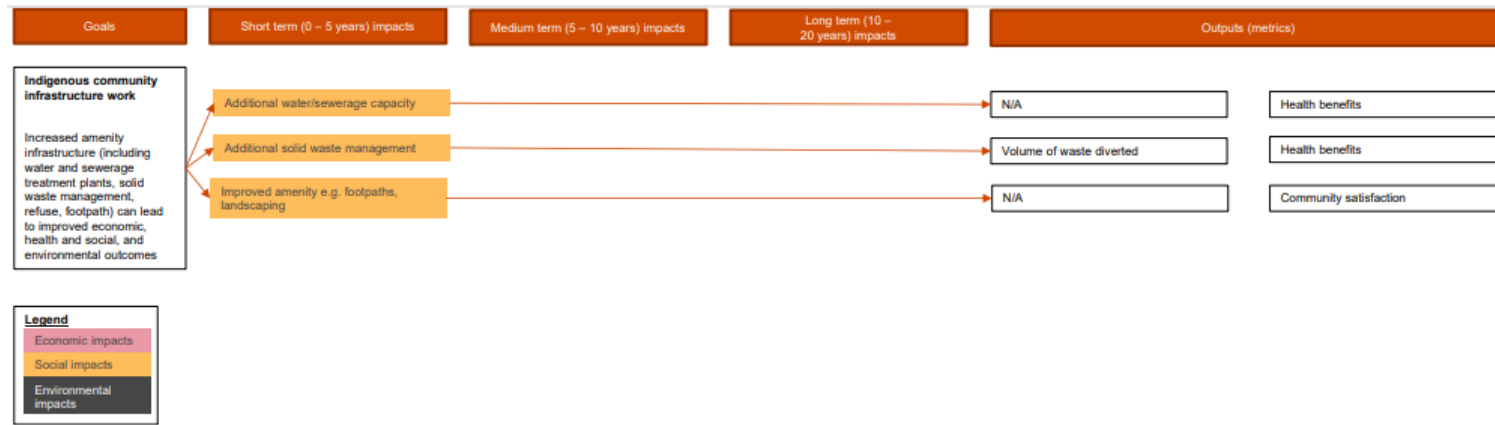
Figure 23: Project logic map



Source: PwC analysis

Figure 24: Project logic map

Methodology



Source: PwC analysis

4.3 Evaluation framework

The evaluation was conducted using the evaluation framework outlined in the Evaluation Plan. The evaluation criteria were developed to ensure that they assess the CYRP's success at meeting the goals outlined in the PLM. Also considered, was existing material related to the project's objectives as outlined in the:

- CYRP Business Case, completed in 2013
- CYRP Project Delivery Plan, completed in 2015
- Indigenous Land Use Agreement (ILUA), 2016.

The evaluation criteria are outlined in Table 4.

Table 4: Evaluation criteria

Criteria	Description
Facilitating economic growth	The extent to which the project facilitates economic growth (employment, training, tourism and industry growth) by achieving efficient access to transport infrastructure.
Enhancing existing economic activities	The extent to which the project enhanced existing economic activities by sealing sections of key roads to improve efficiency of freight, travel time, maintenance/reconstruction costs, road closures and safety.
Improving health and wellbeing for Cape York residents and visitors	The extent to which the project improved health and social outcomes by increasing access to the community.
Reducing adverse environmental impacts	The extent to which the project reduced adverse environmental impacts (sediment runoff, dust, carbon emission and flood vulnerability) compared to the original state.
Enhancing community infrastructure	The extent to which delivering amenity and community infrastructure works has improved economic, health and social, and environmental outcomes of Cape York communities.

Performance standards and indicators for each of the evaluation criteria were developed to create an evaluation rubric. The performance standards and indicators describe a range of quantitative and qualitative outcomes for each criterion.

4.4 Data collection techniques

The data that was collected during the evaluation and the selection of data collection methods depended on:

- the evidence needed to best answer the evaluation questions
- data availability, including disaggregation to the relevant levels and types (e.g. to geographical area, time periods such as monthly or annual data collection)
- the methods and analysis for the evaluation methodology
- feasibility of data collection based on time and budget available.

This evaluation used a mixed of data sources collected through multiple methods to strengthen the credibility, usefulness of evaluation results, ensure data accuracy and facilitate its interpretation. The main data sources were:

- literature review (secondary data)
- existing project data (secondary data)
- stakeholder interviews (primary data).

The availability of existing and project data within the Cape York region was relatively limited owing to limitations in the data collection and retention mechanisms throughout the region. Therefore, this SEEIA relied heavily on the results of the extensive stakeholder engagement process.

4.4.1 Primary data

Primary data consisted of information that evaluators observed or collected directly from stakeholders about their first-hand experience with the project or program. Primary data was collected through stakeholder interviews, which are detailed in Section 3.6. Primary data collection facilitated a deeper understanding of observed changes and the factors that contributed to change.

4.4.2 Secondary data

Secondary data consisted of data that was collected by TMR or other departments or agencies for purposes other than those of the evaluation. Aa range of information sources were considered, such as:

- regional, state, nationally and internationally published reports
- economic indicators
- project or program plans
- monitoring reports
- previous reviews, evaluations and other records
- strategic plans
- research reports.

The priority data source was existing project data. Literature review was also utilised when project information was not available.

4.5 Existing project data

Existing project data that was considered relevant to the evaluation was also used. A summary of the requested information and the information provided by TMR is shown in Table 5. Where existing project data was not available or did not provide the necessary evidence, data from literature reviews and/or stakeholder engagement was used.

Table 5: Existing project data request and information provided

Type	Information requested	Information provided
Key planning documents	Details of Indigenous community infrastructure package	Project names and CAPEX
	CYRP Business Case	Phase 1 PDR Business Case received 18/02 "Business Case - PDR Upgrade - Rocky Creek to Kennedy and South of Sudley Short Form"
	TMR submission to Queensland Parliament Transport and Resources Committee inquiry into the PDR (Laura to Weipa) project	"DTMR submission TRC PRD Inquiry 2022" and appendices
	Indigenous Land Use Agreement	PDR ILUA (executed 18/10/2016) Environmental Management Strategy (EMS) Chapter 15 Cultural Heritage Management Agreement (CHMA) Schedule 4 Indigenous employment targets / Indigenous employment opportunities plan
	Other impact assessment information - any other relevant information pertaining to how the project either was intended to or has impacted (positively or negatively) on social, environmental, community outcomes	Environmental Assessment Reports
Construction	Details on each section upgraded, including design	Design drawings for PDR subprogram
	Final construction cost (total or \$/km) / Contract Direct Cost Amount	Provided where available Refer spreadsheet - Summary by Contract & Summary by Contract - Incl indigenous people
	Hours spent working on the project (review timesheets)	Provided where available Refer spreadsheet - Summary by Contract & Summary by Contract - Incl indigenous people
	Number of crew working on project (review timesheets)	Provided where available Refer spreadsheet - Summary by Contract & Summary by Contract - Incl indigenous people
	Percentage of works from the local area (remote community and regional centre) who were employed, what job they had, how long they were employed and salary range)	Provided where available Refer spreadsheet - Summary by Contract & Summary by Contract - Incl indigenous people Length of employment and salary range not available
	Local Industry Participation, measured as a percentage of the Contract Direct Cost Amount	Provided where available Refer spreadsheet - Summary by Contract & Summary by Contract - Incl indigenous people

	Details of any training programs for Indigenous and non-Indigenous workers	My Pathways was one provider
	ML of water required for construction per km of PDR	TMR confirmed that the water required was 5-7 ML/km depending on complexity
	Total quantities of materials used	Not available
<i>Construction cont.</i>	Construction environmental information (e.g. complaints and non-conformance reports)	Audit Reports for majority of projects
	Environmental Design Reports (EDRs)	Environmental Design Reports for some projects
	Environmental Approvals obtained	Where relevant
	Cost Benefit Analysis model to support CBA results	Not available
	Number of attendees at cultural induction	Provided for 2015/2016
Community / social outcomes	Community consultation	TMR confirmed that consultation was not undertaken in detail
	Stakeholder Engagement Plan for the CYRP program	Not available
	Outcomes in non-school qualifications in the region	Not available
	Employment and unemployment data as a result of the CYRP program	Not available
	Satisfaction surveys - TMR reputation across community and stakeholders	Not available
	Social impact assessment or similar conducted	Not available
Post-construction	Details/cost of any reconstruction/maintenance work on unsealed parts of PDR since project commenced	Not available
	Details of flood events since project commencement (flood modelling)	Not available
	Details of maintenance for newly sealed sections of PDR	TMR confirmed that no maintenance to date has been carried out on newly sealed sections
	Proportion of PDR maintenance undertaken by Indigenous businesses	50 per cent
	Travel time from Laura to Weipa (pre and post construction)	Not available
	Number and frequency of road accident before and after project	Crash data for 2010-2022 ¹³

¹³ TMR noted that there are limitations to the recorded crash data as not all crashes in the region were reported and recorded by TMR and QPS.

	Number of days road is closed per year (review council and TMR records)	Road closure days for 90C and 90D for period 2015 to 2021
	Any environmental monitoring (before, during and after construction)	No monitoring undertaken

4.6 Consultation with internal and external stakeholders

The evaluation team conducted extensive consultation across many sectors of the community. The purpose of stakeholder engagement was to:

- inform stakeholders about the SEEIA
- extract key themes regarding the CYRP to inform the evaluation
- identify appropriate primary data collection methods
- strengthen SEEIA results through a broad range of views.

The Stakeholder Engagement Plan provided an overarching framework for stakeholder engagement.

The stakeholders relevant to the evaluation were identified and categorised according to different stakeholder groups. The IAP2 Spectrum has been used to identify the appropriate level of engagement for stakeholders based on their level of interest in and influence over project outcomes.

The stakeholders that were interviewed are summarised in Table 6.

