



Bruce Highway
Sarina – Cairns Sub Link
Rest Areas, Stopping Places and Audible Edge Lines

PROJECT PROPOSAL REPORT
Project Scoping, Development & Delivery Phase

Nation Building Program
Brisbane – Cairns Corridor

September 2010

PROPONENT AND PROJECT DETAILS

Proponent Details

A1 ABN/ACN and registered Entity Name

ABN: 39 407 690 291

Registered entity: Queensland Government acting through the Queensland Department of Transport and Main Roads (TMR).

A2 Project Director and/or Manager

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Project Details

A3 Project ID

Bruce Highway (Sarina – Cairns) Heavy Vehicle Rest Area Program

A4 Project Name

Rest Area and Stopping Place Program – Bruce Highway (Sarina – Cairns)

Construct new or upgrade rest areas, stopping places, and audible edge lines on the Bruce Highway (Sarina – Cairns sub link).

A5 Project Scope

Federal Government commitments under Nation Building provided \$5m to deliver 4 heavy vehicle rest areas, 5 stopping places and audible edge line treatments between 2009/10 and 2013/14. Effective delivery years are proposed as 2010/11 – 2011/12.

The proposed scope of works in this Project Proposal Report (PPR) meets those commitments at various locations on the Sarina – Cairns sub link of the Bruce highway.

A6 Geographical References

Please refer to Attachment B for geographical references. Attachment C provides a map of project locations.

A7 Project Summary

The Bruce Highway, at 1,689km in length, represents approximately 5% of the total state-controlled road network in Queensland, with the Sarina – Cairns section being around 766km.

Traffic accident data for the Bruce Highway over the five year period from 1 July 2002 through to 30 June 2007 indicated that there were 1,886 fatal accidents and 23,627 hospitalisation accidents out of a total of 109,304 accidents across the 33,550 km of state-controlled roads in Queensland. Of these 384 fatal accidents (20.3%) and 3,618 hospitalisation accidents (15.3%) out of a total of 16,380 accidents (15.0%) occurred on the 1,689 km of Bruce Highway. The Bruce Highway is contributing a disproportionate number of serious traffic accidents to the road toll experienced across state-controlled road network.

Further examination of truck-related accidents indicates that whilst around 20% of all accidents on these sections of the Bruce Highway are fatigue-related, heavy vehicle fatigue-related accidents account for 22% of total heavy vehicle crashes. Further, 39% of all fatigue-related fatal accidents involve heavy vehicles.

Assessment of the social cost of accidents on the state-controlled road network for the five years up to March 2008 reveals a cost to the community of \$4.068bn.

The provision of rest areas and audible edge lines are known to provide effective safety and fatigue management outcomes, when effectively deployed on road networks.

The works are tailored to address the needs of heavy vehicle drivers through the provision of suitable areas adjacent to roadway, to allow heavy vehicle drivers to stop their vehicles safely, for the purpose of rest as part of fatigue management measures.

Legislative fatigue requirements include mandatory breaks ranging in duration from 15 minutes up to more than 10 hours, dependant on length of journey and work time accrued. Records of rest breaks are required to be maintained in auditable 'Work Diaries' and presented to traffic inspectors upon request.

Stopping places/bays are provided adjacent to the road to provide relatively frequent opportunities for short rest stops. Rest areas are provided to support longer-stay rest stops, and as such are larger, provide more facilities, and where possible are more distant from the roadway in order to allow for effective sleep.

Audible edge lines are used to alert drivers whose vehicles are potentially leaving the defined carriageway. Often, drivers who 'wander' off the road in this manner are fatigued. Once alerted by audible edge line treatments, drivers can utilise the next available stopping place or rest area to stop and address their fatigue before continuing their journey. The program of audible edge lines within this PPR has been targeted at locations with the highest crash rate along the corridor.

The locations of rest areas, stopping places, and audible edge line treatments proposed in this PPR have been nominated and considered on a priority basis as described in the Guidelines for the Heavy Vehicle Rest Area Program (Attachment A).

