CARAVAN INDUSTRY NATIONAL COMPETENCY STANDARDS

PARKS GROUNDS AND MAINTENANCE

Unit RUHHRT206A

Operate Tractors

Unit Descriptor

This Unit of Competence describes the operation of tractors in a horticultural workplace. Tractors in this industry are generally unlikely to exceed 100hp and to be two or four wheel drive with conventional steering. Tractor operation is likely to be under routine supervision with intermittent checking. Competency involves the application of knowledge and skills to a range of tractor operational tasks. Tractor operation is usually within established routines, methods and procedures. This is equivalent to the rural generic unit of competency AG102EO Operate Tractors.

Element		Performance Criteria
1	**Implement safe tractor operating procedures**	• Mechanical hazards associated with safe operation are identified and relevant risk control measures are implemented in line with enterprise standards. • Environmental hazards associated with safe tractor operation are identified and relevant risk control measures are implemented in line with enterprise standards. • Operational factors associated with safe tractor operation are identified and relevant risk control measures are implemented in line with enterprise standards.
2	**Perform routine tractor maintenance**	• Routine safety checks are carried out in line with industry standards. • Routine daily service requirements are completed as specified by the manufacturer. • Faults are detected and corrected and reported as specified in operating standards.

3	**Operate tractor**	• Pre-start checks of tractor and equipment are carried out according to manufacturer's specifications and legislative requirements. • Selected implements are securely attached and set for required operation. • Licenses and permits are obtained as required. • The tractor is driven in a safe and controlled manner relative to the operating conditions without damage to the tractor attachments or property. • Defined shut down procedures are completed in line with operational requirements.

Range of Variables

- Tractors are two or four wheel drive with conventional steering and up to 70hp
- Routine daily safety checks may include an assessment of mechanical hazards, belts, gauges, chains and drives, power take off equipment and guards, lighting, roll over protection, spark arresters and fire safety, braking systems, hydraulic systems
- Routine daily service requirements may include checks of fluid levels, tyre conditions and pressures, belt replacements, hydraulic and couplings, air cleaners, fuel and oil filters, lubrication, steering systems, in line with manufacturer's specifications
- Steering systems may include conventional front wheel steering, skid steer
- Operating conditions may include terrain in both on and off road conditions which may be smooth, rough, slippery, with light and medium loads/draught. It does not include difficult and hazardous conditions such as boggy and steep terrain with medium to heavy loads
- Tractors may be set up and operated for blade, drawbar, front end loader, power take off, remote hydraulics, linkage and mounted equipment.
- Tractor shutdown procedures may include re-fuelling after work, ensuring all hydraulic equipment is lowered to a 'safe' position, completing appropriate records

- Operational standards may include pre-operation al checks, standards of operation, storage and usage of fuels and lubricants, safeguards, reporting routines.

Evidence Guide

Underpinning Skills and Knowledge:

- A basic working knowledge of:
  - the provision of the workplace health and safety acts, their regulations and codes of practice
  - particular state or territory regulations relating to operations
  - safety and survival skills such as the need to maintain working loads within specifications, hitch points at the correct height and an awareness of operating hazards, such as power lines or steep conditions.

An ability to:

- perform routine tractor maintenance
- operate tractors.

OH &S issues which impact upon the performance of this unit:

- Safe working and operating practices are required at all times.
- Workcover certificates may be required for the operation of hydraulic lifting equipment or any equipment worked above head height.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or though simulation, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Required licences and permits.
- Driving vehicles in a range of conditions.
- Emergency procedures in the operation of vehicles and equipment.

Linkages to Other Units:

- There is a strong link between this unit and other operational units such as:
  - THTGTM02A Carry Out Maintenance of Grounds
  - RUHHRT104A Provide Turf Care.
- Combined training/assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT207A

Operate Equipment and Machinery

Unit Descriptor

This Unit of Competence describes the operation of tractors and their associated implements in a horticultural workplace. Tractors in this industry are generally unlikely to exceed 100hp and to be two wheel drive with conventional steering. Tractor operation is likely to be under routine supervision with intermittent checking. Competency involves the application of knowledge and skills to a range of tractor operational tasks. Tractor operation is usually within established routines, methods and procedures. This is equivalent to the Agricultural unit of competency AGCORE1100EO Operate Equipment.

Element		Performance Criteria
1	**Operate trailed and mounted equipment**	• Trailing and tractor mounted equipment is selected and attached securely and safely to the vehicle or tractor as instructed. • Selected machinery or equipment is calibrated for the designated task. • Implements or trailers are operated safely and effectively to operation requirements. • Damage, wear or malfunctions are corrected and/or reported in accordance with operational requirements. • Equipment is cleaned and stored after use according to enterprise standards.
2	**Operate stationary equipment**	• Pre-start checks of engines and motors are completed in accordance with operational requirements. • Attached powered equipment is checked for condition and designed operation prior to starting. Damage, wear, faults or malfunctions are corrected and/or reported to operational requirements. • Equipment use is recorded according to enterprise standards/operational requirements.