Table 6: Overview of stakeholders

Stakeholder group	Stakeholder consulted	Role
Health services	Apunipima Cape York Health Council	Health service provider in region
	Torres and Cape Hospital and Health Services	Health service provider in region
Representatives of Indigenous communities	TCICA	Representative for 10 indigenous local governments as well as Torres Shire Council, Cook Shire Council and Weipa Town Authority
	Aurukun Shire Council	Local council
	Cook Shire Council	Local council
	Hope Vale Aboriginal Shire Council	Local council
	Kowanyama Aboriginal Shire Council	Local council
	Lockhart Aboriginal Shire Council	Local council
	Napranum Aboriginal Shire Council	Local council
	Northern Peninsula Area Regional Council (NPARC)	Local council
	Pormpuraaw Aboriginal Shire Council	Aboriginal corporation for Laura
	Ang-Gnarra	Civil construction on CYRP program (in JV with Downer Group)
Local contractors	Bama Services	Civil construction on CYRP program (in JV with Bama Services)
	Downer Group	Civil construction on CYRP program
	Koppen Developments	Civil construction on CYRP program
	Robinson Civil Construction FNQ	Civil construction on CYRP
	RoadTek	Tourism provider in region
Tourism	Laura Motel and Laura General Store	Tourism body in region
	Tourism Tropical North Queensland (TTNQ)	
Other Government	Hon Warren Entsch MP	Federal Member for Leichhardt
	Cynthia Lui MP	State Member for Cook
	Regional Development Australia (RDA) Tropical North	Role in facilitating regional economic development outcomes, investment, local procurement and jobs
	James Cook University	Role in facilitating regional economic development outcomes, investment, local procurement and jobs
	Department of State Development, Local Government, Infrastructure and Planning (DSDILGP)	Role in facilitating regional economic development outcomes, investment, local procurement and jobs
	Department of Regional Development, Manufacturing and Water (DRDMW)	Leading regional economic development in the Cape York region

Methodology

	Cape York Partnership	Relevant as the umbrella organisation for Bama Services, Djarragun College, Cape York Employment and Ngak Min Health
--	-----------------------	--

5. Summary of findings

5.1 Purpose of chapter

This chapter details the findings of the SEEIA evaluation. It addresses how the CYRP responded to the problems and opportunities as identified and confirmed through the PLM process. It provides a detailed description of the outcomes across the five criteria outlined in Section 4.3 and is supported by a summary of the quantitative and qualitative performance standards and indicators (where possible) which are described in Chapter 5. This chapter is structured as follows:

- Evaluation criteria
- Criterion 1 – Facilitating economic growth
- Criterion 2 – Enhancing existing economic activities
- Criterion 3 – Improving health and wellbeing outcomes for Cape York residents and visitors
- Criterion 4 – Reducing adverse environmental impacts
- Criterion 5 – Enhancing Indigenous communities.

5.2 Criterion 1 – Facilitating economic growth

Project Logic Map Goal (problem) 1 – Lack of efficient access to transport infrastructure (including road, barge, boat ramps and air strips) is limiting the economic potential of the Cape York regarding employment, training, tourism and industry growth.

This criterion and goal focussed on the impact of the lack of efficient access to transport infrastructure, particularly road access and barge efficiency, to the regional economy. The criterion measured the impacts of CYRP in creating advances in the regional economy. The impacts of the CYRP on facilitating economic growth are grouped into:

- Employment and training opportunities
- Local business development
- Industry development – enhancement of agricultural and pastoral industries
- Industry development – enhancement of tourism industry
- Enhancement of other industries.

5.2.1 Employment and training opportunities

A key intended outcome for the CYRP identified in the PLM was to increase local and Indigenous employment and training opportunities. This included both local employment opportunities during construction and upskilling residents and businesses for long term development. The construction industry currently represents over 10 per cent of the Torres and Cape's total gross output, contributing \$338.9 million to the region's economy in 2021¹⁴. From October 2016, the CYRP PDR works were carried out under an agreement between the Queensland Government and Traditional Owners, the PDR ILUA. The ILUA sets out three key result areas (KRA) related to local and Indigenous employment and training opportunities that were built into all construction contracts. The overall performance on the three KRAs is summarised in Table 7 which shows that all KRAs were exceeded.

Table 7: KRA performance for CYRP

KRA	Contract Target	Actual Achieved
KRA 1 – Indigenous <i>and non-Indigenous</i> training and upskilling	45,465 hours	152,000 hours
KRA 2 – Implementation of an Indigenous Economic Opportunities Plan	\$16.5 million	\$42.6 million
KRA 3 – Local industry participation	\$50 million	\$84 million

Source: TMR (2022). Submission to the Transport and Resources Committee: public works inquiry into the Peninsula Developmental Road (Laura to Weipa) project.

Stakeholder consultation with contractors involved in CYRP confirmed that:

- KRA targets were achievable
- Performance against KRA targets were surpassed
- KRA reporting was not considered onerous
- KRA targets helped local contractors remain competitive against other major contractors.

TMR reported that the KRAs have facilitated unprecedented local access to employment opportunities, training and business development in civil construction and cultural heritage. Under the ILUA, there were:

- 84 Indigenous trainees in civil construction who commenced or completed nationally recognised competencies for different civil construction equipment and machinery
- 321 Indigenous workers employed to deliver works on the PDR as part of CYRP
- 108 local Traditional Owners employed to provide over 10,000 hours of cultural heritage monitoring
- 19 local Indigenous businesses engaged to work in civil construction, vegetation and road maintenance works.¹⁵

¹⁴ Torres Cape Indigenous Council Alliance (2021). *TCICA Economy and Industry Profiles*.

¹⁵ TMR (2020). Cape York Region Package. Accessed at <https://www.tmr.qld.gov.au/projects/cape-york-region-package>

5.2.1.1 Identified benefits

Local councils and other government stakeholders generally reported that CYRP was successful in providing Indigenous employment and training. Local councils confirmed that the program supported capacity building of local council staff and allowed council equipment to be hired to complete works. Local councils reported that they had leveraged the CYRP to invest in training for their employees such as certificate II and III in civil construction. Lockhart River Aboriginal Shire Council reported that the complexity in the CYRP projects has given their employees extra confidence to deliver more complex projects. In 2022, Lockhart River Aboriginal Shire Council upskilled their employees in surveying and were able to purchase their own surveying equipment. Representatives from Apunipima Cape York Health Council highlighted the importance of employment on health and wellbeing. They reported that work for even one family member can lift a whole family in terms of health and wellbeing.

“Now we have the plant and accreditation to run the plant by our [local team] – an opportunity that may have been a long way off without the investment.”

Lockhart River Aboriginal Shire Council

Contractors that worked on CYRP generally reported that the project was successful in increasing local Indigenous and non-Indigenous employment. Representatives from the Bama Services/Downer Group JV noted that all roles from supervisor through to foreman on their project were filled by Indigenous employees. Koppens had two indigenous employees stay on with them after their Coen PDR project. Downer Group reported that a benefit of using smaller Indigenous-owned businesses, rather than larger businesses, was that they had more flexibility in hiring from the local Indigenous workforce. For example, on a Bama Services/Downer Group JV project, a local Indigenous worker presented at the project’s prestart and Bama Services was able to hire and onboard him immediately. Contractors reported that many of the successful smaller contractors were embedded in local councils, drawing upon their skills developed through the CYRP works.

“The CYRP supported capacity building of local Council staff and contributed to Council’s revenue by providing the opportunity for Council equipment to be hired to contractors to complete works.”

Local government body representative

While it was not a formal training requirement of CYRP, stakeholders reported CYRP provided an opportunity for local businesses to upskill in important administrative and quality assurance processes, assisted by larger contractors. It was observed that Indigenous contractors had significantly improved the quality of project documentation and reporting as a result of the stringent processes and requirements associated with working on CYRP.

Beyond TMR, the CYRP program aimed to enable local businesses and workers to increase employment opportunities with other public and private sector organisations. As part of the Queensland Parliament Transport and Resources Committee inquiry into the PDR (Laura to Weipa) project, TMR stated that representatives from Aurukun identified that CYRP had increased access to employment opportunities, upskilling and life skills training in relation to Rio Tinto Alcan Weipa (RTAW), the Indigenous Employment Opportunity Program, and the recent establishment of a permanent Army Reserves presence in the Cape York region.

5.2.1.2 Identified challenges

Although CYRP provided extensive training opportunities, contractors identified that a key challenge to providing local employment and training opportunities was finding local skilled workers such as engineers and plant operators. It was noted that most skilled workers were employed on a fly-in, fly-out basis and once the employee had gained experience on the project they were likely to move on to the next project in other localities, resulting in missed opportunities for local industry and the community to benefit from long term economic activity.

Most stakeholders agreed that another key challenge was retaining apprentices and employees after the completion of the works and many suggested that a key contributing factor was the lack of road construction works available during the wet season. To address this issue, some contractors offer other work opportunities in landscaping, building services and vehicle maintenance, which allowed trainee retention and staff development to the point where the trainees were offered permanent positions within the business. Stakeholders suggested that providing support to these contractors to retain apprentices and trainees during the wet season, where CYRP program work may not be available, may lead to a greater impact on employment and training opportunities, and further facilitate regional economic growth.

In response, TMR established the Cape York Indigenous Economic Working Group (CYIEWG) made up of representatives from:

- Cape York Traditional Owners
- TMR
- Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships
- Department of Employment, Small Business and Training
- Department of Defence
- National Indigenous Australians Agency
- TCICA
- Cape York Land Council (CYLC)
- TAFE Qld
- Glencore
- Rio Tinto
- Cape York Natural Resource Management.

The CYIEWG meets bi-monthly for the purpose of formulating strategies to improve continuity of employment for residents of Cape York Indigenous communities.

5.2.2 Local business development

In addition to employment, a key objective of CYRP as identified in the PLM was to develop local businesses. The ability for the program to facilitate economic growth through industry development pathways is exemplified through the achievements of Cape York business, Bama Services. Under CYRP, Indigenous-owned civil construction business Bama Services was subcontracted by RoadTek to undertake the pave and seal of two of the four kilometres of the South of Morehead River project. Bama Services was then subcontracted by RoadTek to carry out culvert works on the South of Musgrave project. As a result of the successful completion of these projects, Bama Services gained their prequalification at Road 2, Bridge 2 (R2B2) levels. After gaining their R2B2 levels, Bama Services was the successful tenderer for 10 Mile Creek and South of Duckholes projects. Most recently, Bama Services partnered with Downer EDI to undertake both the Kennedy to Rocky Creek and Merluna to York Downs (Part B) projects under the CYRP2 program of works. Bama Services is the first local Indigenous business to ever achieve prequalification and be awarded a contract in Cape York¹⁶. Downer EDI reported that they were able to support Bama Services to deliver higher value works on the program because of the certainty of the works that CYRP provided.

5.2.2.1 Identified benefits

Stakeholders reported that CYRP facilitated local business development because local businesses were able to upskill and build capacity and capability and then independently complete similar scopes of work. Local councils reported that the investment in CYRP has enabled the establishment and/or development of local road construction workers and businesses, such as Aurukun Earthmoving Pty Ltd. TCICA reported that CYRP has been a great success in the establishment of localised road construction in community. To further strengthen the local industry and facilitate economic growth, the aim is for these local businesses to be able to bid, win and complete larger scopes of work, particularly for future stages of the CYRP program.