Strategic locations have been chosen based on extensive analysis of the Bruce Highway, which included a desktop audit of available locations, a physical road trip along the length of the Bruce Highway, and significant input from local departmental staff and industry representatives.

Due to restricted funding provided within this package, those projects proposed have been designed in accordance with the available funds. There continues to be potential to increase capacity and improve amenities provided for individual sites where further funding becomes available, both for sites identified within this PPR or other sites within the Sarina – Cairns link of the Bruce Highway.

A8 Which corridor and section of the National Network is the project located on?

National Network Corridor: Brisbane – Cairns Corridor

Corridor Section: Sarina – Cairns (766km)

Links:

- 10G – Bruce Highway (St Lawrence – Mackay, 156.0km) (*Part, ~33.7km*)
- 10H – Bruce Highway (Mackay – Proserpine, 123.4km)
- 10J – Bruce Highway (Proserpine – Bowen, 63.8km)
- 10K – Bruce Highway (Bowen – Ayr, 112.1km)
- 10L – Bruce Highway (Ayr – Townsville, 78.0km)
- 10M – Bruce Highway (Townsville – Ingham, 121.9km)
- 10N – Bruce Highway (Ingham – Innisfail, 147.6km)
- 10P – Bruce Highway (Innisfail– Cairns, 85.5km)

A9 Under which category of the Act is the project eligible for approval?

Part 3, Division 1, Section 10: (a)

A10 For which project phase(s) is this PPR seeking funding? (select all applicable)

☒ Scoping ☒ Development ☒ Delivery

B. STRATEGIC FIT

B1 Has the Scoping Phase previously been approved? NO

The project consists of a package of individual works at various strategically identified locations on the Bruce Highway (Sarina – Cairns sub link). Individual locations have assessed to varying stages in order to determine final physical design.

B2 Is the project identified in the MOU? YES

B3 Has it been determined that the project has strategic merit through a formal Strategic Merit Test? NO

Individual projects within this package have not undergone specific strategic merit testing,

however the strategic merit of providing stopping places, rest areas, and audible edge lines is well understood, and has previously been determined by state and federal agencies, including the National Transport Commission.

If the answer to all of the above questions is 'NO', do not proceed with completion of this PPR. A project will not be determined appropriate to approve for release of funds unless it has been determined to have strategic merit.

C. PLANNED OUTCOMES AND OUTPUTS

- C1 Describe the performance objectives and intended outcomes for this project. Are there any known risks to the project which will impact on project completion?

The intended outcomes for the works contained in this PPR is a reduction of the numbers and severity of accidents occurring on the Bruce Highway by providing adequate rest opportunities in the form of stopping places and rest areas, coupled with targeted audible edge line treatments to assist with fatigue management and identification of fatigue by drivers.

- C2 Describe how achievement of these outcomes can be measured. What specific efficiency/safety/other metrics are proposed? What targets are proposed for these metrics? (For example advise of time and distance savings and improvement in crash statistics).

Transport and Main Roads undertakes measurements of all recorded accidents annually to identify high risk and high accident areas in the lead up to development of project work nominations within both federal and state funded programs. Measurement of success can be determined by the gradual reduction in fatigue-related incidents identified by post program assessment of the historic accident rate across the whole of the Bruce Highway.

- C3 Identify what baseline data is available for metrics identified in C2 against which to compare data recorded post project completion.

Historical accident data dating back to January 1989 is available to the department, and the Queensland Police service regularly provides accident reports which are used to update the system to capture all reported accidents.

- C4 Describe the planned outputs for this project.

The provision of new rest areas and stopping places, predominantly for use by drivers of heavy vehicles, is the primary aim of this series of works. The provision of these locations assists heavy vehicle drivers to manage fatigue, both for legislative requirements and driver safety purposes. These projects will also provide an improved level of ATLM along sections identified as higher crash risk areas.