3	**Operate independently powered tools**	• Pre-start checks of power tools are completed in line with manufacturers' recommendations. • Manufacturers' and workplace safety requirements are followed to maximise operator safety. • Unsafe or faulty tools are identified and segregated for repair or replacement. • Tools are prepared to use in line with industry standards and manufacturers' recommendations. • Tools and equipment are operated safely and efficiently to workplace requirements. • Tools are cleaned and stored after use as specified.

Range of Variables

- Trailed or mounted equipment may be mounted on property vehicles, motorbikes, trailed tractors or other prime movers.
- Trailing equipment may include a range of trailers, fertiliser spreaders, fuel tanks.
- Equipment may include fork-lifts, hydraulic equipment, hydroplats, stationary engines, pumps, irrigation equipment, excavators, spraying equipment, hedging machines, solar and wind powered equipment, elevated work platforms, cherry pickers, scissor lifts, chippers.
- Preparation of independently powered tools may include sharpening, priming pumps, clearing filters, general cleaning.
- Some equipment may require additional licensing.
- Operating conditions may include on and off road conditions which may be smooth, rough, slippery, boggy, steep or hilly.
- Tyre pressures are maintained at levels appropriate to operating conditions.
- Operating methods may include those for turbo-charged engines.
- All storage, maintenance and operation must conform to relevant occupational health and safety legislation.
- Records may be paper-based or electronically processed.

Evidence Guide

Underpinning Skills and Knowledge:

- A basic working knowledge of:
  - road traffic laws
  - occupational health & safety procedures for various equipment
  - enterprise procedures for various equipment
  - relevant occupational health & safety requirements for storage of materials and equipment.

An ability to:

- operate trailed and mounted equipment
- operate stationary equipment
- operate independently powered tools.

OH &S issues which impact upon the performance of this unit:

- Relevant OH&S hazards identification, risk assessment and risk control measures. These include:
  - Safe operation and maintenance of machinery and equipment
  - Selection, use and maintenance of relevant personal protective clothing and equipment.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or though simulation, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Required licences and permits.
- Driving vehicles in a range of conditions.
- Emergency procedures in the operation of vehicles and equipment.

Linkages to Other Units:

- There is a strong link between this unit and other operational units such as:
  - THTGTM02A Carry Out Grounds Maintenance
  - RUHHRT104A Provide Turf Care.
- Combined training/assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	2
Using Technology	2

Unit RUHHRT222A

Operate and Maintain Chainsaws

Unit Descriptor

This Unit of Competence describes the operation and maintenance of a chainsaw to cross cut timber on the ground. Chainsaw operation is likely to be under routine supervision with intermittent checking. Competency at this level involves the application of knowledge and skills to a range of chainsaw operation and maintenance tasks and roles. Competencies are usually within established routines, methods and procedures. This unit is from the National Horticulture Competency Standards.

Element		Performance Criteria
1	**Perform routine daily maintenance on a chainsaw**	• Daily routine pre-start checks are completed in accordance with instruction manual. • Chain bar is removed, burrs removed, cleaned and reassembled. • Chain tension is adjusted according to model specifications • Say is oiled and refuelled, using safe working procedures.
2	**Sharpen chainsaw chain**	• Chainsaw chain is sharpened to manufacturer's specifications. • Depth gauges are checked and adjusted to manufacturer's specifications. • Irregularities and faults are reported to supervisor. • Cutting rate is compared with that anticipated from knowledge of saw, log sized, species and condition. • Sawing problems that arise are recognised or reported according to site requirements. • Communication with supervisor and other workers is maintained to ensure efficient work flow co-ordination and personnel cooperation.

3	**Cross cut fallen timber on the ground**	• Chainsaw and safety equipment and selected according to the requirements of the task. • Personal safety clothing and equipment are identified and used as required by legislation. • Safe working procedures, including the selection of a safe working site, are utilised as an integral part of work routines. • Log to be sawn is visually assessed for defects. • Bridging cuts, swinging cuts, boring cuts, limbing and horizontal cuts are performed according to industry standards and safe working practices.

Range of Variables

- Routine pre-start checks may include checking and cleaning of air filter, chain, chain brake, bar and all nuts and bolts.
- Timber cut may be hardwood or softwood.
- Logs are cut on a level surface and clear surface.
- OH&S requirements include manual handling, protective clothing, elimination of hazards, use of chainsaws, use of hand tools and organisation safety policy.

Evidence Guide

Underpinning Skills and Knowledge:

- A basic working knowledge of:
  - OH&S relating to chainsaw use, manual handling
  - maintenance procedures for chainsaws, oils and fuels
  - personal protective safety equipment
  - legislation and licences governing chainsaw use.
- An ability to:
  - perform routine daily maintenance on a chainsaw
  - sharpen chainsaw chain
  - cross cut fallen timber on the ground.