5.2.2.2 Identified challenges

Contractors identified that while CYRP encouraged the opening of new local businesses, these businesses came with their own set of inherent challenges and not all businesses remained open. For local businesses, challenges included:

- higher execution risk due to smaller businesses generally having limited financial capacity in comparison to larger contractors
- difficulties in retaining long term, local skilled workers due to the contract-to-contract nature of the works with packages of work lasting approximately six months, where workers tend to move on to other organisations or regions after each contract
- a 'local premium' applied in hiring a local Indigenous and non-Indigenous workforce
- limited capabilities of the local workforce for some works required, resulting in the need to subcontract external, de-localised organisations.

¹⁶ TMR (2020). *Strategic Partnerships Bama Services*. <https://www.tmr.qld.gov.au/firstnationspartnerships/Roads-Program-and-Partnerships/Strategic-Partnerships/Bama-Services>

5.2.3 Industry development – enhancement of agricultural and pastoral industries

The Cape York region covers an area of approximately 137,000 km² and encompasses diverse landscapes including 16 complete river basins and 30 broad vegetation groups¹⁷. The Agriculture, Forestry and Fishing industry currently contributes \$97.5 million to the Torres and Cape region's total gross output, representing 3 per cent of the region's combined industry output¹⁸. A key desired outcome of the CYRP identified in the PLM was the enhancement of agricultural and pastoral industries.

5.2.3.1 Identified benefits

As a result of improved access along the PDR and local community roads, it was anticipated that CYRP would provide the opportunity for new agricultural business activity in the region and support economic growth in pastoral industries. During consultation, DSDILGP reported that there had been renewed interest from investors into pastoral and agricultural enterprises in the Cape York region. For example, investors are foreseeing economic opportunities as land in Weipa is being returned to the Traditional Owners. During consultation, stakeholders identified that there had also been a trend from cattle to carbon farming, and to other crops such as sorghum, sunflower, chickpeas and rice¹⁹.

5.2.3.2 Identified challenges

While the sealing of the PDR has provided improved access routes for agricultural purposes, stakeholders identified major changes to the agricultural industry that have occurred independently from the CYRP project that may have limited the uptake of new opportunities in the region. A key change in the agricultural industry is the Queensland Government strategy to convert land in the region into national parks. As part of this initiative, the Queensland Government recently purchased two Cape York two cattle properties to link existing national parks under the Cape York Peninsula Land Use Strategy (CYPLUS) and further funding commitment for voluntary land purchase through the Cape York Peninsula Tenure Resolution Program (CYPTR)²⁰. The CYRP remains critical to existing and emerging agricultural and pastoral industries in the region regardless of the wider changes in the industry.

5.2.4 Industry development – enhancement of tourism industry

The value of tourism in Cook Shire increased significantly from a total value of \$29.77m in 2013/14 to a peak of \$58.59m in 2017/18²¹. In 2019/20, the total tourism and hospitality revenue in Cook Shire was \$45.5m and the total value added was \$24.8m, which shows a contraction of the tourism industry owing largely to the impacts of COVID-19²². A key intended impact of CYRP was to improve transport infrastructure, particularly road access, to achieve flow-on effects to the Cape York tourism industry which strongly relies on the self-drive market. Safe and accessible transport infrastructure has the opportunity to facilitate step change growth, creating long-term, positive impacts on the tourism industry, with a significant increase in visitor numbers expected when the whole PDR is sealed, and smaller vehicles can drive the full PDR.

¹⁷ Cape York Natural Resource Management Ltd (2022). *Our region*. Accessed at <https://capeyorknrm.com.au/about/region>

¹⁸ Torres Cape Indigenous Council Alliance (2021). *TCICA Economy and Industry Profiles*.

¹⁹ Sexton-McGragh, K. (2017) *VIDEO: Cape Farming: A controversial future for Cape York farming*. Accessed at <https://www.abc.net.au/news/rural/programs/landline/2017-07-08/cape-farming:-a-controversial-new-future-for-cape/8690974>

²⁰ The Queensland Cabinet and Ministerial Directory (2022). *Palaszczuk Government delivers Queensland's largest conservation acquisition in a decade*. Accessed at <https://statements.qld.gov.au/statements/94555>

²¹ id (informed decisions) (2021). Cook Shire Council. Accessed at <https://economy.id.com.au/cook>

²² id (informed decisions) (2021). Cook Shire Council. Accessed at <https://economy.id.com.au/cook>

5.2.4.1 Identified benefits

Given recent circumstances surrounding COVID-19 and the pandemic's impact on the domestic tourism industry more generally, it is difficult to measure the impact of CYRP on targeted tourism in the Cape York region. Recent estimates, however, indicate that the NPA observed over 80,000 visitors in 2021²³. Weipa Town Authority also stated that while numbers recorded at the Weipa camping ground varied, there were roughly 40,000 tourists during peak season and up to 60,000 across the PDR²⁴. TTNQ has observed visitor numbers growing steadily over the past decade, which they believe has been amplified by the sealing of the PDR. TTNQ also observed that the length of stay has been increasing from 2020 onwards.

Prior to the sealing of the PDR, 4WDs were the only passenger vehicles that could safely access most of Cape York. However, with the progressive sealing of the PDR, stakeholders have observed more conventional vehicles, caravans and trailers/boats travelling safely on the PDR and other Cape York roads. The increase in diversity of the types of vehicles suitable to travel the PDR broadens the opportunity for more people to visit the Cape York region.

“Sealing works on the PDR would likely result in repeat or more frequent visits to the Cape York region [by 4WD tourists], from once every four years to once every one or two years.”

Government body

The increase in tourism has provided opportunities for tourism operators and accommodation providers in the region. TCICA is leveraging the opportunity for diverse vehicles by considering more high-end tourism that delivers benefits back to the community rather than more self-sufficient types of travel. TCICA reported that some local communities were ready and willing for tourism, while others appeared to be more wary or less prepared. Local council stakeholders were generally supportive of the recent growth in tourism. Hope Vale Aboriginal Shire Council reported that the local community is supportive of tourism. The caravan park at Elim Beach in Hope Vale was developed after an influx of tourists over the past five years, supported by the Endeavour Valley Road sealing subprogram and Hope Vale Aboriginal Shire Council sealing of Elim Road to the coastline. Kowanyama Aboriginal Shire Council observed increased tourist traffic through the area which provided opportunities for the Traditional Owners to open up more camp sites. Napranum Aboriginal Shire Council reported that while they do not currently have a tourism offering, the community is open to and planning for tourism in the future. Lockhart River Aboriginal Shire Council and Mapoon Aboriginal Shire Council noted that the community reactions were slightly mixed.

“The PDR sealing is going to give us some serious opportunities [for tourism].”

Local Aboriginal Shire Council

TTNQ observed that Cape York tourism is moving from being a journey to a destination. Prior to the sealing works, much of the tourist interest in the Cape York was in the drive or journey along the unsealed PDR. This trip necessitated stops along the PDR route to service vehicles and/or rest given the long travel time. The PDR can now be driven within a day with minimal need for service stops; however, the visitor nights are increasing as visitors are staying for the cultural and eco-tourism opportunities. This is driven by an increase in interest for guided walks, cultural experiences and exploring the Cape. For example, Ang-Gnarra Aboriginal Corporation has started running tourism operations in Laura over the past two years including a caravan park and galleries. Last year, Ang-Gnarra took back the running of the Laura Quinkan Indigenous Dance Festival which was sold out with 6,000 attendees.

²³ Burt, J. (2021). *Visitors to tip of Cape York could be charged in Pajinka traditional owners' plan*. Accessed at <https://www.abc.net.au/news/2021-11-23/traditional-owners-to-charge-visitors-to-the-tip-of-cape-york/100606246>

²⁴ Transport and Resources Committee (2022). *Transcript - 6 June 2022 - TRC - Hearing - Inquiry into Peninsula Development Road (Laura to Weipa) Project – Weipa*. Accessed at <https://www.parliament.qld.gov.au/Work-of-Committees/Committees/Committee-Details?cid=173&id=4137>

While many stakeholders noted that seasonality will continue to be a challenge for tourism in Cape York, TTNQ noted the tourist season is getting longer every year. While there is limited data showing the current impacts, TTNQ is confident that the seasonality will wane with flood resilience as evidenced by the expansion of the tourism peak in Cooktown from June to July with the sealing of the Mulligan Highway from Cairns.

5.2.4.2 Identified challenges

While many stakeholders acknowledged the importance of better access to transport infrastructure as a facilitator to increase tourism to the Cape York economy, some challenges associated with increased tourism were identified, including:

- managing an increase in waste (both rubbish and human waste).
- deterrence of some 4WD users who prefer the (previously) 'unsealed' nature of the PDR. However, this is at least partly mitigated by several roads in the region, including the Old Telegraph Track, the CREB (Old Powerline Track) and Frenchmans Track, remaining unsealed and appropriate for 4WDs.
- readiness of local businesses to meet the needs of a greater number of visitors with more diverse travel purposes (e.g. pressure on the already scarce entertainment and hospitality services, accommodation providers and tourism operators).

5.2.5 Enhancement of other industries

In addition to local business development, agriculture and tourism, a key intended outcome of CYRP identified in the PLM was to support economic development in mining. The mining industry is a critical sector for the Cape York region, currently contributing \$1,091 million to the Torres and Cape region, accounting for 34 per cent of the region's total gross output²⁵.

5.2.5.1 Identified benefits

RTAW, which operates three bauxite mines around Weipa, participated in a public hearing for the Queensland Parliament Transport and Resources Committee inquiry into the PDR (Laura to Weipa) project and indicated that the most significant benefit of the PDR sealing was that it improved liveability for communities. For example, from RTAW's perspective, PDR sealing was seen to have increased liveability for Weipa residents by reducing isolation and increasing access by commercial vehicles, which in turn attracts potential employees to Weipa. During this public hearing, RTAW also highlighted that being able to transport cars for employee use in town via the PDR may avoid delays due to the backlog of the Sea Swift barge that currently brings freight in and out of Weipa.

“Being able to transport equipment such as cars via the PDR may avoid delays due to the backlog of the barge.”

RTAW, Weipa bauxite mine representative

DSDILGP reported that Glencore is assessing the feasibility of developing a new open cut bauxite mine near Aurukun. With the PDR sealing providing positive impacts to similar operations with RTAW, fully sealing the PDR to and around Aurukun may be a contributing factor to Glencore's feasibility assessment with regards to travel times, workforce attraction and retention, and overall accessibility. TMR are engaging with Glencore to understand their drivers for the project. A new mine in the Aurukun region has the potential to facilitate considerable economic growth for the community including increased employment and training opportunities and local business and industry development.

²⁵ Torres Cape Indigenous Council Alliance (2021). *TCICA Economy and Industry Profiles*.

5.2.6 Summary – Facilitating economic growth

CYRP was successful in facilitating economic growth. The data collected indicated that the KRAs were exceeded across the program and fulfilled the goal of investing in local businesses and individuals.

