



## **BRIDGE TECHNICAL DIRECTION BTD2009/02**

### ***MANAGEMENT OF BRIDGE REHABILITATION DESIGN PROJECTS***

#### **Background**

Procedures for the management of bridge rehabilitation design projects have been revised to ensure quality advice and design are provided which meet the timeframes required for maintenance work to proceed, and ensure the timely delivery of the RTA's Bridge Maintenance Program.

This Technical Direction sets out the agreement between Infrastructure Asset Management Branch, Bridge Rehabilitation Design Section of Bridge Engineering and RTA's Regions in the delivery of bridge rehabilitation designs.

#### **Information**

Preparation of detailed designs for bridge rehabilitation works can be very complex, involving significant lead times for the various design stages and for environmental assessment. This is especially the case with older heritage classified bridges.

As well, the Bridge Maintenance Program allocates funds for bridge maintenance work on the basis of keeping a consistent risk profile for RTA's bridges across NSW.

Accordingly, it is important that bridge rehabilitation design work across the State is coordinated and managed effectively, the bridge design needs and the progress of designs are communicated and coordinated effectively, and innovation is transferred from one job to the next.

Close alliance between Infrastructure Asset Management Branch, Bridge Engineering and the Regions are essential to achieve these objectives.

#### **Bridge Technical Direction**

Bridge rehabilitation design projects shall be managed as follows.

- **Master Schedule**

The Master Schedule comprises a 3 year rolling bridge rehabilitation design schedule, showing design projects to be carried out in-house and outsourced and the broad timeframes for concept design, approval, detailed design and the planned construction period.

Only those projects on the Master Schedule shall be designed in accordance with the time frame specified therein.

The Master Schedule shall be reviewed 3 times per year in April, August and December, and re-issued.

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Circular Number:	BTD2009/02

- **Design Project – Commencement**

A project brief shall be provided from the Region requesting design work. A template for the project brief is attached (Attachment A). Design work shall not commence without this brief being provided.

Bridge Rehabilitation Design Section will consult with the Region and then respond to the brief with a project plan to be agreed to by the Region. A template for the project plan is attached (Attachment B).

The agreed timeframes in the project plan may change due to scope changes and delays outside the control of Bridge Rehabilitation Design Section. In such instances the reasons for changes shall be forwarded to Regions for concurrence.

- **Design Project - Execution**

Each of the key design stages - concept design, environmental/heritage assessment and final design - require consultation and approval/agreement between Bridge Rehabilitation Section and the Region.

Setting and determining the technical aspects for the design project shall be detailed on Form 62R. Form 62R shall be completed by Bridge Rehabilitation Design Section and forwarded to the Region for concurrence to the concept design.

A final design report shall be prepared on completion of the detailed design by Bridge Rehabilitation Design Section detailing departures from the agreed Form 62R.

Bridge Rehabilitation Design Section shall provide each Region with reports every 2 months on the progress of each design project.

- **Use of External Consultants**

Projects to be outsourced to external consultants shall be selected based on their technical risk to the RTA. Outsourced work shall be managed through Bridge Rehabilitation Design Section. Projects agreed by the Senior Bridge Engineer, Bridge Rehabilitation Design as being low technical risk may be managed by the Region.

The management requirements for design projects carried out by external consultants shall be the same as for in-house design projects.

- **Communication**

The monitoring of the progress of the projects on the Master Schedule shall be the responsibility of the designated Program Manager. Technical bridge design issues shall be addressed by the respective Supervising Bridge Engineer.

**Effective date:** 14/07/2009

**Approved:** Wije Ariyaratne  
Principal Bridge Engineer

**DISTRIBUTION:**

Publication on RTA's Intranet and the Internet

The circulation list for the Bridge Technical Direction Manual

All Bridge Engineering Staff and Skill-Hire Contractors

Corporate Documentation Registrar

Manager, Road Information and Asset Management Technology

Manager, Project Management Office

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xxxx Region  
 Brief for Design of Rehabilitation Works  
 on  
 XXXX Bridge (BN XXX)

Date: xxxxxx

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## 1.0 Introduction

(This should be a very short description of the work required under the brief.)

## 2.0 Bridge Location

## 3.0 Background

(Provide a clear description of the bridge, outline what is the issue, advise what has been done to date, indicate the potential solution if known, and advise the urgency for repair.)

## 4.0 Design Requirements

(Outline any requirements which should be taken into account during the design, and outline the design work required under the brief. The sub headings below are suggestions.)

