

# Summary of draft training products

Civil Construction

4 May 2020

## 1. Introduction

The Civil Infrastructure Industry Reference Committee (IRC) has identified that the Resources and Infrastructure Industry (RII) Training Package has significant training product gaps for job roles and skills across civil construction. In response, PwC's Skills for Australia and the Civil Infrastructure IRC are currently undertaking the **Civil Construction** project to ensure RII training products are fit for purpose and reflect industry's needs.

## 2. About the project

The Civil Construction project aims to amend and create training products that address industry's needs in civil construction and civil construction design, including road, bridge and tunnel works. The project responds to ongoing health and safety challenges and technological change affecting the industry and aims to clarify and strengthen career progression pathways for civil construction and civil construction design workers. It also aims to delete superfluous and obsolete training products from the RII Resources and Infrastructure Industry Training Package where appropriate.

- **Update ten qualifications** to clarify and strengthen career progression pathways for workers in civil construction – from entry-level civil construction workers through to senior civil works designers and civil construction managers.
- **Delete one qualification**, *RII31215 Certificate III in Civil Foundations* due to sustained low industry use and relevance.
- **Create eight new units of competency** to address training product gaps relating to tunnel boring machine operations, temporary traffic management and piling.
- **Update 166 units of competency** used across civil construction and civil construction design to reflect current industry processes and requirements and clarify training outcomes.

The Case for Change was established based on initial research and consultation carried out by PwC's Skills for Australia from November 2018 to March 2019. It was endorsed by the AISC on behalf of the Civil Infrastructure IRC in August 2019.

From November 2019 to April 2020, PwC's Skills for Australia carried out consultation to identify the required changes to training products, including individual and group consultations with employees, peak bodies, unions, registered training organisations (RTOs) and government. The key findings from consultation and proposed training product recommendations have been reviewed by the Civil Infrastructure IRC and are reflected in the newly created and amended training products.

Once we have received public feedback and addressed it accordingly, the final draft training products will be provided to the Civil Infrastructure IRC for endorsement and submission to the AISC in October 2020. **This is the final chance to provide feedback before they are published on training.gov.au.**

## 3. How to provide feedback

We want to hear from you. We will be accepting feedback on the draft training products until **close of business Friday 29 May 2020.** We cannot guarantee that feedback received after this date will be considered.

Please provide your feedback by emailing our team at [info@skillsforaustralia.com](mailto:info@skillsforaustralia.com). Feedback can be provided in the following ways:

- Providing detailed comments and tracked changes in the Word documents included in the zip file
- Providing high level feedback via email
- Contacting PwC's Skills for Australia to set up a time to discuss feedback with a member of our team.

Please note feedback will only be considered where it relates to the draft training products included in the scope of this project.

## 4. Draft training products available for review

The zip file contains the draft training products released for public review on 20 April 2020 and 4 May 2020, outlined in **Table 1** below. The remaining draft training products will be released on 11 May 2020. Please note the draft units of competency have been grouped into eight batches according to their technical field.

**Table 1** Draft training products available for review

Type	Code	Title	Modification
<b>Released for public review 20 April 2020</b>			
Qualification	RII20715	Certificate II in Civil Construction	Amended
Qualification	RII40715	Certificate IV in Civil Construction Supervision	Amended
Qualification	RII40815	Certificate IV in Civil Construction Design	Amended
Qualification	RII50515	Diploma of Civil Construction Design	Amended
<b>Civil Works, Civil Structures (Batch 1 of 8)</b>			
Unit	RIICCM203D	Read and interpret plans and job specifications	Amended
Unit	RIICCM204D	Place and fix reinforcement materials	Amended
Unit	RIICCM205E	Carry out manual excavation	Amended
Unit	RIICCM206D	Support plant operations	Amended
Unit	RIICCM207D	Spread and compact materials manually	Amended
Unit	RIICCM208D	Carry out basic levelling	Amended
Unit	RIICCM209D	Carry out concrete work	Amended
Unit	RIICCM210D	Install trench support	Amended
Unit	RIICCM211D	Erect and dismantle temporary fencing and gates	Amended
Unit	RIICCM301D	Construct and dismantle fences and gates	Amended
Unit	RIICSG401D	Apply the principles of civil concrete structures construction	Amended
Unit	RIICSG402D	Apply the principles of civil steel structures construction	Amended
Unit	RIICSG403D	Apply the principles of civil timber structure construction	Amended
Unit	RIICSG404D	Apply the principles of civil masonry, crib and gabion structure construction	Amended
Unit	RIICSG405D	Carry out inspections of civil structures	Amended
Unit	RIICSG406D	Apply principles of maintenance of civil structures	Amended
Unit	RIICWM401D	Supervise civil works	Amended
Unit	RIICWM402D	Supervise civil works contractors	Amended
Unit	RIICWM501D	Implement civil construction plan	Amended
Unit	RIICWM502D	Implement civil works maintenance program	Amended
Unit	RIICWM503D	Prepare civil works cost estimate	Amended
Unit	RIICWM504D	Prepare civil works bill of quantities	Amended
Unit	RIICWM505D	Prepare civil works schedule of rates	Amended
Unit	RIICWM601D	Establish civil construction plans	Amended
Unit	RIICWM602D	Establish civil works maintenance programs	Amended
<b>Released for public review 4 May 2020</b>			
Qualification	RII30815	Certificate III in Civil Construction Plant Operations	Amended
Qualification	RII30915	Certificate III in Civil Construction	Amended
Qualification	RII31215	Certificate III in Civil Foundations	Deleted
Qualification	RII40615	Certificate IV in Civil Construction Operations	Deleted
Qualification	RII50415	Diploma of Civil Construction Management	Amended