5.3 Criterion 2 – Enhancing existing economic activities

Project Logic Map Goal (problem) 2 – Unsealed sections of key roads in Cape York (including PDR, Endeavor Valley Road and community access roads) are reducing efficiency regarding freight, travel time, maintenance and reconstruction costs, road closures and safety.

This criterion and goal focussed on enhancing existing economic activities in the Cape York region, specifically in relation to:

- Improving freight efficiency
- Reducing vehicle operating and maintenance costs
- Reducing travel time
- Reducing road maintenance and reconstruction costs.

5.3.1 Improving freight efficiency

A key desired outcome of CYRP identified in the PLM was improving freight efficiency. Freight costs vary widely across Cape York depending on distance, weight, area and type of materials. Typically, sea freight is more expensive than land/road transportation. Freight costs for sea and land transportation are not directly comparable as their price drivers differ. To provide a general understanding of the significant cost contrast, a conversion has been calculated for a typical single trailer (24 tonne) travelling from Cairns to Weipa to a similar volume transported by sea. In this example in 2022, the cost for the land transportation would be \$8,937 whereas the cost for sea transportation would be \$25,794, which represents a potential cost saving of \$16,857 for using road transportation²⁶.

5.3.1.1 Identified benefits

Given the significantly higher costs, it was expected that the necessity for sea freight may be a barrier for economic activity to occur, particularly between December and May when the PDR is often closed due to flooding. While there was minimal information regarding specific industries, most stakeholders recognised that sealing the PDR increased the access to road freight services.

Prior to CYRP, many communities were reliant on the barge to deliver goods given the limitations of the road access. Pormpuraaw Aboriginal Shire Council reported a cost saving of up to \$120,000 a month by ceasing barge deliveries and switching to road freight, with the sealed PDR and community access road upgrades allowing an increase in the number and type of heavy vehicles movements on the roads leading into the local government area.

²⁶ Based on Tuxworth & Woods Carriers September 2022 for 24 tonne single trailer and Seaswift September 2022 for standard 20ft container from Cairns to Weipa

5.3.1.2 Identified challenges

While stakeholders agreed that CYRP had improved access and quality of road freight, the full benefit of the reduced reliance on barges is not likely to be realised until the Archer River, Laura River (north) and Myall Creek crossings are complete. The Archer River bridge is being delivered as part of CYRP2.

5.3.2 Reducing vehicle operating and maintenance costs

Reducing vehicle operating costs (VOC) and maintenance costs was a key intended outcome of CYRP identified in the PLM. Road roughness is one of the most important determinants in vehicle operating costs and affects:

- fuel consumption (indeterminant direction, varies with the roughness level)
- repairs and maintenance costs
- tyre wear
- lubricating oil costs²⁷.

Based on the ATAP VOC models, the VOC for a passenger car (2,000kg) travelling approx. 80km/h on a rural sealed road (IRI 2) are estimated to be \$0.23/km while on a fair unsealed road (IRI 8) \$0.28/km. Similarly, the VOC for a B-Double (68,500kg) on a rural sealed road are estimated to be \$1.37/km while on a fair unsealed road \$2.09/km. Therefore, compared with an unsealed road, passenger cars could save \$0.05/km and B-Doubles \$0.72/km for every journey on a sealed road. This equates to a potential saving of \$9 for passenger cars and \$125 for B-Doubles for a full trip of the 527km PDR compared to pre-CYRP conditions²⁸.

5.3.2.1 Identified benefits

Many stakeholders identified that reduced vehicle operating costs were a significant benefit of CYRP. Although direct data to support the evaluation was not available, stakeholders consulted shared their experiences regarding the benefit of reduced operating costs. A tourism provider in NPA reported that the reduction in maintenance costs to their vehicles as a result of CYRP has been significant.

²⁷ Australian Transport Assessment and Planning. *Vehicle operating costs (VOC) models*. Accessed at <https://www.atap.gov.au/parameter-values/road-transport/5-vehicle-operating-cost-voc-models>

²⁸ Calculated based on prior to CYRP 136km sealed and 391km unsealed and post-CYRP 309km sealed and 218km unsealed from TMR (2022). Submission to the Transport and Resources Committee: public works inquiry into the Peninsula Developmental Road (Laura to Weipa) project.

5.3.3 Reducing travel time

Another key desired outcome of CYRP identified in the PLM was to reduce travel time within Cape York and to Cairns. Road conditions are a significant contributing factor to travel time. Driving on an unsealed road can be more difficult than driving on a sealed road. An unsealed road typically results in longer travel times due to:

- driving slower because the unsealed surface can cause your tyres to lose traction with the road more easily than on sealed roads
- driving slower when visibility is restricted due to dust
- the unpredictability of the road condition as it may change day-to-day depending on weather and the amount of traffic on the road²⁹.

5.3.3.1 Identified benefits

TMR anticipates that at the completion of CYRP2 the travel time between Laura and Weipa will be reduced by up to one hour. Most stakeholders noted that travel times were reducing. 40 per cent of the local councils interviewed indicated that reducing travel time was the most important objective of the project.

5.3.4 Reducing road maintenance and reconstruction costs

Reducing road maintenance and reconstruction costs was a key intended outcome of CYRP identified in the PLM. Unsealed roads require more frequent maintenance than sealed roads as they are more heavily impacted by weather conditions and traffic volumes and are more sensitive to the geography of the land on which they are located. A typical maintenance project for an unsealed road would require:

- a grader to remove defects by cutting or ripping the road surface (generally two grades per year)
- pavement materials to be mixed and re-formed to correct shape to allow proper water drainage
- road compaction using a roller
- water cart
- traffic control
- trucks to haul materials and, if materials are won in borrow pit, bulldozer and loader/excavator.

As much as 60 per cent of the total maintenance costs of unsealed roads can be the ongoing replacement of pavement gravel³⁰. Prior to the CYRP works, the business case which supported its investment, suggested that sealing the PDR would result in a reduction of maintenance costs by up to 50 per cent. The unsealed sections of the PDR typically require reconstruction every three to five years. This extensive high-cost repair works is typically funded under the TMR Maintenance, Preservation and Environment (MPE) funding program and/or the National Disaster Relief and Recovery Arrangements (NDRRA) when the road is impacted by a declared event. Of the 173km of the PDR sealed under CYRP, only 300m has required post-construction repair under NDRRA as at November 2022.

²⁹ TMR (2014) Driving conditions. Accessed from <https://www.qld.gov.au/transport/safety/road-safety/driving-safely/driving-conditions>

³⁰ Australian Road Research Board, Unsealed Roads Manual - Guidelines to Good Practice (ARRB, 2009)

5.3.5 Increasing productivity by reducing damage to commodities

A key intended outcome of the CYRP identified in the PLM was increasing productivity by reducing damage to commodities.

5.3.5.1 Identified benefits

The major primary industry in Cape York based on both land use and income is cattle grazing³¹. Prior to CYRP, cattle could be exposed to high dust levels for long periods when travelling on the PDR. Under high dust levels, cattle may become stressed by progressive dust inhalation, leading to agitation and death in extreme cases. The progressive sealing of the PDR will increase livestock welfare by lessening the stress that can be caused by road roughness and dust generation³².

5.3.6 Summary – Enhancing existing economic activities

CYRP was successful in enhancing existing economic activities. In particular, the sealing of the PDR is progressively improving reliability of freight, vehicle travel time and maintenance and vehicle costs.

5.4 Criterion 3 – Improving health and wellbeing outcomes for Cape York residents and visitors

Project Logic Map Goal (opportunity) 3 – Increased access to community as well as reduced road closure can lead to improved health and social outcomes

This criteria and goal focussed on improving the health and wellbeing of Cape York residents and visitors by:

- improving access to health services
- reducing isolation
- improving road safety
- improving food security
- flood immunity
- improving education experience/participation
- enhancing cultural awareness
- improving access to community activities.

³¹ Cape York Natural Resource Management Ltd (2022). *Our region*. Accessed at <https://capeyorknrm.com.au/about/region>

³² Infrastructure Magazine (2019). Sealing of key cattle supply routes underway in North Queensland. Accessed at <https://infrastructuremagazine.com.au/2019/08/21/sealing-of-key-cattle-supply-routes-underway-in-north-queensland/>

5.4.1 Access to health services

A key goal of the CYRP was to improve access to health services. Torres and Cape Hospital and Health Service (TCHHS) provides health services in Cape York for approximately 27,000 people spread across Cape York and the Torres Strait Islands³³. TCHHS also supports other healthcare providers such as visiting specialist services from Cairns and non-government providers such as Apunipima Cape York Health Council and the Royal Flying Doctor Service. Currently, high risk patients are generally required to travel to Cairns. However, some treatments (e.g. tele-chemotherapy programs) are available in local communities such as Cooktown and Weipa.

5.4.1.1 Identified benefits

Improved road access provides a range of positive health impacts, which benefit mental, physical and social wellbeing for communities across the Cape York region by reducing isolation and improving access to services. Sealing the PDR and key sections of community access roads has facilitated the improved access for the mobile health services such as the dental and breast screen vans and improved road safety for health practitioners visiting primary health centres.

Stakeholders from the local communities identified that the CYRP improved access to major health facilities in Weipa, Cooktown and Cairns, with the improved access specifically having social and cultural benefits in:

- locals being more likely to drive to Weipa for preventative medical services because of the reduced travel time
- family members being able to drive to provide support to patients in Cairns Hospital (as only one family member can fly with the patient)
- locals being able to safely transport the bodies of those who have passed away in Cairns back to their communities.

5.4.1.2 Identified challenges

A potential challenge that stakeholders identified was the additional demand on the health system as the region is opened to more tourists from broader demographics. Local clinics may be strained by higher demand for services by tourists, particularly older tourists, a demographic that is expected to increase with improved road conditions.

5.4.2 Isolation for remote communities

A key intended benefit of the CYRP was a reduction in social isolation. Many remote communities in Cape York are isolated for part of the year owing to climate and/or natural disasters. In 2021, the Queensland Community Support and Services Committee conducted an inquiry into social isolation and loneliness in Queensland. A number of stakeholders agreed that remote, rural or regional living is a significant cause of social isolation and loneliness³⁴. In the Australian Loneliness Report (2018), the Australian Psychological Society concluded that there is strong evidence that loneliness has a negative impact on health and wellbeing, educational attainment and economic outcomes³⁵. Employers in the region reported that isolation was one of the key challenges for both their local and non-local employees in Cape York.

