

# PREQUALIFICATION SCHEME

## ROAD AND BRIDGE DESIGN GROUP

- Eligibility Criteria
- Categories and levels

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Department  
of Transport

**ROAD & BRIDGE DESIGN**

<b>Category</b>	<b>Levels</b>	<b>Abbrev</b>	<b>Page No</b>
Road Design	Rural Road	RR	4
	Urban Road	UR	5
	Freeway	FD	5
Water Sensitive Road Design	Modelling & Design	WSRD	6
Hydrologic & Hydraulic Design	Simple	SH	7
	Complex	CH	7
Bridge Design & Other Structures	Simple Structures	SS	8
	Complex Structures	CS	9
Proof Engineering	Structures	PE	10
Surveying	Aerial Photography	AP	11
	Photogrammetric Mapping	PM	11

**Group: ROAD & BRIDGE DESIGN**

**All Categories Common Eligibility Criteria – applicable to all Categories & Levels in Road & Bridge Design**

This category of pre-qualification incorporates works associated with road and bridge design and survey. It includes road design (rural, urban & freeway), water sensitive road design (WSRD), hydrologic & hydraulic design (simple & complex), bridge design (simple structures, complex structures & culverts), proof engineering (structures), surveying (aerial and photogrammetric mapping) and landscape and urban design.

**Review**

All pre-qualified consultants/contractors in this category will be subject to regular review incorporating but not limited to the company’s technical capability, on-going performance, on-going evidence of experience within road & bridge design projects, construction projects, maintenance of key personnel or notification of changes in key personnel/resources, adequate management systems or insurance, timeliness of response, etc. Failure to maintain such requirements may result in removal of prequalification status.

All pre-qualified consultants/contractors in the Road & Bridge Design category will be required to participate in regular reviews of performance in relation to the performance assessment eligibility criteria. A formal reassessment of all road and bridge design consultants/contractors will be undertaken every 3-5 years with the maximum review period not exceeding five years.

Companies applying for prequalification may be requested to attend an interview at VicRoads regarding its application for prequalification or at any stage in reviewing a company’s prequalification.

**Common Eligibility Criteria**

To be eligible, as a minimum, a Company must demonstrate:

- Personnel currently employed with demonstrated experience and skills in the area of competency for the pre-qualification level.
- Previous relevant experience and satisfactory performance in the areas of competency described for the pre-qualification level within Victoria and/or Australia.
- Qualifications as a practising professional design company or department within a company located in Victoria and/or Australia.
- Quality systems that are third party certified to AS/NZS ISO 9001-2016 standard, operational/audited to VicRoads requirements or NATA certification.
- Occupational Health & Safety systems third party certified to AS4801 standard, or operational/audited to VicRoads requirements (Part B) and an OH&S programme.
- Evidence, e.g. Certificate of Currency, that the company has a Victorian WorkCover insurance policy or proof of self-insurance that covers all personnel engaged in the delivery of services.
- Appropriate levels of Public Liability (generally \$10M - \$20M) and Professional Indemnity Insurance (generally \$1M - \$20M) as specified in Department of Transport (DoT) tender/contract documents.
- Correctly and fully completed the Prequalification Applications forms Part A and Part B (available on VicRoads website) and provide examples of work as applicable under each level.

**Group: ROAD & BRIDGE DESIGN**

**Category: ROAD DESIGN**

This category of pre-qualification incorporates works associated with the design of rural and urban roads and freeways and may include, but not be limited to, the design of kerb and channel, drainage, traffic engineering and infrastructure, safety barriers and noise attenuation requirements and other road infrastructure as outlined in VicRoads tender documents, relevant National and State design standards and guidelines (e.g. Austroads Guide to Road Design and VicRoads Supplements to AGRD) and VicRoads Final Drawing Presentation Guidelines available on VicRoads website.

**Standard Eligibility Criteria for Road Design Category**

***To be eligible for a level in this Category, a Company must demonstrate:***

- The requirements as identified in the Common Eligibility Criteria.
- The company has an established design office/department within Australia and the State of Victoria or be able to demonstrate experience in the application of design standards and guidelines as they apply in Victoria.
- Understanding and application of the principles of the Safe System approach to the relevant level being applied for (including exposure to Safe System Assessments – refer VicRoads Safe System Assessment Guidelines)
- Personnel with qualifications as a practising professional designer.
- Evidence that personnel are experienced in the concept, functional and detailed design stages of road infrastructure projects, with relevant exposure to Austroads Guide to Road Design, VicRoads Supplements to AGRDs, the Safe System Approach, VicRoads Safe System Assessment Guidelines, Austroads Guide to Road Safety, Austroads Guide to Traffic Management, VicRoads Traffic Engineering Manuals and other State specific design requirements and experience and knowledge of road design activities within Victoria and/or Australia.
- Relevant experience and satisfactory performance in the areas of competency described for the pre-qualification level.
- Provide examples of design work relevant to level being applied for. Design projects that demonstrate a combined number of “areas of competency”, as outlined below, are acceptable.

