VicRoads Supplement

to the

Austroads Guide to Bridge Technology

VicRoads Supplement to the Austroads Guide to Bridge Technology Revision Record

Rev. No. Date Released	Section/s Update	Description of Revision	Authorised By
Rev 1 July 2010	First Edition		
Rev 2 Jul 2013	Second Edition	Revisions to section 3.0 Deletion of Section 4.0 following publication of revised Part 5	M. Fantin Principal Bridge Engineer

1.0 General

1.1 INTRODUCTION

The Austroads Guide to Bridge Technology (the Guide) comprises seven parts:

Part 1: Introduction and Bridge Performance

Part 2: Materials

Part 3: Typical Bridge Superstructures, Substructures and Components

Part 4: Design Procurement and Concept Design

Part 5: Structural Drafting

Part 6: Bridge Construction

Part 7: Maintenance and Management of Existing Bridges

Further information regarding the scope and contents of each of the seven parts can be obtained by reference to the Guide.

Appendix A comprises two extracts from the Guide which give an introduction to the structure of the Guide and its relationship to bridge design standards.

1.2 ADOPTION

The following is an extract from the formal statement of adoption:

VicRoads adopts the principles laid down in the Austroads Guide titled the Austroads Guide to Bridge Technology Parts 1 to 7 and considers that these over-arching documents provide the framework for design and management of the bridges (and other highway structures) in the state of Victoria.

Further to the discharge of these responsibilities and to specify its detailed requirements, VicRoads makes reference to its own technical notes, manuals, guides, codes of practice and other technical documents as listed in the attached Supplement.

VicRoads adopts parts 1, 2, 3 4, 6 and 7 of the Austroads Guide to Bridge Technology as a source of information.

Part 5 is adopted as a drafting standard.

1.3 THE SUPPLEMENT

With the exception of Part 5 Structural drafting, the Austroads Guide to Bridge Technology is a general reference document that highlights certain important aspects of bridge technology and identifies options for design, construction and asset management of highway structures.

The purpose of this supplement is to identify the documents that contain VicRoads' specific requirements for the design, construction, procurement and management of its highway structures.

1.4 HIERARCHY OF DOCUMENTS

The order of precedence of documents shall be as required by the contract. Supplements and documents listed in supplements shall take precedence over the Austroads Guide to Bridge Technology.

2.0 Supplement to the Austroads Guide to Bridge Technology

Part 1: Introduction and Bridge Performance
Refer to the general supplement for 1, 2, 3 4, 6 and 7 in section 3.0.

Part 2: Materials
Refer to the general supplement for parts 1, 2, 3 4, 6 and 7 in section 3.0.

Part 3: Typical Bridge Superstructures, Substructures and Components
Refer to the general supplement for parts 1, 2, 3 4, 6 and 7 in section 3.0.

Part 4: Design Procurement and Concept Design
Refer to the general supplement for parts 1, 2, 3 4, 6 and 7 in section 3.0.

Part 5: Structural Drafting
There is no supplement to part 5.

Part 6: Bridge Construction
Refer to the general supplement for parts 1, 2, 3 4, 6 and 7 in section 3.0.

Part 7: Maintenance and Management of Existing Bridges
Refer to the general supplement for parts 1, 2, 3 4, 6 and 7 in section 3.0.

3.0 Supplement to Austroads Guide to Bridge Technology

Parts 1, 2, 3 4, 6 and 7

Subject to the order of precedence stated in 1.4 and the order of precedence stated in individual contract documents:

3.1 BRIDGE TECHNICAL NOTES

The following documents give VicRoads' specific requirements for the design of highway structures and must be read in conjunction with AS5100:

- Bridge Technical Notes published on the VicRoads website

3.2 OTHER DOCUMENTS

3.2.1 MATERIALS

The following documents give VicRoads' specific requirements for bridge materials and materials testing:

- VicRoads Standard Specification
- VicRoads Standard Shell Documents
- Codes of Practice, Technical Notes and Technical Bulletins for materials and materials testing prepared by VicRoads Technical Services

3.2.2 STRUCTURAL INSPECTION

The following document gives VicRoads' specific requirements for the inspection of highway structures:

- VicRoads Road Structures Inspection Manual

APPENDIX A

EXTRACT 1 FROM PART 1 OF THE GUIDE

INTRODUCTION AND GUIDE STRUCTURE

Scope

The purpose of the *Guide to Bridge Technology* is to provide guidance to bridge owners and authorities on technology related issues relevant to bridge ownership, design procurement, vehicle and pedestrian accessibility and bridge maintenance and management practices, including the use and application of Australian and New Zealand bridge design standards. Bridge owners are a diverse group including state road authorities, toll road concessionaires, local governments, private landowners and businesses such as shopping centre owners.

The Guide has also been written with the young engineer in mind particularly those recently graduated, and looking at specialising in the design and construction of bridges. It provides a step by step approach to bridge construction, discussing the learning's from the past, the planning process, building materials commonly used, the various types of bridge designs, the issues to consider at the design stage and the management and ongoing maintenance issues of completed structures.

The *Guide to Bridge Technology* compiles existing available material from Austroads members and elsewhere into a Guide which provides an Australasian approach to bridge technology that covers the majority of road authority requirements. The guide also identifies and references specific locally applied areas of practice or standards.

A particular output of the Guide is to identify issues where further study and research may provide benefits.

EXTRACT 2 FROM PART 1 OF THE GUIDE

RELATIONSHIP TO THE BRIDGE DESIGN STANDARDS

Bridges in Australia and New Zealand are designed to the requirements of AS 5100 *Bridge Design* (Standards Australia 2004), and the Transit New Zealand *Bridge Manual* (2003) respectively. The *Guide to Bridge Technology* is not intended to replace or override the requirements of those bridge design standards, but it is intended to provide an awareness of issues to be considered in bridge design and bridge management, such that those involved in using the bridge design standards will be better equipped to apply and interpret the bridge design standards to achieve the best design outcomes. It is intended that the *Guide to Bridge Technology* will complement AS 5100 and the Manual, and that the publications will have consistent technological bases. This applies not only to the design of bridges, but also in the assumptions made in the bridge design process, for example, to the effectiveness of site investigations and geotechnical investigations and to the choice of design parameters as a result of those investigations, and to:

- the quality control exercised in fabrication
- supervision on site
- the control of unavoidable imperfections
- qualifications, experience and skill of all personnel involved
- documentation of design assumptions to ensure control over the conditions of use of the structure over its life
- application of statistical methods and documentation of construction process and material properties.

The Guide to Bridge Technology is written on the basis that management control and supervision by experienced professional engineers shall be undertaken at all stages of the design and construction, to prevent the occurrence of gross errors.