## Summary of draft training product changes

Type	Code	Title	Modification
Qualification	RII60515	Advanced Diploma of Civil Construction Design	Amended
Qualification	RII60615	Advanced Diploma of Civil Construction	Amended
<b>Bridge and Timber Bridge Construction and Maintenance (Batch 2 of 8)</b>			
Unit	RIICBM201D	Strip pile heads	Amended
Unit	RIICBM301D	Maintain concrete bridges	Amended
Unit	RIICBM302D	Install pre-cast girders	Amended
Unit	RIICBM303D	Install pre-cast parapets	Amended
Unit	RIICBM304D	Operate a bridge inspection unit	Amended
Unit	RIICBM305D	Install pre-cast concrete bridge decks	Amended
Unit	RIICBM306D	Undertake concreting work on concrete bridges	Amended
Unit	RIICBM307D	Construct formwork and false work on concrete bridges	Amended
Unit	RIICTB201D	Maintain timber bridges	Amended
Unit	RIICTB202D	Apply bridge durability treatment	Amended
Unit	RIICTB203D	Produce drawings and sketches	Amended
Unit	RIICTB301D	Undertake visual inspection	Amended
Unit	RIICTB302D	Install temporary support members	Amended
Unit	RIICTB303D	Erect a temporary modular support system (bailey) on an existing bridge	Amended
Unit	RIICTB304D	Install or replace sub-structure members	Amended
Unit	RIICTB305D	Install or replace super-structure members	Amended
Unit	RIICTB306D	Splice and connect timber members	Amended
Unit	RIICTB307D	Assemble a temporary modular bridge	Amended
Unit	RIICTB308D	Install or replace truss members	Amended
Unit	RIICTB309D	Construct, maintain and remove coffer dams	Amended
Unit	RIICTB310D	Construct specialised timber deck systems	Amended
<b>Tunnel Construction, Underground Services (Batch 3 of 8)</b>			
Unit	RIICPL301D	Install water mains pipelines	Amended
Unit	RIICPL302D	Install stormwater systems	Amended
Unit	RIICPL303D	Install sewer pipelines	Amended
Unit	RIICPL304D	Install pre-cast gully pits	Amended
Unit	RIICPL305D	Install pre-cast access chambers	Amended
Unit	RIICPL401D	Apply the principles for the installation of underground service using open excavation	Amended
Unit	RIICTC301D	Install tunnelling constructions services	Amended
Unit	RIICTC302D	Line tunnel	Amended
Unit	RIICTC303D	Excavate tunnel by machine	Amended
Unit	RIICTC304D	Muck out tunnel earthworks	Amended
Unit	RIICTC305D	Construct portals	Amended
Unit	RIICTC401D	Apply the principles of tunnel construction	Amended
Unit	RIICTT401D	Apply the principles for the installation of underground services using trenchless technology	Amended
Unit	RIICTT402D	Apply principles for repair & rehabilitation of underground services using trenchless technology	Amended
Unit	RIIMEX403D	Apply the principles of canal construction	Amended
Unit	RIIUND310D	Apply shot-crete underground	Amended
<b>Road and Pavements Construction and Maintenance (Batch 4 of 8)</b>			

