

## 41033 Establish irrigation system requirements for commercial use

<b>Kaupae   Level</b>	4
<b>Whiwhinga   Credit</b>	10
<b>Whāinga   Purpose</b>	<p>The skill standard is for people working in or seeking skills in irrigation system requirements.</p> <p>People credited with this skill standard will be able to conduct detailed site and water source evaluations and develop comprehensive system description that informs the irrigation system design process or irrigation operation process.</p> <p>This skill standard has been developed to align with the New Zealand Certificate in Irrigation System Management (Level 4) [Ref: 2556] or New Zealand Certificate in Irrigation System Design (Level 5) [Ref: 2557].</p>

### Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

<b>Hua o te ako   Learning outcomes</b>	<b>Paearu aromatawai   Assessment criteria</b>
1. Determine client objectives, constraints, and system preferences.	a. Consult the client to identify objectives, constraints, and preferred irrigation system options.
	b. Document and organise information gathered during consultation, including verified client requirements, constraints, and supporting evidence.
	c. Assess soil characteristics including water holding capacity and infiltration rates through field tests and incorporate findings into design parameters.
	d. Determine overall water demand by integrating crop needs, soil characteristics, and climatic conditions.

Hua o te ako   Learning outcomes	Paearu aromatawai   Assessment criteria
2. Interpret legislative and regulatory frameworks affecting irrigation system design.	a. Describe the relevant national resource management legislation, and analyse the implications for irrigation system design and/or operation.
	b. Describe the impact of regional regulatory requirements affecting the design and operation of an irrigation system.
	c. Describe the impact of water resource consent conditions or supply agreements affecting the design and operation of an irrigation system.
3. Interpret site-specific factors to inform irrigation system design and management decisions, considering soil, crop, climate, and land management units.	a. Demonstrate field-based analysis of soil profiles and their characteristics.
	b. Describe the irrigation requirements and factors of the specific crop type.
	c. Interpret relevant weather and climate data for the site.
	d. Map on to a single drawing the features of a land management unit (LMU) influencing the irrigation system design and operation accounting for soils, crop and climate.
4. Evaluate water source reliability, characteristics, and suitability for irrigation.	a. Assess water source availability and seasonal variability.
	b. Evaluate water supply characteristics and suitability in relation to irrigation system and crop needs, including compliance with relevant regulatory requirements.
5. Develop and document irrigation system description that meets client needs, site conditions, and regulatory requirements.	a. Develop a system description including irrigation objectives and key performance indicators, relevant site-specific regulatory considerations.
	b. Outline design or operational assumptions and identified constraints.
	c. Verify and document that the system description conforms with the relevant industry codes of practice.

## **Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria**

### *Assessment specifications:*

Akōnga/learners must be assessed using naturally occurring activities.

Activities can be assessed against an existing, new or modified irrigation system.

The irrigation system is for a commercial agricultural or horticultural property, sports turf surface, landscape, golf course, amenities and wastewater.

All activities and evidence must meet the requirements of accepted industry practice, worksite safety procedures, and any subsequent amendments to legislation.

Evidence for all outcomes must be presented in accordance with; the relevant IrrigationNZ Codes of Practice and any subsequent amendments; available from the Irrigation New Zealand website, <http://irrigationnz.co.nz/>.

Providers must give due consideration to embedding ngā kaupapa (principles) o Te Tiriti o Waitangi when designing delivery activities relevant to this standard. These principles are outlined in [Guidelines for Providers: Embedding Tirohanga Māori](#).

Providers must give due consideration to the needs and values of Pacific peoples and other cultural groups when designing delivery activities relevant to this standard, ensuring practices are inclusive and equitable.

### Definitions

*Accepted industry practice* refers to codes of practice and standardised procedures adopted by the irrigation industries as standards for of best practice.

*Land Management Unit (LMU)* Sub-areas within a farm that contain features and conditions that justify being treated separately. Includes physical features, aspect, slopes, soil Prolife Available Water (PAW) and infiltration characteristics, crop types, runoff risk, farm management limitations, etc.

*Water supply characteristics* – physical, chemical, biological.

## **Ngā momo whiwhinga | Grades available**

Achieved.

## **Ihirangi waitohu | Indicative content**

### **Client Needs**

- Structured interviews and guided conversations to capture goals, preferences, risks, constraints
- Document budget, land use, technology preferences, scalability expectations.

### **Regulations and Codes Interpretations**

- National and regional legislation (RMA, regional plans) and site-specific consents
- IrrigationNZ Design Code of Practice and O&M Guideline Compliance.

### **Site Factors Analysis**

- Collection and interpretation of soil profiles, climate data, topography
- Irrigation needs (crop type, evapotranspiration rates, growing season data)
- Mapping and classification of LMUs to define irrigation zones.

### **Water Sources Evaluation**

- Reliability, quality, and regulatory constraints of potential water sources
- Tools and methods for source suitability analysis.

## System Requirement Documentations

- Irrigation design brief integrating objectives, site analysis, regulatory obligations
- Brief alignment with NZ Piped Irrigation Systems Design Code or O&M Guideline.

## Rauemi | Resources

Legislation relevant to this skill standard includes but is not limited to:

- Irrigation New Zealand website, <http://irrigationnz.co.nz/>
  - The New Zealand Piped Irrigation Systems Design Code of Practice
  - The New Zealand Piped Irrigation System Performance Assessment Code of Practice
  - The New Zealand Piped Irrigation Systems Design Standards
  - The New Zealand Piped Irrigation Systems Installation Code of Practice
  - The Irrigation New Zealand Guideline for Irrigation Management
  - The Irrigation New Zealand Design Brief Checklist
  - The Irrigation New Zealand Guideline for an Operations and Maintenance Manual
- Site specific water resource consent or water supply agreement, weather data (e.g. NIWA), crop descriptions and soil profile data sheets (e.g. SMap);
- Health and Safety at Work Act 2015;
- Resource Management Act 1991;
- National Policy Statement for Freshwater Management 2014;
- Various Regional Council Land and Water Regulations;

and any subsequent amendments or replacements.

## Pārongo Whakaū Kounga | Quality assurance information

<b>Ngā rōpū whakatau-paerewa  </b> Standard Setting Body	Muka Tangata – People Food and Fibre Workforce Development Council
<b>Whakaritenga Rārangi Paetae Aromatawai  </b> DASS classification	Engineering and Technology > Water Industry > Irrigation
<b>Ko te tohutoro ki ngā Whakaritenga i te</b> <b>Whakamanatanga me te Whakaōritenga  </b> CMR	0052

<b>Hātepe   Process</b>	<b>Putanga   Version</b>	<b>Rā whakaputa   Review Date</b>	<b>Rā whakamutunga mō te aromatawai   Last date for assessment</b>
<b>Rēhitatanga   Registration</b>	1	18 December 2025	N/A
<b>Kōrero whakakapinga   Replacement information</b>	This skill standard replaced unit standard 28934.		
<b>Rā arotake   Planned review date</b>	31 December 2030		

Please contact Muka Tangata – People Food and Fibre Workforce Development Council at [qualifications@mukatangata.nz](mailto:qualifications@mukatangata.nz) to suggest changes to the content of this skill standard.