**Levels: Rural Roads (RR)**

*Must possess this level prior to being eligible for Urban Roads (UR) and Freeway (FD) levels.*

**Area of Competency**

Rural Road infrastructure design including but not limited to: resheets, widenings, realignments, overtaking lanes, rest stops, minor intersection remodels and safety barrier design and other treatments that prevent lane departure crashes. This work would generally involve two lane/two way roads, and not involve significant fixed level constraints such as kerbing or underground drainage systems and cross culverts.

***To be eligible a Company must:***

- Demonstrate the requirements of the Common and Standard Eligibility Criteria
- Provide evidence that current personnel possess relevant experience for this level
- Provide recent design examples prepared by the company and its current personnel that demonstrate, through evidence, the type of works that would be expected in the “area of competency” outlined for the prequalification level “Rural Roads”.

**Note:** Must also be prequalified for Hydrology & Hydraulics – Simple (SH) as a minimum to be eligible for any Road Design Category.

## Urban Roads (UR)

*Must possess Rural Roads (RR) level to be eligible for this level.*

### Area of Competency

Design of significant urban and rural intersections, including signalised intersections, roundabouts and innovative intersection, the remodelling of existing intersections, new urban roads, duplications including pedestrian and bicycle facilities. This work would generally involve traffic engineering design, fixed level constraints, underground drainage and other infrastructure, kerb and channel, lane departure treatments, but restricted to roads with direct access provision and maximum speed limits of 80 - 90km/hr, with no grade separation.

### To be eligible a Company must:

- Demonstrate the requirements in the Common and Standard Eligibility Criteria
- Provide evidence that current personnel possess relevant experience for this level
- Provide design examples prepared by the company and its current personnel that demonstrate, through evidence, the type of works that would be expected in the “area of competency” outlined for the prequalification level “Urban Roads”.

**Note 1:** To be eligible for Urban Roads (UR) a company must be able to demonstrate competency and be prequalified in Rural Roads (RR).

**Note 2:** Must also be prequalified for Hydrology & Hydraulics – Simple (SH) as a minimum to be eligible for any Road Design Category.

## Freeway (FD)

*Must possess Rural Roads (RR) and Urban Roads (UR) levels to be eligible for this level.*

### Area of Competency

Design of freeway and other major infrastructure including:

- new freeway links or major road widening
- upgrading of existing freeways (not just limited to pavement widening only)
- design of grade-separated interchanges
- complex intersection design
- exposure to and an understanding of the design requirements for safety barriers and noise attenuation considerations, and
- large-scale hydraulic design.

### To be eligible a Company must:

- Demonstrate the requirements of the Common and Standard Eligibility Criteria.
- Show evidence that current personnel possess relevant experience for this level.
- Provide design examples prepared by the company and its current personnel that demonstrate, through evidence, the type of works that would be expected in the area of competency outlined for the prequalification level “Freeways”.
- Maintain qualifications as a practising professional design company or department within a company located in Victoria and/or Australia.

**Note 1:** To be eligible for Freeway Design (FD) a company must be able to demonstrate competency and be prequalified in Rural Roads (RR) and Urban Roads (UR).

**Note 2:** Must also be prequalified for Hydrology & Hydraulics – Simple (SH) as a minimum to be eligible for any Road Design Category.

**Group: ROAD & BRIDGE DESIGN**

**Category: Water Sensitive Road Design – Modelling & Design**

**Area of Competency**

The requirement for the:

- (a) Modelling of the effectiveness of WSRD elements using MUSIC
- (b) Design of water sensitive road design elements suitable for road projects
- (c) Development of maintenance plans for WSRD elements

It also includes the provision of competent advice on the implications of relevant Federal and State legislation, policies and guidelines, including *Environment Protection Act 1970*, SEPPs, local catchment strategies, State Planning Policy Frameworks and Local Planning Policy Frameworks, planning schemes and best practice guidelines related to the application of WSRD related to a road project.