## Summary of draft training product changes

Type	Code	Title	Modification
Unit	RIICRC201D	Repair potholes	Amended
Unit	RIICRC202D	Install signs	Amended
Unit	RIICRC203D	Install sub-soil drainage	Amended
Unit	RIICRC204D	Install and maintain roadside fixtures	Amended
Unit	RIICRC205D	Install utility poles	Amended
Unit	RIICRC206D	Install pre-cast concrete crash barriers	Amended
Unit	RIICRC207D	Install noise barriers	Amended
Unit	RIICRC208D	Lay pipes	Amended
Unit	RIICRC209D	Lay reinforced concrete box culverts	Amended
Unit	RIICRC301D	Maintain drainage systems	Amended
Unit	RIICRC302D	Place and form concrete kerb, channel and fixtures	Amended
Unit	RIICRC303D	Lay pavers	Amended
Unit	RIICRC304D	Maintain sealed roads	Amended
Unit	RIICRC305D	Conduct road construction paver screeding operations	Amended
Unit	RIICRC306D	Conduct earthworks	Amended
Unit	RIICRC307D	Conduct road pavement construction	Amended
Unit	RIICRC308D	Conduct paver operations	Amended
Unit	RIICRC309D	Conduct stabiliser operations	Amended
Unit	RIICRC310D	Construct and maintain roads	Amended
Unit	RIICRC311D	Conduct concrete road paver operations	Amended
Unit	RIICRC312D	Setup and maintain concrete paver stringlines	Amended
Unit	RIICRC313D	Conduct concrete road curing and texturing operations	Amended
Unit	RIICRC314D	Handle concrete materials	Amended
Unit	RIICRC315D	Use concreting materials and equipment	Amended
Unit	RIICRC316D	Place and compact concrete	Amended
Unit	RIICRC317D	Finish concrete pavements	Amended
Unit	RIICRC318D	Cure concrete	Amended
Unit	RIICRC319D	Saw and cut concrete pavements to initiate planned cracks	Amended
Unit	RIICRC320D	Seal concrete pavements	Amended
Unit	RIICRC321D	Use automated paving guidance systems	Amended
Unit	RIICRC322D	Receive, check and record concrete deliveries	Amended
Unit	RIICRC323D	Insert tie bars in fresh concrete	Amended
Unit	RIICRC401D	Apply the principles of flexible pavement construction	Amended
Unit	RIICRC402D	Apply the principles of rigid pavement construction	Amended
Unit	RIICRC403D	Apply the principles of the stabilisation of materials	Amended
Unit	RIICRC404D	Inspect and report on pavement condition	Amended
Unit	RIICRC405D	Carry out pavement condition measurement	Amended
Unit	RIICRC406D	Apply the principles of pavement maintenance	Amended
<b>Civil Works Design (Batch 5 of 8)</b>			
Unit	RIICWD501D	Prepare detailed design of foundations	Amended
Unit	RIICWD502D	Prepare detailed design of lighting	Amended
Unit	RIICWD504D	Prepare detailed design of environmental controls	Amended
Unit	RIICWD505D	Prepare detailed design of landscaping	Amended

