

Title	Construct forestry river crossings		
Level	3	Credits	20

Purpose	People credited with this unit standard are able to: describe the purpose and construction considerations for forestry river crossings; prepare for construction of forestry river crossings; and construct forestry river crossings.
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Classification	Infrastructure Works > Forestry Earthworks
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Available grade	Achieved
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Prerequisites	Candidates must hold a minimum of the class of licence required for the machine being operated to comply with the requirements of the Land Transport (Driver Licensing) Rule 1999.
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Guidance Information

- Learning and assessment within this unit standard must be carried out in an infrastructure forestry earthworks environment and in accordance with the following legislation, guidelines, and codes of practice, as relevant to their role, and any subsequent amendments:
 - Health and Safety at Work Act 2015;
 - Resource Management Act 1991;
 - Heritage New Zealand Pouhere Taonga Act 2014;
 - Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017 (Subpart 3 – Earthworks), available from <http://www.legislation.govt.nz/>;
 - Approved Code of Practice (ACOP) for Safety and Health in Forest Operations (2012), available from <https://www.worksafe.govt.nz/>;
 - Excavation Safety Good Practice Guidelines (2016), available from <https://worksafe.govt.nz/>;
 - Operator Safety Manual for Earthmoving Machinery 2017, available from <https://civilcontractors.co.nz/>;
 - Plantation Forestry Code of Practice Eliminating Alcohol and Other Drugs from the Workplace (2015), available from <https://nzfoa.org.nz/>;
 - New Zealand Forest Road Engineering Manual: Operators Guide 2020, available from <http://www.nzfoa.org.nz/>;
 - Forest Practice Guides (2020), available from <http://www.nzfoa.org.nz/>.

2 Assessment

Candidates must show they can construct either a single culvert river crossing or a temporary river crossing.

3 Definitions

Company requirements include the policy, procedures, and methodologies of the company. They include legislative and regulatory requirements that may apply across the company or to a specific site. Requirements are documented in the company's health and safety plans, traffic management plans, contract work programmes, quality assurance programmes, policies, and procedural documents. *Job prescriptions* are those given to the operator prior to undertaking a job. They may include site safety instructions, mapping information, contract drawings, and written memos.

Manufacturer's instructions may include specifications, installation, handling, use and maintenance instructions, and safety data sheets.

Outcomes and performance criteria**Outcome 1**

Describe the purpose and construction considerations for forestry river crossings.

Performance criteria

1.1 The purpose of forestry river crossings is described.

1.2 Construction considerations for forestry river crossings are described.

Range access, catchment size, environmental impact, flooding events, ground stability, safety, weather conditions.

Outcome 2

Prepare for construction of forestry river crossings.

Performance criteria

2.1 Requirements of the job are clarified in accordance with job prescriptions and company requirements.

Range may include but is not limited to – access restrictions, adverse weather requirements, compliance requirements, environmental restrictions, logistics, materials, personnel, plant.

2.2 Health and safety measures are implemented in accordance with company requirements.

Range may include but is not limited to – emergency procedures, hazard identification and controls, personal protective equipment.

Outcome 3

Construct forestry river crossings.

Performance criteria

- 3.1 Site is prepared in accordance with job prescriptions and company requirements.
- Range preparation includes – erosion and sediment controls, removal of organic material, slash and spoil placement, stripping;
may include – stump placement, temporary diversions.
- 3.2 Pre-formed components are installed in accordance with job prescriptions, company requirements, and manufacturer’s instructions.
- Range pre-formed components may include but are not limited to – abutments, concrete foundations, corduroy, drift deck sections, piers, piles, precast components, preformed pipes;
installation includes – bed disturbance, embedment, erosion and sediment controls, fish passage.
- 3.3 Bulk fill is placed and compacted in accordance with job prescriptions and company requirements.
- Range placement and compaction considerations include – approach angle, corner configuration, departure angle, erosion and sediment controls;
may include – aggregate size, engineered fill, fill slope, spillway.
- 3.4 Roadway and ancillary structures are formed in accordance with job prescriptions, company requirements, and manufacturer’s instructions.
- Range compaction, erosion and sediment controls;
may include – armouring, headwall, wingwall, pavement installation.
- 3.5 Drainage, erosion and sediment controls are installed in accordance with job prescriptions and company requirements.
- Range controls may include but are not limited to – berm, bunding, drainage culvert, flume, sediment retention pond, sediment trap, silt fence, soak hole, stabilisation, water tables on approach.
- 3.6 Machinery is operated safely in accordance with company requirements and manufacturer’s instructions.

Planned review date	31 December 2028
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	28 September 2023	N/A

Consent and Moderation Requirements (CMR) reference	0101
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@waihangaararau.nz if you wish to suggest changes to the content of this unit standard.