³³ The State of Queensland (2022). *Torres and Cape Hospital and Health Service*. Accessed at <https://www.health.qld.gov.au/services/torres-cape>

³⁴ Queensland Parliament Community Support and Services Committee (2021). *Report No. 14, 57th Parliament - Inquiry into social isolation and loneliness in Queensland*. <https://www.parliament.qld.gov.au/Work-of-Committees/Committees/Committee-Details?cid=165&id=2866>

³⁵ APS, *Australian Loneliness Report: A survey exploring the loneliness levels of Australians and the impact on their health and wellbeing*, November 2018, p 5.

5.4.2.1 Identified benefits

As a result of improved road access, stakeholders reported that most local communities benefited from the reduced isolation by allowing residents to:

- drive to Cairns to stock up on supplies which is often preferred to flying because it is cheaper for families
- travel to country, other local communities or Cairns for a weekend break
- visit family members in other communities more readily.

Improved access also enables young people living away from home to return for weekends which allows these young people to retain their remote employment positions and connection to community.

Having dependable and safe land transport access to country allows fulfilment of the aspiration to care for country, which facilitates positive connections between people and places and is highly related to the level of wellbeing. Local council stakeholders highlighted the benefits of the access roads upgrades for giving local Indigenous peoples the opportunity to get out on country. The Indigenous community infrastructure works subprogram was important in providing access for locals to gather bush tucker and go fishing which encouraged healthy eating. CYP, an employer in the region, reported that because of the increased access they were able to offer their local staff camping on country experiences to support their wellbeing.

5.4.2.2 Identified challenges

The challenge for governments in facilitating better access to isolated communities is balancing it with residents' willingness to accept more visitors. Local councils generally reported that their communities welcomed the increase in visitors to support their developing tourism industries. However, some local councils noted that some local residents opposed the increased access because they were concerned that the visitors may impact the sense of home and preferred lifestyle.

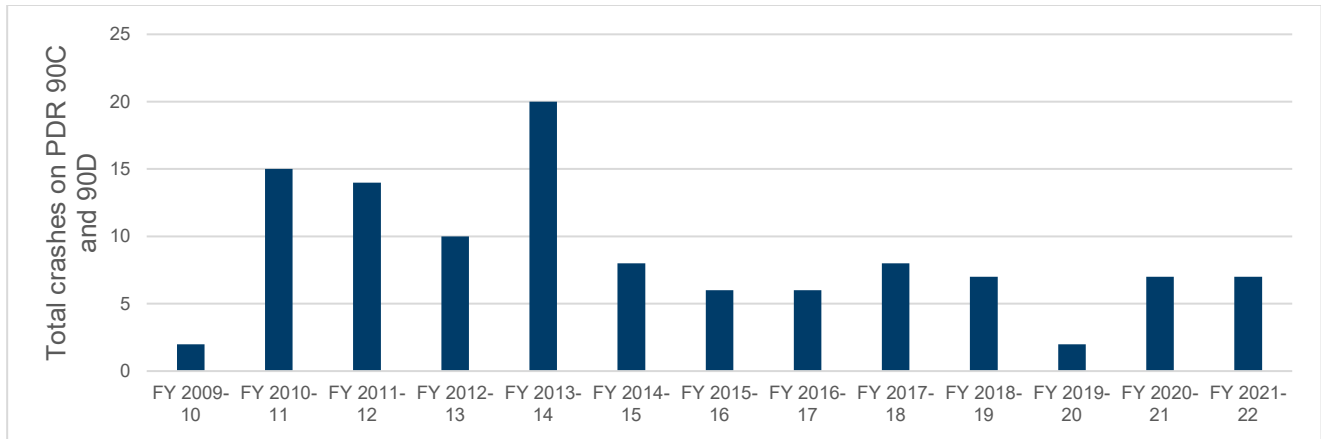
5.4.3 Road safety

Improving road safety was identified in the PLM as a key intended outcome of the program. Improved road conditions are expected to improve road safety and result in fewer crashes, injuries and fatalities.

5.4.3.1 Identified benefits

The crash data for the PDR 90C – Peninsula Developmental Road (Laura – Coen) and 90D – Peninsula Developmental Road (Coen to Weipa) shows a reduction in crashes from the years preceding CYRP compared construction and post construction as shown in Figure 25. From FY09/10 to FY13/14, which was prior to construction of the CYRP PDR program, the average number of accidents was 12 per year with a peak of 20 crashes in FY13/14. This reduced to an average of six per year through construction and post construction to FY21/22.

Figure 25: Total crashes on PDR 90C and 90D over time



TMR noted that there are limitations to the recorded crash data as not all crashes in the region were reported and recorded by TMR and Queensland Policy Service. Generally, crashes involving fatalities and/or serious injury were captured. While the data indicates the trend in incidents over construction and operations, the total numbers of crashes may be higher than the reported data.

Stakeholders generally agreed that sealing the PDR would improve road safety and reduce accidents. Employers in the region agreed that it was easier for staff to move around the region more safely.

“I feel confident that my staff can travel under safer conditions.”

Employer in Cape York Region

5.4.3.2 Identified challenges

While road safety was expected to improve overall, TMR identified that there were challenges to road safety that may arise because of changed driving behaviour. While the average number of accidents decreased through construction, the average number of severe accidents (fatal or requiring hospitalisation) remained similar. A possible causal factor for this increase is that the sealed roads allow drivers to:

- drive at greater speeds
- increase night driving.

There may also be more road accidents involving animals because they congregate to the off-store water storages adjacent the PDR. The post-construction state of each off-store water storage was determined at the discretion of the landowner. While many requested that the facilities be fenced or filled in, others requested to keep them unfenced or have since removed the fencing to allow cattle access to water. Crash data shows two accidents involving hit animals in the four years prior to CYRP and one accident post-CYRP in 2019. Some stakeholders also identified safety risks during construction. For example, Aurukun Aboriginal Shire Council reported that one section of Aurukun access road was left without its final seal before the wet season and locals found that top level of loose gravel was more dangerous for drivers during that period compared to pre-construction.

5.4.4 Food security and storage requirements

Food security is an important consideration for Cape York because nearly all food is brought in. The Cape York Food and Nutrition Strategy 2012-2017 identified the remoteness of Cape York as a barrier to people’s access to healthy, affordable and quality food, with food supply affected by seasonality and road access being cut to some communities for extended periods. Cape York also experiences higher food costs due to high freight costs.

5.4.4.1 Identified benefits

Improved food security for communities was expected as a result of reduced delays with improved access. Stakeholders reported that improved road access has enabled an increased in freight deliveries of goods and materials, with full benefits expected to be realised when the PDR and local access roads are fully sealed. A local council reported that there was a new fresh produce store operating in their community which has benefited from the improved road access which allows them to bring in better quality produce.

5.4.4.2 Identified challenges

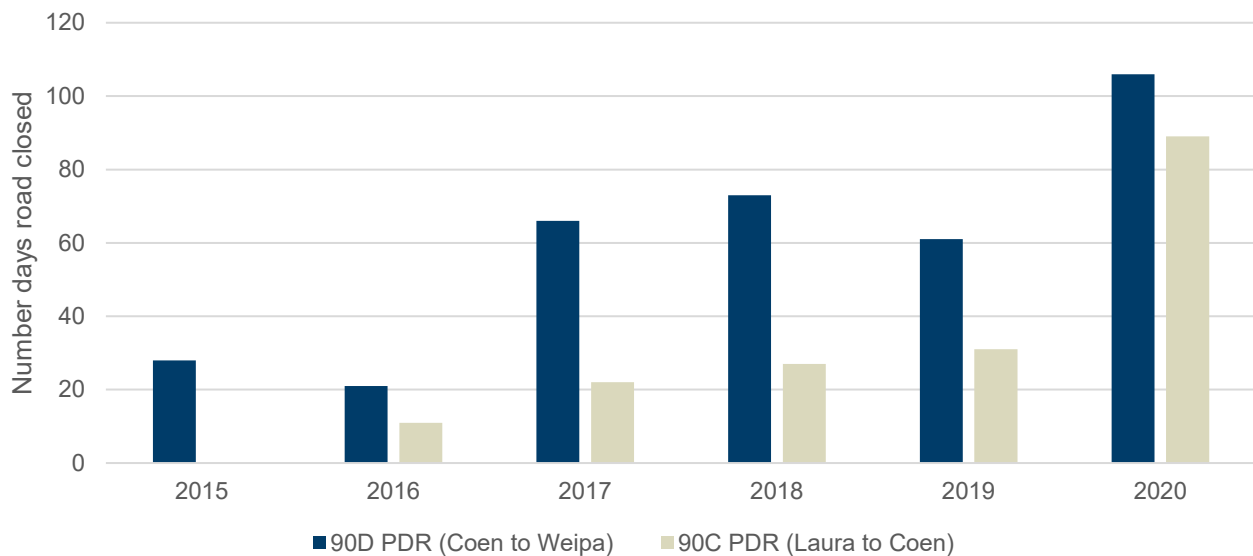
While there have been attempts in the past to develop farming to reduce the reliance on transporting food to the region, it has had limited success. Therefore, it is expected that Cape York residents will continue to rely on transporting and storing food. Stakeholders reported that even when the road is fully sealed, storage of food and fuel would still be required to manage food security during floods. However, by reducing the length of road closures for the wet season, these storage requirements may be reduced.

5.4.5 Flood immunity

A key goal for CYRP was to reduce the closure days of the PDR due to flooding, which initially anticipated a reduction in road closure delays by up to 83 days per annum upon the completion of CYRP2. A summary of the days closed due to flooding from 2015 to 2020 is shown in Figure 26.

While the data shows an increase in days closed due to flooding, this is mostly caused by changes in the duration and intensity of recent wet seasons. There are also several key river crossings along the PDR including the Archer River in section 90D that are yet to be constructed so while large stretches of the PDR were flood proofed under CYRP, the full segment may remain inaccessible until the pinch points are resolved. While there are still parts of the PDR that are inaccessible during the wet season, intra-regional travel has been improved under the CYRP works.

Figure 26: Days closed over time



Source: TMR supplied "Road closure data 90&90D"

5.4.5.1 Identified benefits

An unsealed road network is more significantly affected by rain and floods when compared to a sealed road. The PDR contractors that were consulted confirmed that the sealing works resulted in better access for longer periods of the year, including during wet weather and flooding. Given that the PDR and other community access roads in the region are subject to seasonal flooding and surface saturation, improvements to the PDR and community access roads are critical for more efficient, affordable and safe freight and personal transport and for supporting economic growth objectives.

5.4.5.2 Identified challenges

The unpredictability of weather conditions proves to be a consistent challenge for the residents of the Cape York region. Many stakeholders commented on the delayed and extended wet season this year having impacts on initial planning and delivery of goods. For example, a tourism operator company commented on the challenges in scheduling driving tours in 2022 which has been a year of unpredictable wet conditions. The company had to cancel scheduled tours for periods in May 2022 which historically had been considered dry season.