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Type	Code	Title	Modification
Unit	RIICWD506D	Prepare detailed design of canals	Amended
Unit	RIICWD508D	Prepare detailed design of rural roads	Amended
Unit	RIICWD509D	Prepare detailed design of urban roads	Amended
Unit	RIICWD510D	Prepare detailed design of busways	Amended
Unit	RIICWD511D	Prepare detailed design of sub-divisions	Amended
Unit	RIICWD512D	Prepare detailed design of motorways and interchanges	Amended
Unit	RIICWD513D	Prepare detailed design of rail civil infrastructure	Amended
Unit	RIICWD514D	Prepare detailed design of dams	Amended
Unit	RIICWD515D	Prepare detailed design of airfield civil works	Amended
Unit	RIICWD516D	Prepare detailed design of bicycle ways	Amended
Unit	RIICWD517D	Prepare detailed design of industrial hardstands	Amended
Unit	RIICWD518D	Prepare detailed design of open car parks	Amended
Unit	RIICWD519D	Prepare detailed design of intermodal facilities civil works	Amended
Unit	RIICWD520D	Prepare detailed design of rigid pavements	Amended
Unit	RIICWD521D	Prepare detailed design of flexible pavements	Amended
Unit	RIICWD522D	Prepare stabilised material mix design	Amended
Unit	RIICWD523D	Prepare asphalt mix design	Amended
Unit	RIICWD524D	Prepare design of spray seal surfacing	Amended
Unit	RIICWD525D	Select pavement surfacing	Amended
Unit	RIICWD526D	Prepare detailed traffic analysis	Amended
Unit	RIICWD527D	Prepare detailed design of traffic signals	Amended
Unit	RIICWD528D	Prepare detailed design of traffic management systems	Amended
Unit	RIICWD529D	Prepare detailed design of underground services	Amended
Unit	RIICWD530D	Prepare detailed design of surface drainage	Amended
Unit	RIICWD531D	Prepare detailed design of subsurface drainage	Amended
Unit	RIICWD532D	Prepare detailed design of tunnels	Amended
Unit	RIICWD533D	Prepare detailed design of civil concrete structures	Amended
Unit	RIICWD534D	Prepare detailed design of civil steel structures	Amended
Unit	RIICWD535D	Prepare detailed design of civil timber structures	Amended
Unit	RIICWD536D	Prepare detailed design of civil masonry, crib and gabion structures	Amended
Unit	RIICWD537D	Prepare detailed design of marine structures civil works	Amended
Unit	RIICWD601D	Manage the civil works design process	Amended
<b>Foundation Works, Water Management (Batch 6 of 8)</b>			
Unit	RIICFW301D	Construct underpinning	Amended
Unit	RIICFW302D	Install temporary and permanent rock anchors	Amended
Unit	RIICFW303D	Install primary ground support	Amended
Unit	RIICFW304D	Conduct pile driving operations	Amended
Unit	RIICFW305D	Conduct cast in-situ pilings operations	Amended
Unit	RIICFW306D	Direct pile driving operations	Amended
Unit	RIICFW307D	Direct cast in-situ piling operations	Amended
Unit	RIICFW308	Conduct screw piling operations	Newly Created
Unit	RIIDML401D	Apply the principles of demolitions	Amended
Unit	RIISTD201D	Read and interpret maps	Amended

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Type	Code	Title	Modification
Unit	RIISTD202D	Collect routine site samples	Amended
Unit	RIIWMG203D	Drain and dewater civil construction site	Amended
Unit	RIIWMG301D	Control construction site water table	Amended
Unit	RIIWMG302D	Reclaim and treat water	Amended
Unit	RIIWMG401D	Apply and monitor the site water management plan	Amended
Unit	RIIWMG402D	Monitor and coordinate waste and process water treatment	Amended
Unit	RIIWMG501D	Implement the site water management plan	Amended
Unit	RIIWMG601D	Establish and maintain water management system	Amended
<b>Road Marking, Road Traffic Management (Batch 7 of 8)</b>			
Unit	RIICRM201E	Escort mobile works	Amended
Unit	RIICRM202D	Handle and store road marking materials	Amended
Unit	RIICRM203D	Conduct pedestrian road marking operations	Amended
Unit	RIICRM204D	Prepare surface for road marking	Amended
Unit	RIICRM205D	Conduct road marking measuring operations	Amended
Unit	RIICRM206D	Conduct airless and atomised spraying operations	Amended
Unit	RIICRM207D	Install raised pavement markers	Amended
Unit	RIICRM301D	Conduct ride on road marking operations	Amended
Unit	RIICRM302D	Conduct long line road marking operations	Amended
Unit	RIICRM303D	Conduct thermo plastic road marking operations	Amended
Unit	RIIRTM201D	Position, set-up and operate a variable message sign	Amended
Unit	RIIRTM202D	Position, set-up and operate portable traffic signals	Amended
Unit	RIIRTM203D	Work as a safety observer/spotter	Amended
Unit	RIIRTM301D	Operate a truck or trailer mounted attenuator	Amended
<b>Released for public review 11 May 2020</b>			
<b>Temporary Traffic Management and Tunnelling (Batch 8 of 8)</b>			
Unit	RIICTC306	Conduct tunnel boring machine operations	Newly Created
Unit	RIICTC402	Supervise tunnel boring machine operations	Newly Created
Unit	RIICWD538	Prepare traffic management plans and traffic guidance schemes for multilane roads and signalised intersections	Newly Created
Unit	RIICWD539	Prepare traffic management plans and traffic guidance schemes for motorways and freeways	Newly Created
Unit	RIIWS207	Control traffic on multilane roads and signalised intersections	Newly Created
Unit	RIIWS304	Implement traffic management plans on multilane roads and signalised intersections	Newly Created
Unit	RIIWS305	Implement traffic management plans on motorways and freeways	Newly Created