Collaborative contract approach to high risk environmental management through provisional sum payment method

Bruce Highway – Cooroy to Curra, Section C: Traveston to Woondum

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Agenda

- Project overview
- Key drivers for change
- Development of Contract Specifications
- Project environmental details
- Provisional sum method in practice
- Conclusion.
Cooroy to Curra

61 km upgrade and realignment of the Bruce Highway from Cooroy to Curra (C2C)

- **Section A** - Cooroy Southern Interchange to Sankeys Road (under construction)
- **Section B** - Sankeys Road to Traveston Road (complete)
- **Section C** - Traveston to Woondum (construction commenced March 2016)
- **Section D** - Woondum to Curra. (detailed design – contract awarded)
Section C – Major works

- 10.5 km of new highway between Traveston and Woondum
- Replaces approximately 13 km of existing highway with high crash history
- Four lane formation – dual carriageway with concrete barrier
- Realignment of local roads and connections.
Section C – Project features

- 1.7M cubic metres of earthworks cut to fill
- 13 bridge structures at 7 locations (4 over waterways, 3 over roads)
- 34 transverse culverts up to 2100mm diameter
- Permanent sediment basins at key locations
- 4 permanent creek diversions.

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut</td>
<td>1,672,000 m³</td>
</tr>
<tr>
<td>Fill</td>
<td>1,700,000 m³</td>
</tr>
<tr>
<td>Topsoil strip</td>
<td>73,000 m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Structure Name</th>
<th>Number and length of spans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traveston Creek</td>
<td>1 x 29m, 2 x 28.5m</td>
</tr>
<tr>
<td>Kybong Creek</td>
<td>2 x 28.5m</td>
</tr>
<tr>
<td>Cobbs Gully</td>
<td>1 x 29m, 2 x 28.5m</td>
</tr>
<tr>
<td>Jackass Creek</td>
<td>1 x 29m, 2 x 28.5m</td>
</tr>
<tr>
<td>Tandur Road</td>
<td>1 x 28m</td>
</tr>
<tr>
<td>Woondum Road</td>
<td>1 x 24m, 2 x 18m</td>
</tr>
<tr>
<td>Woondum Interchange</td>
<td>1 x 34.6m</td>
</tr>
</tbody>
</table>
Key drivers for change

- Experience from previous sections of C2C
- Correspondence between Director General’s (Department of Environment and Heritage Protection and Transport and Main Roads)
- Regulation of management of erosion and sediment control by federal and state regulators
  - Key aspect in Environmental, Protection, Biodiversity and Conservation Act (EPBC) approval for C2C-A and C2C-C
- Contractors underestimating cost of environmental management on a project.
Key drivers for change (cont.)

- Recognition of site conditions and importance of these to the planning, implementation and management of erosion and sediment control

- Local community pressure to undertake construction activities in an environmentally responsible manner
Contract approach

• Two-stage tender process adopted with initial stage 100% non-price criteria (high weighting on environmental approach and performance)
• Remove risk of ‘under pricing’ environment in tender stage
• $6 million provisional sum included for temporary environmental controls
  - Contract structured for collaborative approach
  - Contractor works with Administrator/Principal to design treatments
    - Implementation costs negotiated for each approved plan.
• Items from MRTS51 and MRTS52 not used directly – work operations included in Supplementary Specification.
Section C – Environment

• Sensitive receiving environment – Mary River Catchment
  - Four major creek crossings and waterway diversions: Traveston Creek, Kybong Creek, Cobbs Gully and Jackass Creek
• Matters of national environmental significance – aquatic species
  - Mary River turtle
  - Mary River cod
  - White-throated snapping turtle
  - Wallum sedge frog
• Protection of water quality is one of the key environmental priorities for the project.
Section C – Environment (cont.)

• Environmental management represents significant risk to successful delivery of the project

• Matters of national environmental significance – terrestrial species
  - Koala
  - Grey-headed flying-fox

• Federal and state government approvals
  - Erosion and sediment control a key aspect in EPBC approval as a result of impact to aquatic species
  - Protection of water quality conditioned in the approval.
Project delivery

- Major works contract awarded to CPB Contractors in February 2016 (Transport Infrastructure Contract – Construct Only)

Progress to date

- Pioneering works complete, including installation of sediment basins
- Clearing commenced in April
- Permanent diversions of major waterways complete
- Bulk earthworks in progress
- Bridge construction in progress
- Drainage structure installation nearing completion.
Contract requirements

• Overarching Erosion and Sediment Control Plans (OESCPs) at key milestones
• Weekly updates of the OESCP in monthly reports
• Suitably qualified personnel to be employed for planning and implementation of erosion and sediment control measures
• Critical milestones to ensure works in major watercourses are completed before the wet season
• Incident management procedure for repeated environmental non-conformances.
Provisional sum method in practice
Provisional sum method in practice

- Taken south of Cut 4 on Sunday Morning @ 10am
- Basins turning due to broad acre gypsum application
- Site generally draining well
Provisional sum method in practice
Key measures of success

• Procurement of a contractor with a strong environmental focus and capability
• Best practice erosion and sediment controls (as defined by Industry and key stakeholders including regulators)
• Nil infringement notices
• Early identification and rectification of issues (rapid and willing response to audit recommendations from contractor)
• Positive feedback from regulators and community.
Results to date

• Collaborative approach between the construction contractor, contract administrator and the department
• Proactive approach to environmental management within all levels of the construction contractor’s team
• Positive response from the regulator after the first major rain event since the commencement of construction
  - Early installation of major controls
  - Proactive governance structure, including requirement for an independent auditor
  - Culture of openness and transparency
• Well received by local community.
Conclusion

• Environmental management is not under-priced during the tender phase
• Controls being implemented are well planned and effective. No reluctance due to tendered price
• Driven culture of environmental importance within contractors team
• Lessons learnt
  - Stricter controls for provision and details of fee
  - Clear outline in contract documents as to how pricing is to be provided and what is included
  - Include requirements in Contract Administrator brief.
Thank you