5.4.6 Education experience

A key aim of CYRP identified in the PLM was to improve the education experience. Travel is central to the schooling experience for many high school students in Cape York because schooling to Year 12 is only available in few communities requiring students to travel from other towns.

5.4.6.1 Identified benefits

Under the ILUA, TMR had a target of 4 school-based scholarships and 2 tertiary-based full-time scholarships. A total of 18 scholarships were provided under CYRP from 2017-2019 which met the target for the 3-year period. RDA Tropical North indicated that the ILUA scholarship program has been useful from a talent pool perspective, particularly in training engineers for the region.

Travelling from local communities to larger towns is common for secondary school students in Cape York. Many towns including Pormpuraaw, Mapoon, Laura, Coen and Hope Vale provide schooling up to Year 6 only, so all secondary school students must travel. Local councils reported that many of their students attend boarding schools in Cairns or further south; however, this necessitates being away from their country and family. TMR reported in the parliamentary inquiry into the PDR (Laura to Weipa) Project that the improved road access enabled family members to visit each other more readily and for young people to be able to return home for weekends which is expected to encourage school attendance.

Cooktown State School is a major education provider in Cape York with 425 students from P-12 with 50 per cent indigenous. Approximately 30 per cent of students live outside Cooktown in surrounding towns and travel to school by bus including 51 students from Hope Vale. Cooktown State School Principal reported that the sealing of Endeavour Valley Road had significantly increased safety for students travelling by bus to school from Hope Vale.

5.4.7 Cultural heritage awareness

Increasing cultural heritage awareness was identified as a key intended outcome of the CYRP in the PLM. TMR aimed to increase cultural heritage awareness through:

- cultural heritage surveys and monitoring
- Aboriginal Cultural Heritage Induction.

5.4.7.1 Identified benefits

For each project, TMR undertook cultural heritage surveys which included consultation with Traditional Owners and a walking survey of the project footprint to identify cultural heritage artefacts or locations. TMR engaged three-to-four Traditional Owners to undertake the cultural heritage surveys for each project. TMR confirmed that the alignment for the Telecom Tower to Archer River project was changed as a result of findings from the cultural heritage survey. TMR showed its commitment to a best practice approach to cultural heritage by building the cultural heritage management agreement into the ILUA.

In addition to surveys, TMR undertook cultural heritage monitoring. Under this program, TMR engaged Traditional Owners to oversee significant disturbance activities, such as clearance of trees or removal of topsoil, to identify any uncovered cultural heritage artefacts. The program supported local indigenous communities with Caring for Country through extensive consultation through delivery of the project. CYLC reported in the Queensland Parliament Transport and Resources Committee inquiry into the PDR (Laura to Weipa) project that there have been fantastic outcomes with Traditional Owners and Indigenous businesses working on the PDR including through cultural heritage and monitoring.

A TMR Cultural Heritage Induction is required for all High Risk TMR projects and is designed to provide guidance and outline expectations for Principal Contractors. The Cultural Heritage Induction aims to enable TMR and the Principal Contractor to meet their obligation to manage the impact of projects on Historical and Aboriginal and Torres Strait Islander Cultural Heritage. The Cultural Heritage Induction is delivered by the TMR Cultural Heritage Officer (CHO) and on specific projects in collaboration with Traditional Owners. The TMR Cultural Heritage Induction:

- provides Principal Contractors with an overview of relevant State and Federal Heritage Legislation, and their role and responsibility to manage cultural heritage under this legislation while working on TMR projects
- provides contractors with a general overview of what cultural heritage is, and why protecting cultural heritage matters, and outlines the Site Specific Cultural Heritage constraints and management requirements for each project
- is also designed to increase the Contractor's awareness of local Aboriginal cultural heritage, cultural history and traditions that reside in the location they are working. This component of the induction is generally delivered by a Traditional Owner (in collaboration with TMR CHO).

As part of CYRP, TMR required that all workers participated in an Aboriginal Cultural Heritage Induction delivered in collaboration with indigenous not-for-profit organisation Balkanu. The inductions had two main goals: to help workers understand their legislative responsibilities under the *Aboriginal Cultural Heritage Act 2003* and to raise awareness of local Aboriginal cultural traditions, languages and areas. The training program covered:

- what is Aboriginal Cultural Heritage
- tangible Cultural Heritage
- rockshelters and open sites
- stone artefacts
- glass artefacts (post European contact)
- grinding Grooves
- scarred Trees
- ceremonial grounds/Bora rings
- shell middens
- art sites
- burials
- procedure for the Discovery of a Find of Potential Cultural Heritage
- procedure for the Discovery of Human Remains
- roles of a Monitor and Cultural Heritage Officer
- general WHS awareness.

Where possible, Traditional Owners or local Indigenous people were involved in the inductions to support the goal to increase awareness. Balkanu certified 242 workers across the CYRP PDR packages.

5.4.8 Access to community activities

Another key intended outcome of the CYRP was facilitating increased access to community activities via:

- increased group bus trips by sports teams, educational groups and community members
- improved road access to cultural activities and venues in which attendees could bring learnings back to their home communities.

5.4.8.1 Identified benefits

TMR reported in the Queensland Parliament Transport and Resources Committee inquiry into the PDR (Laura to Weipa) project that there was a recent growth in sporting participation in Cape York in sports such as basketball, AFL, rugby and running. TMR stated that the Northern Division's Cape Cluster Rugby League competition had expanded for the first time to include Cape-wide games at Coen, Weipa, Lockhart River, Pormpuraaw, Kowanyama and Aurukun. Road improvements enabled trips to occur in team buses, and for coaches and sporting bodies to travel the Cape and visit communities for clinics and scouting players for elite competitions. Hope Vale Aboriginal Shire Council highlighted the benefit of the Endeavour Valley Road sealing project in getting community members and players to football games in Cooktown. The PDR upgrades also provided easier access to higher quality and larger facilities in Weipa. For example, young Indigenous leaders consulted as part of the Queensland Parliament Transport and Resources Committee inquiry into the PDR (Laura to Weipa) project stated that they were able to drive to Weipa and Cairns to access cultural venues, events and opportunities to bring back to their communities. NPARC reported when they host AFL tournaments, the teams are now able to travel by bus. NPARC reported that for their tournament in October, 10 buses would bring students from Scherger, Yarrabah and Weipa.

DSDILGP and RDA Tropical North noted that road upgrades have provided better access for Cairns Indigenous Art Fair (CIAF). The CIAF is an arts and cultural event that brings together Indigenous art centres, galleries, and organisations to sell and exhibit artwork. The CIAF aims to provide platforms for cultural exchange and economic opportunity for Queensland Indigenous artists. Enabling access to the CIAF is a considerable benefit to local communities as it provides Indigenous artists with the opportunity to generate revenue from their art, contributing to their skills and self-sufficiency.

5.4.9 Summary – Health and wellbeing

Overall, CYRP was successful in enhancing the health and wellbeing of Cape York residents and visitors. By improving access, the program delivered a range of health and wellbeing outcomes including reduced isolation, increased access to health services, increased access to community activities and enhanced cultural awareness.

5.5 Criterion 4 – Reducing adverse environmental impacts

Project Logic Map Goal (problem) 4 – Current conditions are causing adverse environmental impact regarding sediment runoff, dust, carbon emission and flood vulnerability.

This criteria and goal focussed on reducing adverse environmental impacts of sealing roads such as the reduction in:

- sediment runoff
- dust
- carbon emission
- flora and fauna impacts
- flood vulnerability.

5.5.1 Environmental impacts

The unsealed segments of the PDR can contribute to a number of environmental impacts including:

- erosion of areas beside the roadway and from gravel and water resource areas
- sedimentation of waterways impacting on water quality
- degradation of vegetation through dust
- impacts on neighbouring houses and businesses from dust
- ongoing use of resources, such as gravel and water, for road maintenance
- impacts on vegetation due to clearing from road maintenance (both due road widening, side tracks and clearing for gravel resources)
- water usage from road maintenance
- restrictions on fish passage due to existing floodways and culverts
- increased carbon emissions due to the manner in which vehicles are driven on the road and the maintenance vehicles used.

It was anticipated that the road sealing would ameliorate these issues and potentially contribute to improved environmental outcomes due to further environmental research that would be undertaken during the project.

5.5.1.1 Identified benefits

The primary environmental benefit from the CYRP upgrades are the ongoing improvements during operation of the upgraded sections. While no environmental monitoring or specific reviews have been undertaken to assess these improvements, information obtained from the initial Environmental Assessment Reports (EARs) and EDRs and the stakeholder engagement has allowed an assessment of the benefits to be made.

5.5.1.1.1 Dust

The volume of dust has been significantly decreased along roads which have now been sealed. The reduction in dust is clearly noticeable by comparing the thick dust coating roadside vegetation (up to 20-30m into the vegetation) on unsealed sections of the road to the now sealed section of the road. This reduction of dust has a number of environmental benefits including improved visibility for drivers which reduces the likelihood of vehicles impacting wildlife, improved growth for roadside vegetation without the dust impacts, and the reduction in airborne dust impacting residents and other motorists during travel.

5.5.1.1.2 Fish movement

A key improvement from the new sections of road relates to fish movement. The original unsealed road did not consider fish movement and therefore floodways and culverts were not designed to facilitate fish movement. In addition, a number of culverts were found to be blocked with sediment due to the volume of gravel washing from the road, which significantly impacted the movement of fish and other aquatic species. The CYRP designs considered fish movement and the works were designed in accordance with current Department of Agriculture and Fisheries (DAF) requirements. The new seal also reduces the volume of sediment entering the waterways, which has reduced the instances of culvert blockages and reduced sedimentation in waterways with subsequent improvement in fish and other aquatic species health.

5.5.1.1.3 Reduction in water and gravel resources

An ongoing improvement from the project is the reduction in water and gravel resources required for maintenance. The unsealed road erodes and degrades each year, with that material ending up in the environment including waterways. The unsealed sections require yearly maintenance including additional water and gravel. There are currently 270 registered Resource Areas along the PDR, each producing gravel for the resealing works. The winning of the gravel material and the water allocation both can have environmental impacts through clearing of land for gravel, removal of water from existing waterways or changes to waterways for water collection. Once sealed the maintenance requirements are significantly reduced which removes the associated need to win this material.

During the construction phase, gravel and water are also required. During the CYRP program, specific gravel production areas were developed as well as a number of dedicated watering points. Limited information is available on the environmental outcomes of these during construction; however, based on the EARs and EDRs the environmental impact was expected to be low. It is also noted that these gravel pits and water sources are likely to have been subject to greater environmental and quality scrutiny during operation than the equivalent during the standard maintenance phase. To this end, environmental auditing was undertaken of each road construction project and the water and gravel extraction during the CYRP program.