D. PROJECT APPROACH AND TIMING

D1 Has private financing been investigated? NO

If 'NO' – outline the reasons behind this decision

If 'YES' – a copy of the formal assessment is to be provided.

There is a funding commitment by the federal government toward rest area initiatives. The type of works involved do not allow for revenue to be derived, and have a very limited ability to attract commercial investment. The works are targeted towards low cost, high safety benefit solutions for all road users, in particular heavy vehicle drivers.

D2 Describe the key milestones and the critical path for the complete project. What is the expected timing of these milestones? What is the current estimated completion date?

To ensure deliverability of the program, works will be scheduled across the life of the program to deliver 4 rest areas, 5 stopping places and \$150k of audio tactile line marking treatments at strategic locations. Attachment B outlines the program of works and delivery schedule in alignment with the proposed funding years of 2010/11 & 2011/12.

Key milestones for the project

2010/11 to 2013/14 rest area work program	
Commence first annual program of works	July 2010
Commence second annual program of works	July 2011
<i>Open to traffic</i>	<i>Progressively as completed</i>

D3 What assumptions have been made in deriving the critical path set out under D2?

Key assumptions include:

- early approval of the program of works,
- availability for tender exemption, under Section 4, sub section 4.1.5 category C of the Notes on Administration, of works that are not feasible or will not be cost effective to deliver by open tender arrangements, are individually minor in nature and invitation of tenders would involve undue additional cost.
- Funding provided as per previously advised profile of \$2m in 2010/11, and \$3m in 2011/12.

- Proposed projects have been designed in accordance with the budget provided. Where further funding becomes available, increase of capacity and improvement of amenity for individual sites may be appropriate.

D4 Has the relevant Proponent representative approved the milestones and critical path?

YES

E. FINANCIAL ANALYSIS

Outturn Cost

E1 What is the anticipated Total Outturn Cost for the project?
(Total Outturn Cost is Base Estimate + Contingency + Escalation.)

Base Estimate:

P90:	\$ 4,646k
+ Contingency:	\$ 4,804k
+ Escalation:	\$5,000K

Refer to Attachment B for proposed funding/delivery profile and Attachment G for program level out turn cost estimates.

E2 What approach has been taken to cost escalation?

Escalation has been applied in an overall way by multiplying the cash flow for a specific year by the expected percentage figure to cover escalation for the entire cash flow in that year.

E3 Provide details of the escalation rate(s) used and the source of those rates.

Escalation rates have been applied per year. TMR monitors the cost increases and future situation and determines an escalation rate to be used for project work. This rate is published in the TMR Roads Implementation Program (RIP) Guidelines annually.

- Estimates within this PPR are based on 2010/11 values, and as such escalation has not been applied for projects within 2010/11.
- Estimates for projects within 2011/12 delivery year include escalation at the 7% rate as published for RIP Development for that year.

E4 What elements of the Total Outturn Cost relate to ineligible costs? Identify the cost elements and the total ineligible cost.

Nil

Benefit Cost Analysis

For Development Phase proposals only.

Does the current P50 estimate exceed the P90 estimate provided on approval of the Development Phase? NO

If 'YES' – complete questions E5 to E10

Is the total outturn cost more than \$50 million? NO

Is the Australian Government contribution uncapped? NO

Did the Scoping Phase identify any cultural, social, environmental or planning issues? NO

If the answer to any of the above questions is 'YES', E5 to E10 must be completed, otherwise complete E5 to E7.

E5 Describe the Base Case in detail highlighting and, where possible, quantifying the deficiencies to be addressed.

The base case for each nomination is the do nothing option. Refer to Attachment F for BCR calculation details.

E6 What Evaluation Period has been used?

The evaluation period used is 25 years with benefits starting from year 1.

E7 Provide disaggregated values for the Base Case and the preferred option in the attached spreadsheet and a summary in the tables below:

Refer to Attachment F for details of the BCR calculation.

