



Australian Government

RIICWD601D Manage the civil works design process

Release: 2

RIICWD601D Manage the civil works design process

Modification History

Release	Comment
1	This unit replaces RIICWD601A Manage the civil works design process.
2	Required frequency and volume of evidence amended in Performance evidence. Substantial amendments made in Assessment Conditions field, including: references to Industry Sectors, assessor and subject matter expert experience requirements, how assessment should be conducted and what it should confirm.

Application

This unit describes a participant's skills and knowledge required to manage the civil works design process in Civil construction.

This unit is appropriate for those working in management roles.

No licensing or certification requirements apply to this unit at the time of publication.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Interpret and scope civil works design requirements	1.1 Access, interpret and apply Civil works design documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Advise the client on the implications for sustainability and options for an improved environmental outcome in the project 1.4 Analyse the client requirements for the design criteria to ensure all appropriate specifications are included 1.5 Confirm that all development and implementation factors are accounted for 1.6 Prepare functional specifications applying engineering standards and the design specifications
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	1.7 Document and obtain the client's agreement on the criteria
2. Identify civil works project design options and determine the preferred design option	2.1 Identify innovative approaches to the development of the design concept 2.2 Investigate and analyse the possible design concepts capable of achieving the design requirements 2.3 Seek advice from appropriate personnel and sources where the concept proposal has nonstandard engineering requirements or where new technology may apply 2.4 Collaborate with the client to adapt the design concept to improve the outcomes and overcome problems 2.5 Advise the client of the likely impacts on the community
3. Initiate, monitor and support the design of civil works	3.1 Analyse and select resources, processes and systems to develop the design 3.2 Arrange design tasks to meet the agreed outcomes and cost structure 3.3 Develop and check the design solution using the engineering specification 3.4 Create (when appropriate) a demonstration model of the design
4. Prepare and maintain documentation during the civil works design process	4.1 Establish the documentation management process 4.2 Ensure that the supporting documentation required to implement the design is accurate, concise, complete and clear 4.3 Ensure that the designed item is identified by agreed design documentation and records 4.4 Apply the agreed documentation control process when making changes to design 4.5 Ensure that the documentation for the design remains accurate and current during the design development
5. Review civil works design to achieve acceptance	5.1 Review the design to ensure that the client's requirements are met 5.2 Inform the user of the likely impact on the user's lifestyle 5.3 Incorporate corrections and make improvements to the design ensuring social responsibilities, such as sustainability are met 5.4 Review the design with the client to gain documented acceptance
6. Support the application of civil	6.1 Prepare and implement plans to verify that completed physical work meets client's requirements

works designs	6.2 Develop periodic test schedules to monitor performance and enable others to take any corrective action necessary 6.3 Seek feedback from the commissioning process to facilitate corrective actions or improvements 6.4 Evaluate the performance of the design outcomes in the user's environment using appropriate tools 6.5 Evaluate community reaction to the design outcome
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Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIICWD601A Manager the civil works design process

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIICWD601D Manage the civil works design process

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Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant legislation, documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of the civil works design process including:
 - risk assessment and management requirement and procedures
 - statutory compliance requirements and procedures
 - work health and safety requirements and procedures
 - environmental management requirements and procedures
 - cultural and heritage requirements and procedures
 - quality management requirements and procedures
- works effectively with others to undertake and complete the management of the civil works design process including:
 - using a range of communication techniques and equipment to convey information to others
 - maintaining written and verbal reporting requirements
 - organising work activities to meet all task requirements
 - communicating clearly and concisely with others to receive and clarify work instructions
 - provide team leadership and coordination

- provide clarification and advice
- demonstrates completion of managing the civil works design process that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - communicating and collaborating with client to improve outcomes and/or overcome problems
 - monitoring and support the design process
 - ensuring documentation requirements are met
 - reviewing the design including:
 - interpreting and confirming project plans and drawings
 - interpreting and confirming project specifications
 - interpreting and confirming project design briefs
 - interpreting and confirming project engineering survey information
 - interpreting and confirming project hydrological data
 - interpreting and confirming meteorological data
 - interpreting and confirming project geotechnical data
 - interpreting and confirming cultural and heritage data
 - supporting the application of designs

Knowledge Evidence

The candidate must demonstrate knowledge in managing the civil works design process through:

- accessing, interpreting and applying legislative, organisation and site requirements and procedures for:
 - interpret Australian and other appropriate standards
 - reporting requirements and procedures
 - design approval requirements and procedures
 - design record keeping requirements and procedures
 - performance review requirements and procedures
 - systems close out requirements and procedures
 - design review principles and procedures
 - consultative processes
- provide team leadership and coordination
- applying innovative solutions and new technology
- choosing appropriate operational techniques
- developing and applying design plans
- preparing civil works functional specifications
- computer aided design (CAD) technology
- engineering graphical presentation techniques
- calculating design costs

- negotiation techniques
- client feedback techniques
- principles of road user behaviour
- Industry and organisational design procedures and practice
- current Industry best practice
- civil works options
- civil works geometric requirements
- civil works surfacing requirements
- potential hazards, constraints and conditions that may affect civil works design and construction
- current Industry best practice in civil works design and construction
- techniques for choosing preferred options
- operational techniques required for the execution of civil works construction tasks
- civil works construction plant and equipment capabilities

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- assessment may be conducted in conjunction with the assessment of other Units of Competency; and,
- assessment must confirm consistent performance can be applied in a range of relevant workplace circumstances; and,
- assessors must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through the minimum years of current* work experience specified below in an Industry sector relevant to the outcomes of the unit; or,
- where the assessor does not meet experience requirements a co-assessment or partnership arrangement must exist between the qualified assessor and an Industry subject matter expert. The Industry subject matter expert should hold the unit being assessed (or an equivalent unit) and/or demonstrate equivalence of skills and knowledge at the unit level. An Industry technical expert must also demonstrate skills and knowledge from the minimum years of current work experience specified below in the Industry sector, including time spent in roles related to the unit being assessed; and,
- assessor and Industry subject matter expert requirements differ depending on the Australian Qualifications Framework Level (AQF) of the qualification being assessed and/or Industry Sector as follows:

Industry sector	AQF** Level	Required assessor or Industry subject matter expert experience

Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	1	1 Year
	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 Years
Other sectors	Where this Unit is being assessed outside of the Resources and Infrastructure Sectors assessor and/or Industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no Industry standard is specified should comply with any relevant regulation.	

*Assessors can demonstrate current work experience through employment within Industry in a role relevant to the outcomes of the Unit; or, for external assessors this can be demonstrated through exposure to Industry by conducting frequent site assessments across various locations.

**Where a unit is being delivered outside of a Qualification the first numeric character in the Unit code should be considered to indicate the AQF level

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