- 4.1 General
- 4.2 Assumptions and Parameters
- 4.3 Heritage and Other Requirements
- 4.4 Concept Design
- 4.5 Detail Design

## 5.0 Output Requirements

(Sample below)

Item	Requirement	Due Date
1) <i>Project Program and Cost Estimate</i>	<i>Region to advise milestones for completion of stages along with a cost estimate.</i>	
2) <i>Communication</i>	<i>Bridge Rehabilitation Section to submit a brief electronic report every 2 months to ensure the Region is kept fully informed of the status of the project. Liaise with the Region as required to discuss and resolve project related issues as they arise.</i>	
3) <i>Concept Design</i>	<i>Bridge Rehabilitation Section to prepare and submit a concept design report for the preferred rehabilitation options.</i>	

4) <i>Review Meeting</i>	<i>Stakeholders to attend concept design review meeting via teleconference to discuss the details in the concept design report and to determine which option is selected for the project.</i>	
6) <i>Detailed Design</i>	<i>Bridge Rehabilitation Section to prepare and submit the detailed design report.</i>	

## **6.0 Date for Completion of Work under the Brief**

(Advise the due date for completion of work under the brief and the reason the date was selected, for example urgent repairs (reference point 3.0 above). Also confirm the availability of funding and the expected date for start of construction work.)

## **7.0 Bridge Engineering Proposal and Estimate**

A proposal from Bridge Engineering to complete this brief, including a project program and estimated cost is required before work proceeds. Bridge Engineering is to advise its contact person.

## **8.0 Attachments**

Eg. Inspection reports, investigations, survey etc.,

## **9.0 Contact Persons**

The Regional representative for this design project is xxxx.

## **10.0 Photographs**

Authorised:

# BRIDGE REHABILITATION DESIGN PROJECT PLAN

<Bridge Name, location and number>

## 1 INTRODUCTION

### 1.1 GENERAL

Bridge Engineering has been engaged by <Client> to undertake <Description of the Works> as described in its brief of <date>.

### 1.2 PURPOSE OF PROJECT PLAN

The purpose of this Project Plan is to advise Regions how the projects will be delivered to meet their expectations.

- Clarifying the project objectives in terms of scope, time, cost and quality.
- Identifying the organisational structure necessary to deliver the project and clarifying the key roles and responsibilities of each section or individual in the structure.
- Clarifying lines of communication, hold points and proposed reporting.
- Outlining the project delivery schedule and resources required.

## 2 PROJECT DESCRIPTION

### 2.1 BACKGROUND

## 3 PROJECT OBJECTIVES

## 4 PROJECT SCOPE

### 4.1 Scope Statement

### 4.2 Assumptions/Constraints

The following assumptions are made;

The following are constraints on achieving project objectives;

### 4.3 Exclusions

The following items are excluded from the Scope of work;

### 4.4 Related Projects

## 5 PROJECT RESOURCING

### 5.1 Key Personnel

Following are the key people involved in the delivery management of the project

- **The Region's representative** for the design project is <Title>, <Section> , Name> ph <phone> and is responsible for <responsibility>
- **Senior Bridge Engineer (Rehabilitation Design) or Representative** is. <Title>, <Section> , Name> ph <phone> and is responsible for resource allocation for the programme, project management and communication to the Region's representative
- **Project Designer** is <Title>, <Section> , Name> ph <phone> and is responsible for execution of design activities in accordance with this project plan.

## 5.2 Other Resources

# 6 COMMUNICATION

## 6.1 Communication with Client

Meetings  
Reports

## 6.2 Communication with Others

# 7 PROJECT DELIVERABLES

Output	Due Date

# 8 PROJECT RISKS

Risk	Risk Status (H,M & L)	Response

# 9 PROJECT MANAGEMENT

## 9.1 Estimate

The cost estimate for the delivery of the programme of works is <\$XX,XXX>. Details are shown in **Attachment 1**.

## 9.2 Scheduling

A bar chart showing the delivery of the <list phases or major activities>, project decision hold points and timeframes is shown in **Attachment 2**.

## 9.3 Scope, Time and Cost Control

The approved schedule will be monitored to control time. Costs will be monitored on a monthly basis and tabulated into a performance table. Any variances from the approved time and cost schedule will be raised in the Clients monthly report and reasons for the variance.

Any time and cost variations to the project as a result of Clients instruction or an event outside the Scope of works will be forwarded to the Client for approval prior to updating the budget limits and time schedule.

## 9.4 Quality Assurance

### 9.4.1 Quality System

The project will be delivered under the Engineering Technology Branch Quality System.

### 9.4.2 Risk Management

Risk Management will be incorporated, and risks will be reviewed and further developed early in the project. Consider the risks associated with developing and delivering the design, constructability and ongoing bridge maintenance and operation and address the interests of key stakeholders. Review and develop at project team meetings and report on in project progress reports.

**Project Plan prepared by:**