During the early design phases of the CYRP it was identified that the flora species *Cajanus mareebensis* was abundant across a number of the proposed project sites. Until August 2020, *Cajanus mareebensis* was listed as Endangered under both the *Environmental Protection Biodiversity and Conservation Act 1999* (EPBC) and the *Nature Conservation Act 1992* (NCA). However, this listing was first proposed in 1992 based on limited observations in the Mareeba area. The process of identifying the prevalence of *Cajanus mareebensis* as part of the Environmental Assessments for the CYRP led TMR to approach the now Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) and the now Queensland Department of Environment and Science (DES) to change the status of the plant. This delisting was successful and *Cajanus mareebensis* has been removed from the EPBC completely and changed to Least Concern under the NCA.

The process to delist *Cajanus mareebensis* required significant investigation of the plant and its relative abundance across Cape York and west to Mt Garnet. These lead to enhanced scientific knowledge in this area, which is a positive for environmental and scientific outcomes.

5.5.1.2 Identified challenges

While the long-term benefits of the project have generally been acknowledged as positive, the lack of monitoring before, and since the CYRP program has made it difficult to accurately quantify these benefits.

Environmental auditing was undertaken during the construction phase. This identified that most contractors were compliant with their environmental requirements. However, the audit reports did identify issues relating to erosion and sediment control, over extraction of water, insufficient weed washdown and lack of waste controls. These issues were common to almost all of the sections and contractors and were noted in a number of audit reports. The identified issues generally appear to have occurred due to inadequate environmental controls by contractors. These could be attributed to the learning being undertaken by contractors as they upskilled their employees with the requirements and anecdotal evidence has suggested that environmental compliance improved as the program progressed.

5.5.2 Summary – Environmental impacts

The long-term impacts of the CYRP are generally positive including a reduction in dust, improvement in fish movement, reduction in water and gravel resources, improved scientific knowledge of flora and fauna in the region and upskilling of local contractors in relation to their environmental obligations. Environmental monitoring prior to and after the project would assist in quantifying the environmental improvements from the project. While the majority were minor in nature there were some environmental non-compliances identified during construction that should be addressed in future stages.

5.6 Criterion 5 – Enhancing community infrastructure

Project Logic Map Goal (opportunity) 5 – Increased amenity infrastructure (including water and sewerage treatment plants, solid waste management, refuse, footpath) can lead to improved economic, health and social, and environmental outcomes.

This criterion and goal focussed on enhancing community infrastructure through the Indigenous community infrastructure work subprogram by:

- improved roads
- improved barge and waste facilities
- improved community satisfaction.

Representatives from each local council were asked to rank five key objectives of the program by importance to their region. On average, the key objectives in order of importance to the local councils were:

- reduced travel time on the PDR
- increased safety conditions on the PDR
- local employment opportunities for your region
- better access to health services
- better environmental outcomes.

The top priority objective for each local council is shown in Figure 27. Four local councils stated that reduced travel time on the PDR was the most important to their region while increased safety conditions on the PDR was most important to three local councils.

Figure 27: Top CYRP outcome for local councils



5.6.1 Improved roads

In addition to the upgrades to the PDR, many local and access roads were upgraded which improved transport for local communities. The upgrades included roads such as Aurukun Access Road, Portland Roads Road, Wheeler Street, Cullen Point Road, Hudson Street, Thuungu Road, Napranum Access Road, Ruchook Cultural Grounds Access Road, Injinoo-Ferry Road, Strathgordon Road, Topsy Creek Road and China Camp Road.

5.6.1.1 Identified benefits

While local councils reported different levels of interaction with the PDR depending on the distance and condition of the local access roads, councils that had local access roads upgraded as part of CYRP reported benefits to their residents. Aurukun Aboriginal Shire Council noted that the Aurukun to PDR local road (upgraded under CYRP) is now open most of the time which opens access to Weipa. In addition to access roads, some communities upgraded local roads within their towns. For example, Mapoon Aboriginal Shire Council reported that the Cullen Point Road sealing under CYRP was very important because all tourists end up following the 10-kilometre road to Cullen Point to see the sunset/sunrise. This has allowed locals to develop campgrounds at Cullen Point.

5.6.2 Improved barge and waste facilities

Providing complementary community infrastructure was a key intended outcome of the CYRP program. Barge/boat ramp/jetty upgrades were completed in Kowanyama, Napranum, NPA and Wujal Wujal. In addition, water, sewer and waste upgrades were completed in Wujal Wujal.

5.6.2.1 Identified impacts

TCICA noted the importance of the Indigenous community infrastructure works package to provide an additional funding path for communities to develop important infrastructure. The barge upgrades as part of the indigenous community works package were important to support the communities during the wet season when they rely on sea freight. Kowanyama was one of the communities that built a barge ramp as part of CYRP. While the community has not attempted use it for barge/freight purposes, the boat ramp has had a significant social benefit for the community for other activities such as fishing. NPARC reported that the boat ramp upgrade at Seisia improved safety for passenger ferries that run frequently to the neighbouring islands.

5.6.3 Improved community satisfaction

Improving community satisfaction was a key desired outcome of the indigenous community infrastructure works subprogram.

5.6.3.1 Identified impacts

All local council stakeholders agreed that CYRP improved community satisfaction. The community infrastructure works subprogram was an important part of the overall CYRP program because it complemented the PDR works by involving local councils and local contractors in relevant projects, increasing access to the PDR and supporting local communities to prepare for the increase in visitors expected as a result of increased access.

The indigenous community infrastructure gave communities important infrastructure without having to go through other funding paths.”

Local council representative

5.6.4 Summary – Enhancing indigenous communities

The Indigenous community works subprogram of CYRP provided important infrastructure to local communities in the Cape. The subprogram was an important part of local community engagement and improved community satisfaction with the program.

Assessing outcomes

5.7 Purpose of chapter

This chapter presents the how CYRP performed against the quantitative and qualitative metrics outlined in the evaluation framework in Chapter 2. It is structured as follows:

- approach
- quantitative outcomes
- qualitative outcomes
- summary.

5.8 Approach

A set of quantitative and qualitative performance standards were developed to assess performance under each of the respective evaluation criteria. Leveraging TMR's SEEIA Framework, a three-point rating scale was applied to each metric to summarise the extent to which CYRP achieved the intended outcomes from a quantitative and qualitative perspective. The three-point rating scale was:

- **poor** – CYRP did not meet the intended outcome
- **good** – CYRP achieved the intended outcome
- **excellent** – CYRP exceeded the intended outcome
- **N/A** – Performance cannot be assessed at this stage due to lack of data.

5.9 Quantitative outcomes

The quantitative performance standards were determined in consultation with TMR as part of the Evaluation Plan development process. The performance standards leverage findings from the CYRP's precedent business cases and investigations undertaken as well as any post-project delivery reporting and monitoring obligations. In addition, these outcomes rely on the review of a number of reports and documents, including the:

- 2013 Business Case – Sealing the case for change
- TMR submission to the Queensland Parliament Transport and Resources Committee inquiry into the PDR (Laura to Weipa) project
- KRA reports and associated employment data
- Environmental Assessment Reports undertaken for each project prior to construction
- Environmental Management Plans developed for the construction period
- Environmental Audit Reports from audits undertaken during the construction period.

These documents were supplemented by information provided by stakeholders during the consultation period. Table 8 to Table 11 present the results of the CYRP's performance against each standard and the associated rating for each respective criterion.

Table 8: Quantitative outcomes for Criterion 1 - Facilitating economic growth

Subcriteria	CYRP Result	Rating
Increase in local industry participation	\$84 million local industry participation (exceeds \$50m target ILUA KRA 3)	Excellent
Increase in Indigenous business participation	\$42.6 million worth of work completed by Indigenous businesses and 19 local Indigenous businesses to provide work in civil construction, vegetation and road maintenance works	Excellent
Increase in number of local businesses (Indigenous and/or non-Indigenous) in the Cape York region that are TMR pre-qualified in the Cape York region	1 new local business in the Cape York region that is TMR prequalified	Good
Increase in training/upskilling hours	152,000 hours in training/upskilling (exceeds 45,465 hours target ILUA KRA 1)	Excellent
Number of new apprenticeships/trainees	84 Indigenous trainees in civil construction who commenced or completed nationally recognised competencies for different civil construction equipment and machinery	Good
Scholarships	18 scholarships provided under CYRP from 2017 to 2019 which met the target of four school-based scholarships and 2 tertiary-based full-time scholarships for 2017-2019 period	Good
Increase in Indigenous employment	During construction there were 321 Indigenous workers employed to deliver works on the PDR and 108 local Traditional Owners employed to provide over 10,000 hours of cultural heritage monitoring	Good
Decrease in unemployment	In 2011 (prior to project), the Cape York region had an unemployment rate of 12.5 per cent and participation rate of 53 per cent. In 2021 (post project completion), the Cape York region had an unemployment rate of 16 per cent ³⁶	N/A at this time ³⁷
Increase in visitors for tourism	Number of visitors, patronage on Jardine ferry, patronage at campground	N/A at this time ³⁸
Increase in patronage	Moderate increase in patronage on PDR and Endeavour Valley Road	Good
Increase in agricultural output	\$71.2m increase in Agriculture, Forestry and Fishing in Cook Shire between FY13/14 (pre CYRP) and FY19/20	Good

³⁶ Queensland Government's Statistician's Office (2021). *Queensland Regional Profiles*. Accessed at <https://statistics.qgso.qld.gov.au/qld-regional-profiles>

³⁷ It is not possible to rate this performance standard as there is insufficient information available to disaggregate the impact of COVID-19 and other external market conditions from the benefits of CYRP.

³⁸ Visitor numbers were requested from a number of local tourism operators and local councils. However, no data for the period of interest was available for reporting owing to limitations in data collection and storage.