All pre-qualified contractors in this category will be required to participate in regular reviews of performance in relation to the performance assessment criteria for Road & Bridge Design suppliers.

All pre-qualified contractors in this category will be required to ensure that that obtain and maintain required documentation and management systems as identified in VicRoads Application for Prequalification Part B form and associated checklists.

**Standard Eligibility Criteria**

***To be eligible for this level a Company must:***

- Demonstrate the requirements of the Common and Standard Eligibility Criteria
- Show evidence that current personnel possess tertiary qualifications in environmental engineering, environmental science or another relevant field
- Demonstrate experience and satisfactory performance in the modelling of WSRD systems
- Demonstrate experience and satisfactory performance, through examples and evidence, in the detailed design of WSRD elements suitable for road projects, including landscaping and maintenance plans
- Show evidence of experience with the construction of WSRD elements
- Show understanding of relevant Federal and State legislation, policies and guidelines including relevant environmental approvals and permits required
- Show evidence of current staff that have undertaken accredited training in the use of MUSIC modelling and design of WSRD elements.

**Group: ROAD & BRIDGE DESIGN**

**Category: HYDROLOGIC & HYDRAULIC DESIGN**

This category of pre-qualification incorporates works associated with urban and rural drainage design.

**Standard Eligibility Criteria**

***To be eligible a Company must:***

- Demonstrate the requirements of the Common and Standard Eligibility Criteria.
- Show evidence they employ current personnel with extensive experienced hydrologic and hydraulic design within Victoria and Australia.
- Show evidence of previous relevant experience and satisfactory performance in the areas of competency described for the pre-qualification level.

**Levels: Simple (SH)**

**Area of Competency**

Capable of undertaking the requirements of road surface and subsurface drainage design and culvert design for well defined watercourses and catchment areas.

Includes the simple hydraulic design for the proposed bridge or culvert.

***To be eligible a Company must:***

- Demonstrate the requirements of the Common and Standard Eligibility Criteria.

**Note:** This is a standard eligibility criteria prerequisite for Road Design.

**Complex (CH)** *Also eligible for Simple (SH) design work.*

**Area of Competency**

Capable of undertaking the assessment and analysis of major complex catchments and floodplains, including hydrological modelling to estimate flood flows and waterway areas and associated modelling for drainage infrastructure , flood management plans and flood mitigation options.

***To be eligible a Company must:***

- Demonstrate the requirements of the Common and Standard Eligibility Criteria.

**Group: ROAD & BRIDGE DESIGN**

**Category: BRIDGE DESIGN & OTHER STRUCTURES**

This category of pre-qualification incorporates works associated with design of all types of bridges, culverts and other structures such as noise walls, retaining walls and pedestrian overpasses.

All pre-qualified contractors in this category will be required to participate in regular reviews of performance in relation to the performance assessment criteria for Road & Bridge Design suppliers.

**Standard Eligibility Criteria**

***To be eligible a Company must demonstrate:***

- The requirements of the Common and Standard Eligibility Criteria
- Personnel experienced in the detailed design of bridges, culverts and other structures.
- Previous relevant experience and satisfactory performance in the areas of competency described for the pre-qualification level.

**Levels: Structures – Simple (SS)**

**Area of Competency**

Applicants must demonstrate design experience of the following structure types:

- Culverts
- Minor road bridges over waterways and roads with single spans of less than 20 metres using standard precast components - excludes bridges over freeways and railways
- Simple pedestrian bridges
- Retaining walls
- Noise walls
- Screen walls.

***To be eligible a Company must:***

- Demonstrate the requirements of the Common and Standard Eligibility Criteria.



**Structures – Complex (CS)** *Also eligible for Simple Structures (SS) design work.*

**Area of Competency**

Applicants must demonstrate design experience of the following structure types:

- Major bridges with complex foundations, structural components, construction operations
- Temporary works
- Bridges over freeways, large waterways and railways with spans in excess of 20 metres
- Bridges comprising prestressed cast-in-situ concrete beams, box girders, and voided slabs
- Bridges using steel components, e.g welded plate girders
- Truss bridges
- Cable stayed / suspension bridges
- Balanced cantilever, segmental bridges
- Incrementally launched bridges
- Steel and concrete arch structures
- Complex pedestrian bridges
- Bridge widenings and strengthening

Applicants must demonstrate design experience in road-related structures consisting of:

- Gantries / cantilever signs / high mast lighting
- Culverts / cattle underpasses / pedestrian subways
- Noise walls / protection screens / anti-throw screens
- Architectural features
- Attachments of services to bridges
- ITS support structures
- Tram track replacement works on bridges / culverts
- The use of precast components (arches, pits, headwalls, pipes, crown units, box culverts)
- Proprietary / standard components used in non-standard applications

***To be eligible a Company must:***

- Demonstrate the requirements of the Common and Standard Eligibility Criteria.
- Demonstrate pre-qualification at Road & Bridge Design: Structures – Simple (SS)

**Group: ROAD & BRIDGE DESIGN**

**Category: PROOF ENGINEERING**

This category of pre-qualification is required for a Company to undertake Proof-Engineering of structures specified in VicRoads contracts. Proof engineering is a process of independent review and formal certification that a structure, as documented, can be constructed safely and will meet the specified requirements.

This pre-qualification is awarded to companies but is conditional on the nominated representatives of the Company being directly involved in the assessment, and issue of the Proof Engineer’s Certificate.

Applications for pre-qualification must nominate one or more individuals who will be directly involved in the review of the design and the proposed construction method and issue of the Proof Engineer’s certificate.

All pre-qualified contractors in this category will be required to participate in regular reviews of performance in relation to the performance assessment criteria for Road & Bridge Design suppliers.

**Levels: Structures (PE)**

**Area of Competency**

Proof engineering of structures.

***To be eligible a Company must demonstrate:***

- Previous relevant experience and satisfactory performance in the proof engineering of structures
- Quality systems 3rd party certified to AS/ANZ ISO 9001:2000 with specific, auditable procedures for Proof Engineering
- Evidence that the company has a Victorian WorkCover insurance policy or proof of self-insurance which covers all personnel engaged in the delivery of services
- The requirements of the Common and Standard Eligibility Criteria, including having the appropriate levels of Professional Indemnity Insurance or as specified in DoT tender/contract documents.
- Pre-qualification at Road & Bridge Design: Structures – Complex (CS)

***To be eligible each nominated individual on the application must demonstrate:***

- The requirements of the Common and Standard Eligibility Criteria
- Previous experience in Complex Structures demonstrating competence in the areas of competency for Road and Bridge Design: Structures - Complex (CS)
- 20 years of experience with primary responsibility for undertaking practical structural engineering design and analysis of simple structures and complex structures; analysis of temporary works and erection process employed in construction of complex structures.
- Qualifications as a practising professional structural engineer; National Engineering Register – Practising Professional Structural Engineer with Registration Number.
- Demonstrated AS5100-2017 compliance, VicRoads Bridge Technical Notes and VicRoads Standard Specifications compliance.

**Group: ROAD & BRIDGE DESIGN**

**Category: SURVEYING**

This category incorporates works associated with aerial photography, Photogrammetric Mapping. All pre-qualified contractors in this category will be required to participate in regular reviews of performance in relation to the performance assessment criteria for Road & Bridge Design suppliers.

VicRoads manages a Panel of Suppliers for Surveying Services. To apply for the Survey – Panel of Suppliers a company must respond through an open tender process to public advertisements which are placed by VicRoads every 3-4 years.

**Standard Eligibility Criteria**

**To be eligible a Company must demonstrate:**

- The requirements of the Common and Standard Eligibility Criteria
- Personnel experienced in the specific area of competency
- Previous relevant experience and satisfactory performance in the areas of competency described for the pre-qualification level.

**Levels: Aerial Photography (AP)**

**Overview**

Aerial photography is for planning and detail design purposes. It may be used for photo interpretation purposes, photomosaic production or digital base mapping.

**Area of Competency**

Planning and implementation of aerial photography.

**To be eligible a Company must demonstrate:**

- The requirements of the Common and Standard Eligibility Criteria
- Gyroscopic stabilisation of camera platform and use of forward motion image compensators
- Film storage areas to be fire rated with temperature and humidity control.
- Inert gas fire protection system.

**Photogrammetric Mapping (PM)**

**Overview**

Photogrammetric mapping services include:

- Photo control surveys
- Aerial triangulation
- Digital mapping
- Mosaic/orthophoto production.

**Area of Competency**

Preparation, planning and delivery of photogrammetric mapping services.

**To be eligible a Company must demonstrate:**

- The requirements of the Common and Standard Eligibility Criteria
- Ability to produce digital topographic models in MicroStation format
- "In house" MicroStation capability
- Expertise in the production of mosaics/orthophotos.