Option Evaluation Summary

E8 What options were investigated? Provide details of option scoring on economic, environmental and social performance where available. State assumptions made in comparing options and which option is preferred.

Due to the nature of the projects, being low-cost, comparatively simple, and reliant on localised conditions, other options were not considered.

E9 How did public participation help to identify the preferred option(s)?

Industry input has been undertaken as part of the TMR Heavy Vehicle Rest Area program. Inputs to the final site locations include information from industry groups such as the Qld Trucking Association and operators.

E10 Where viable options exist, IBCR should be provided in the following table.

Not Applicable.

F. RISK AND GOVERNANCE

Identify the major risks, and proposed mitigation strategies, to successful delivery of this phase and the overall project. Specific details are required regarding the contracting method if alliance contracting is being used.

Due to the nature of the program of works, the most significant risks to successful delivery of works in 2010/11 – 2011/12 period will be the time and resources needed to design and tender the projects within the recommended works. The nature of the proposed works require the consideration of tender exemptions, due to the disproportionate cost of tendering minor works and the limit this may place on value for money procurement. Mitigation will be sought through tender exemption.

Further risk is identified for projects planned for the 2010/11 year where endorsement of the program of works is delayed. Where this eventuates, extension of delivery timeframes may be sought for larger projects within the 2010/11 year.

F1 Is a tender exemption being sought? If so, refer to 4.1.5 (State or State authority must call for public tenders for certain work) for requirements and attach a letter as stipulated in that Section. For Part 6 projects not proposing to call for public tender, detail how the proposed procurement strategy will meet the value for money requirement.

Yes, tender exemptions for individual projects will be developed in consultation with National Programs Branch.

It is considered that under Section 4, sub section 4.1.5 category C of the Notes on Administration, works that are not feasible or will not be cost effective to deliver by open tender arrangements, or are individually minor in nature and invitation of tenders would involve undue additional cost, can be considered to tender exemption.

Further, interactions between other Nation Building programs, such as the Strengthening and Widening Program, may allow for synergies to be leveraged in a more flexible manner, thus providing increased value for money.

Due to the nature of the program of works within this PPR, the time and resources needed to design and tender the projects within the recommended works will add significant cost to the projects and thus reduce potential outcomes, particularly given the relatively minor costs associated with the majority of the proposed projects.

The nature of the proposed works requires the consideration of tender exemptions, due to the disproportionate cost of tendering minor works, and the limit this may place on value for money procurement.

- F2 If applying for Development or Delivery Phases, will this project trigger any environmental or cultural legislation? Detail how these requirements are addressed in the proposed project scope.

Environmental and Cultural impacts are not expected to be significant however full departmental standards will be applied to all works under the program to meet any legislative requirements. Works will only involve sites within the existing road corridor therefore there is limited exposure to environmental or cultural legislative requirements.

- F3 How will public and stakeholder participation be facilitated during this project?

Consultation will primarily consist of meetings and discussions with those stakeholders that are directly affected by the relevant works, such as adjacent property owners, transport industry and service infrastructure owners (Telstra and Ergon). However, additional consultation may include, but not be limited to reference groups, work shops, public displays and newspaper advertisements as appropriate to relevant works. All public consultation will be in accordance with the Department's Community Engagement Policy July 2008.

G. SUPPORTING DATA

ATTACHMENT A: Guideline for the Rest Area Program

ATTACHMENT B: Program of Works

ATTACHMENT C: Project Location Map

ATTACHMENT D: Audio Tactile Line Marking (ATLM) Prioritisation

ATTACHMENT E: Core Project Cost Estimate Summary

ATTACHMENT F: Benefit Cost Analysis

ATTACHMENT G: Out Turn Cost Table

ATTACHMENT H: Impact of funding on program delivery

I acknowledge the information set out in this PPR is an accurate representation of available information.



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Transport and Main Roads

Date: 27/9/10.....