Table 9: Quantitative outcomes for Criterion 2 - Enhancing existing economic activities

Subcriteria	CYRP Result	Rating
Reduction in operating and maintenance cost savings	Vehicle operating and maintenance cost savings (based on theoretical data)	Excellent
Reduction in freight costs	Increased access road freight relative to sea freight (based on theoretical data)	Excellent
Increase in amount of maintenance on PDR by Indigenous businesses	50 per cent of maintenance on PDR by Indigenous businesses (for existing maintenance)	Good
Reduction in maintenance costs	173km sealed road and only 300m requiring NDRRA repair works.	Excellent

Table 10: Quantitative outcomes for Criterion 3 - Improving health and wellbeing of Cape York residents and visitors

Subcriteria	CYRP Result	Rating
Increased road safety	From FY09/10 to FY13/14 (prior to CYRP), the average number of accidents was 12 per year with a peak of 20 crashes in FY13/14 and this reduced to an average of six per year through construction and post construction to FY21/22	Good
Increase in safe overtaking opportunities	New sealed shoulders with improved space for passing and overtaking movements	Good
Increase in cultural heritage knowledge sharing	242 workers completed the Aboriginal Cultural Heritage Inductions, and 108 local Traditional Owners were employed to provide over 10,000 hours of cultural heritage monitoring	Excellent

Table 11: Quantitative outcomes for Criterion 4 - Reducing adverse environmental impacts

Subcriteria	CYRP Result	Rating prior to CYRP	Rating during construction	Rating ongoing
Improvement in water quality	N/A	Poor	Good	Excellent
Reduction in dust levels	N/A	Poor	Good	Excellent
Reduction in road material lost each year	N/A	Poor	Good	Excellent
Reduction in erosion	N/A	Poor	Good	Excellent
No net loss of habitat/vegetation	N/A	Poor	Good	Good
No loss of terrestrial species	N/A	Poor	Good	Good
Increase in revegetation	N/A	Poor	Poor	Excellent
No impact on fish or other aquatic species	N/A	Poor	Good	Good
Water usage during construction and operation	N/A	Poor	Poor	Excellent
No contamination from construction activities	N/A	N/A	Poor	N/A (construction only)

Table 12: Quantitative outcomes for Criterion 5 - Enhancing community infrastructure

Subcriteria	CYRP Result	Rating
Increase in access from community access roads	Upgraded community access roads for seven communities (noting that Kowanyama reported that the sealing work was not completed)	Good

5.10 Qualitative outcomes

The qualitative performance standards were included in the Evaluation Plan in consultation with TMR in the development of the evaluation framework. For the purposes of the evaluation, the qualitative outcomes leverage the findings of the stakeholder consultations completed to date and mostly rely on anecdotal evidence provided. As such, the qualitative performance standards are used to capture outcomes that cannot be measured quantitatively at this time but can be supported through stakeholder experiences and observations. Table 13 to Table 16 present the results of the CYRP's performance against each standard and the associated rating for each respective criterion.

Table 13: Qualitative outcomes for Criterion 1 - Facilitating economic growth

Subcriteria	CYRP Result	Rating
Increase in new contracts/employment opportunities outside TMR to local businesses (Indigenous and/or non-Indigenous) involved in the CYRP	Moderate increase in employment opportunities For example, RTAW, the Indigenous Employment Opportunity Program, the Army Reserves, Council and other local services employee base	Good
Expansion of CYRP ILUA in national approach	Key aspects from ILUA were picked up and used in national approach	Excellent
Retention of new apprentices	Challenges in retention of apprentices	Poor
Increase in new agricultural activities	No evidence of new farms or new crop types	Poor
Increase in new types of tourism	Increase frequency of tourism trips, types of tourists (e.g. caravans and trailers)	Good

Table 14: Qualitative outcomes for Criterion 2 - Enhancing existing economic activities

Subcriteria	CYRP Result	Rating
Reduction in travel time	Reduced travel time	Good
Enhancement of cattle industry	Reduced livestock lost in transportation (based on theoretical data)	Excellent
Reduction in price of goods	Reduction in price of goods	N/A at this time ³⁹
Reduction in storage requirements for fuel and food	Saving in storage for fuel and food	N/A at this time ⁴⁰

³⁹ Data was requested but not available. However, the benefit of a reduction in price of goods is not expected to be fully realised until the full PDR is sealed.

⁴⁰ Data was requested but not available. However, the benefit of a reduction in storage requirement is not expected to be fully realised until the full PDR is sealed.

Table 15: Qualitative outcomes for Criterion 3 - Improving health and wellbeing of Cape York residents and visitors

Subcriteria	CYRP Result	Rating
Enhanced opportunities for wealth creation	New businesses in the region	Good
Improvement in food security	Reduction in cost of food transport	Good
Improvement in wellbeing of remote residents during wet season	Reduced isolation for residents of remote communities	Excellent
Increase in access to venues for community events	Attendance at community events	Good
Increase in uptake of preventative health services	Change in number of hospital visits because of better access	Good
Improvement in indigenous health outcomes	Improvement in Indigenous health outcomes	Good
Better access to health services	Increase in opportunities for family visits at Cairns and other regional hospitals	Excellent
Reduction in isolation for remote communities	Remote employment positions maintained by young people	Good
Reduced incidents due to night driving	Change in night driving	Good
Increase in access to better food choices in local shops	Uptake of fresh food	Good

Table 16: Qualitative outcomes for Criterion 4 - Reducing adverse environmental impacts

Subcriteria	CYRP Result	Rating
Improvement in open opportunities for scientific research	Improvement in scientific understanding of the region	Good

Table 17: Qualitative outcomes for Criterion 5 - Enhancing community infrastructure

Subcriteria	CYRP Result	Rating
Improvement in community satisfaction	Increase in community satisfaction with project	Good
Improvement in access from boat/barge ramps	New boat/barge ramps in Napranum, Kowanyama and Wujal Wujal	Good
Improvement in waste management	Improvement in waste management in Wujal Wujal	Good

5.11 Summary of chapter

The overall findings of the SEEIA evaluation shows a positive outcome with most of the project outcomes being rated “good” or “excellent” against the evaluation criteria, as outlined in Table 18.

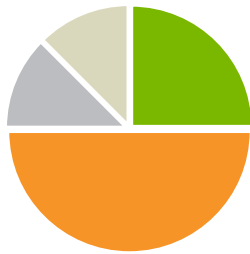
Table 18: CYRP - overall rating by criterion

CYRP Result by Criterion	Rating
Criterion 1 - Facilitating economic growth	Good
Criterion 2 - Enhancing existing economic activities	Excellent
Criterion 3 - Improving health and wellbeing of Cape York residents and visitors	Good
Criterion 4 - Reducing adverse environmental impacts	Good
Criterion 5 - Enhancing Indigenous communities	Good

The overall findings were positive with most of the project rating “good” or “excellent” against the evaluation criteria as shown in Figure 28.

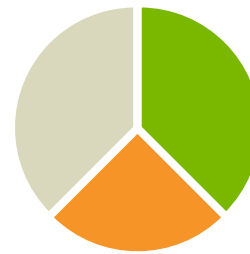
Figure 28: Outcome by criterion

Criterion 1 - Facilitating economic growth



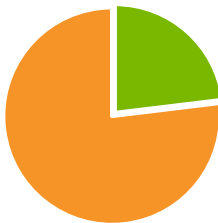
■ Excellent ■ Good ■ Poor ■ N/A at this time

Criterion 2 - Enhancing economic activities



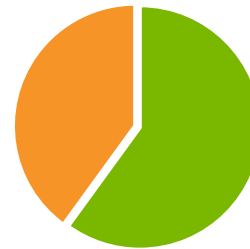
■ Excellent ■ Good ■ Poor ■ N/A at this time

Criterion 3 - Improving health and wellbeing



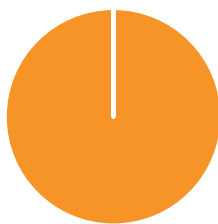
■ Excellent ■ Good ■ Poor ■ N/A at this time

Criterion 4 - Environmental



■ Excellent ■ Good ■ Poor ■ N/A at this time

Criterion 5 - Enhancing community infrastructure



■ Good ■ Poor ■ N/A at this time

6. Conclusions and recommendations

6.1 Purpose of chapter

This chapter summarises the outcomes of the SEEIA and clearly articulate the proposed recommendations. It is structured as follows:

- conclusions
- recommendations
- actions proposed.

6.2 Conclusions

An evaluation of the social, environmental and economic impacts of the CYRP project was undertaken, which consisted of the PDR and Endeavour Valley Road sealing subprograms, as well as the Indigenous community infrastructure works subprogram. The overall findings were positive with most of the project outcomes being rated “good” or “excellent” against the evaluation criteria. The CYRP program is a critical project to facilitate beneficial social, environmental and economic outcomes for the residents and visitors of the Cape York region, as it ensures connection and access to some Queensland’s most remote and disadvantaged communities, contributing to the overall growth and development of the Far North Queensland economy.

6.3 Recommendations

Based on the findings of the evaluation, the evaluation team recommend the actions summarised in Table 19.

Table 19: Recommendations

Recommendation 1: Long term employment, training and upskilling

Detailed requirement	Responsible entity
Develop an action plan to create long-term employment, training and upskilling opportunities for locally-based workforce, including during the wet season.	TMR, other Government departments, local councils and TCICA, contractors.

Recommendation 2: Capture benefits realisation data in real time

Detailed requirement	Responsible entity
Integrate ongoing monitoring and reporting frameworks so that benefits realisation data can be captured in real time and referenced for future stages of work.	TMR.

Recommendation 3: Stakeholder engagement regarding project priorities

Detailed requirement	Responsible entity
Develop an action plan to mitigate unexpected negative impacts. For example, while the CYRP works undertook a segmented approach to align with local employment and training strategies, some stakeholders questioned the prioritisation, timing and sequencing of the upgrades. A mitigation to this misalignment to apply for future stages could involve a community wide consultation or awareness campaign, which is transparent about the timing and expected duration of works.	TMR.

Recommendation 4: Environmental inspections

Detailed requirement	Responsible entity
Undertake a visual inspection of environmental conditions.	TMR, qualified environmental engineer.

The overall findings from this SEEIA showed that, while CYRP resulted in a range of “excellent” or “good” social, environmental and economic impact ratings, the complete benefits realisation for the Cape York region may only be achievable once the PDR and community access roads are sealed in their entirety. Therefore, it is expected that further investigation may be required to determine the viability and timing of such works and that a committed funding source will be required to continue the realisation of the benefits associated with the CYRP program of works.

6.4 Actions proposed

The following actions are proposed for future stages of CYRP and any SEEIAs which may be undertaken in future stages:

- Continue to revisit and update the PLM goals and objectives to ensure the project's strategic rationale remains contemporary and in alignment with TMR and broader Queensland Government strategies
- Continue engagement with the Australian Government and Queensland Treasury as potential sources of funding for future stages of delivery
- Engage in cross-agency collaboration with agencies to ensure data capture remains a priority for post-project delivery assessments and monitoring for socially focussed infrastructure projects, including agencies and bodies such as:
 - Department of State Development, Local Government, Infrastructure and Planning (DSDILGP)
 - Department of Tourism, Innovation and Sport
 - Tourism and Events Queensland
 - Tourism Tropical North Queensland
 - Department of Environment and Science.

While this Evaluation Report can be used as a basis for the consideration of future program funding, additional investigation and stakeholder consultation is required in the short-term to provide further evidence and learnings.

TMR acknowledges the contributions of PricewaterhouseCoopers and Aurecon to this report.