

BRIDGE POLICY CIRCULAR

BPC2002/05

SUBJECT: BRIDGE CONCEPT

No. Sketches Following	0	No. Appendix Sheets Following	9 6
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Background

In the past the RTA had a system for ensuring that all bridge concept designs were considered by both experts in bridge engineering and the local manager to ensure that the bridge would fulfil its function at an acceptable cost. In the early 1990's, this system fell from use, with increasing decentralisation of the Authority and changes in the authority exercised by Project Managers. Unfortunately, this has sometimes meant that long term aspects of the asset ownership have not been fully explored. In some instances, inappropriate designs and designs not conforming to RTA policies and standards have been constructed.

In such cases, the RTA may be left with a structure that does not perform adequately and has high ownership costs.

Current Position

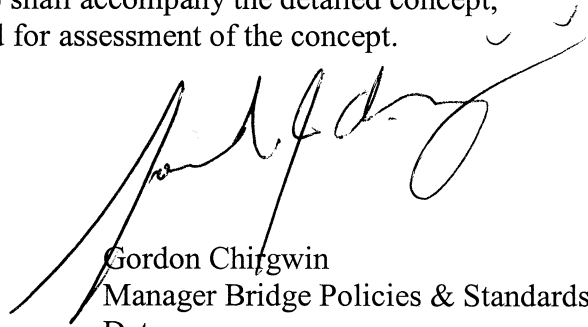
It is important that the collective bridge design and bridge maintenance knowledge in the RTA is utilised to ensure the best life cycle outcomes in bridgeworks. It has been also recognised that Project Managers and Asset Managers need more support in their decision-making, to ensure that the outcomes of projects are the most appropriate, and to also ensure that innovative solutions are applied in full knowledge of the risks involved.

To this end, it is considered important that project managers and asset managers avail themselves of advice and support in their decision making in regard to designs for new and replacement bridges and related structures. This will ensure that the outcomes of projects are the most appropriate. In addition, it will ensure that innovative solutions are reviewed in terms of their suitability and of the risks involved

Bridge Section of RTA has a formal process for ensuring that the design has appropriate comment from the Project Manager and the relevant Asset Manager and experts within Asset Management Branch through the Project Manager. It has been decided to make this process mandatory for all projects, regardless of the method of procurement.

Action Required

All detailed concept designs for new bridgeworks, including bridge sized culverts, shall be forwarded by the Project Manager to Manager, Road and Bridge Technology for concurrence prior to acceptance. A completed "Bridge Design Proposal" form (Bridge Section Design Form DF062, copy attached) shall accompany the detailed concept, Drawings and any additional details required for assessment of the concept.



Gordon Chirgwin
Manager Bridge Policies & Standards
Date 21/3/2002

DISTRIBUTION:

- All Bridge Section staff and Skill Hire Contractors
- All registered holders of controlled copies of Bridge Section Standard Drawing sets
- All holders of controlled copies of the Bridge Policy Manual
- General Manager, Private Ventures
- General Manager, Project Management Services Branch
- General Manager, Sydney Client Services
- Freedom of Information Manager (Hard Copy and Electronic)
- Project Manager Quality, SIS Section (Electronic)

ROADS AND TRAFFIC AUTHORITY, NSW
BRIDGE DESIGN PROPOSAL - SUMMARY AND APPROVALS

Project No.:

Sketch No.:

RTA Region:

Road No.:

Local Government Area:

Project:

REASON FOR NEW BRIDGE:

PROPOSED BRIDGE

Number and Length of spans: Overall Length: m
 Bridge width: Between traffic barriers m Overall: m
 Number of footways: Width: m Side:
 Type of wearing surface:
 Superstructure:
 Substructure:
 Clearances:
 Special Features and requirements:

ALIGNMENT

Horizontal Alignment: Straight/Curved Bearing ° ' " Radius m Skew ° ' " L/R

Vertical Alignment Grade: Summit/Sag Curve: m

Datum:

Chainages at end of deck: Abutment A Abutment B

Levels at end of deck: Abutment A Abutment B

Source of horizontal and vertical alignment information:

(eg: Bridge Site Survey Drg No, Moss File etc)

ESTIMATED COST AND PROGRAMME

Estimated construction cost* = Deck area** m² x estimated unit rate \$/m²
 = x = \$

* Cost does not include any allowances for design, supervision or cost variations

** Deck Area measured between bottom faces of parapets + clear footway width

Recommended	Concurrence	Submitted	Approved
Mgr Bridge Design Projects	Mgr, Bridge Engineering	RTA Project Manager	Mgr, Bridge Engineering
***Consultant's Rep	*** Consultant's Director		*** RTA Regional Mgr
Date:	Date:	Date:	Date:

*** Other than RTA Bridge Branch in-house or managed designs

BRIDGE DESIGN PROPOSAL

Project No.:

Sketch No.:

EXISTING BRIDGE

Drawing No.:

General File No.: _____

Year Constructed: _____

Type of substructure:

Type of superstructure:

Width between parapets or kerbs: m Footways:

Length: m Number of spans:

Deck level RL: Above H.F.L.: Yes/No Navigation Clearance:

Condition (incl. any load rating):

Proposed future use of existing bridge:

Public Utility Services: (No off, size and type)

CLEARANCES

Horizontal:	Actual	m from
	Required	m
Vertical:	Actual	m above
	Required	m

APPROACH ES

Road Plans No. (or File No.):

Design Speed: km/hr

No. of Lanes:

Median Width: m

Shoulder Widths: m

Verge Width: m

Formation Width: m

BRIDGE DESIGN PROPOSAL

Project No.:

Sketch No.:

WATERWAY

WATERWAY REPORT

No:

Date:

General Comments:

Catchment Area	km ²	Observed H.F.L. (Date: _____)	m
Calculated Discharge	m ³ /s	Normal Water Level	m
Calculated Flow Velocity	m/s	Tidal Yes/No	MHWS MLWS
Calculated H.F.L.	m	Is stream navigable	Yes/No m
(including afflux of)	m	Estimated Depth of Scour	

Proposed Clearance:

m above observed/calculated H.F.L

SUBSTRUCTURE

GEOTECHNICAL REPORT

No.

Date

Geotechnical Investigation completed

Yes/No

Further Geotechnical Investigation Required

Yes/No

FOUNDATIONS

Founding material:

Type of foundations:

(Spread footings

or

pile type)

Abutments:

Piers:

Allowable Bearing Pressure:

kPa

Maximum Pile Working Loads:

Abutment Piles

kN

Pier Piles

kN

Pile Cap Levels:

RL

Pile Contract Levels:

Abut A RL

Abut B RL

Piers RL

Basis for determination of Contract Levels and type of foundations:

OHS Factors considered in selecting type of foundation:

BRIDGE DESIGN PROPOSAL

Project No.:

Sketch No.:

PROVISIONS FOR PUBLIC UTILITY SERVICES ON THE PROPOSED BRIDGE:

	Water	Sewer	Gas	Electricity	Telstra	Other
Number						
Size						
Side						

DRAINAGE: Scuppers Yes/No
 If no scuppers, is width of flow contained in shoulder Yes/No
 Piped stormwater under deck necessary Yes/No

LIGHTING: Yes/No

BARRIER TYPES:

Traffic:

Pedestrian:

Median:

Between carriageway and footway:

Safety Screens:

Noise Walls:

DURABILITY

Exposure Classification:

Soil/Water Aggressivity:

SPECIAL REQUIREMENTS (add attachments summarizing relevant requirements if yes)

Environmental (eg EIS, REF): Yes/No
 Fisheries: Yes/No
 Heritage: Yes/No
 Navigation (MSB, DPW): Yes/No
 Planning (DUAP): Yes/No
 Other: Yes/No
 Has Pier and Abutment position been pegged: Yes/No
 Is more pegging required: Yes/No

BRIDGE DESIGN PROPOSAL

Project No.:

Sketch No.:

CONCURRENCES

Concurrence in Road Design Aspects:

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RTA Project Manager

Has Risk Assessment been done?:

Yes/No

If no Risk Assessment, is one required?:

Yes/No

.....
RTA Regional Asset Manager

Concurrence with Asset Management Aspects:

- Bridge Design
- Road Design

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Manager, Road & Bridge Technology
Asset Management Branch
Client Services Directorate