OH &S issues which impact upon the performance of this unit:

- Relevant OH&S hazards identification, risk assessment and risk control measures.
- These include:
  - Systems to ensure that workers undertake OH&S induction
  - Systems to ensure that workers' safety skills are assessed and training is provided
  - Systems to ensure that workers are involved in the identification and reporting of hazards to health and safety
  - Systems to ensure that risks are assessed by relevant workers
  - Systems to ensure that effective short-term and long-term OH&S risk control measures are implemented
  - Safe manual handling systems and procedures
  - Safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - Selection, use and maintenance of relevant personal protective clothing and equipment.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or though simulation, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Linkages to Other Units:

- There is a strong link between this unit and a rang of horticultural and maintenance units. These include:
  - RUHHRT208A Prune Shrubs and Small Trees

- Combined training/assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit TDTB397

Carry Out Vehicle Maintenance and Minor Repairs

Unit Descriptor

This Unit of Competence deals with the core skills and knowledge required to undertake routine maintenance and minor repairs on vehicles which result from routine inspections. This unit is from the National Road Transport Standards. Users should consult Tourism Training Australia or their local Tourism Training Office to ensure usage of the most up-to-date version of this unit.

Element	Performance Criteria
1 Diagnose vehicle faults and undertake repairs for the safe operation of a vehicle	• Faults in the vehicle electrical system are identified, diagnosed and repaired following manufacturer's specifications and company procedures. • Faults in the fuel system are identified, diagnosed and repaired following manufacturer's specifications and company procedures.
2 Maintain the vehicle systems	• Fluid levels are checked and adjusted following the manufacturer's specifications and enterprise procedures. • Air levels are checked and adjusted following manufacturer's specifications and company procedures.
3 Carry out minor repairs to a vehicle	• Vehicle components are removed, repaired or replaced and refitted to the vehicle using the correct tools and following manufacturer's instructions and company procedures. • Tyres are repaired or replaced on vehicle following company procedures and manufacturer's instructions. • The need for more complex maintenance procedures is identified and the problem correctly referred following company procedures.

4	**Complete documentation**	• Records of routine maintenance and repairs are kept in accordance with company procedures.

Range of Variables

- Types of vehicle include all commercial road transport vehicles, for example, light vehicles, heavy vehicles, combination vehicles.
- Types of minor repairs include all minor repairs, for example, the replacement of headlights, door mirrors, coolant hose, fuse, fan belt, rear tail-light lens, tyres and repair of tyre punctures.
- Types of service include all minor services, for example, replacement of oils and replacement of air in tyres.
- Workplace environment includes all road transport situations, for example:
- operations conducted at day or night
- work conducted in confined spaces, exposed conditions and controlled or open environment
- in the warehouse and at the depot
- in the vehicle on the road
- at the client's workplace
- in a range of typical weather conditions.

- The level of supervision may be limited or minimum supervision.
- OH&S standards according to company and statutory requirements.
- Regulations/legislation include:
  - occupational health and safety legislation
  - company policies and procedures.
- Documentation and reporting systems according to company requirements.
- Procedures are those prescribed for the specific vehicle by the relevant traffic authority and company policies.

Evidence Guide

Underpinning Skills and Knowledge:

- To demonstrate competence, evidence of skills and knowledge in the following areas is required:
  - OH&S requirements
  - inspection procedures
  - service procedures
  - operation of electrical system
  - operation of fuel system
  - basic fault finding procedures
  - reporting and documentation requirements
  - reading and comprehension of simple statements in English
  - writing of simple reports
  - ability to apply housekeeping standards
  - ability to use and maintain all required materials, tools and parts recognition and diagnosis of faults and vehicle irregularities
  - ability to perform work under the required level of supervision
  - ability to minimise waste.

Context of Assessment:

- Competence must be demonstrated for the relevant classification of vehicle, by day and night and in varied weather conditions.
- Assessment of this unit of competence will usually include observation of work processes and procedures; measurement and evaluation of products or work outcomes; oral and/or written questioning on underpinning knowledge and skills.

Linkages to Other Units:

- This unit should be assessed alone.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	2
Using Technology	2

Unit THTGTM01A

Carry out General Maintenance

Unit Descriptor This Unit of Competence deals with the skills and knowledge required to carry out general maintenance activities in tourism enterprises.

Element		Performance Criteria
1	**Perform maintenance tasks**	• Prompt response is made to requests for maintenance assistance. • Maintenance tasks are carried out correctly, promptly, in accordance with company policy and procedures. • Tasks are carried out according to schedule. • Tasks are carried out with minimum disruption to customers. • Work areas are enclosed where appropriate to ensure safety of customers. • Completed work meets quality requirements. • Work areas are cleaned at completion of work. • Problems requiring specialist assistance are identified, and help is sought from the appropriate tradesperson or supervisor.
2	**Use and care for equipment**	• Problems or faults are identified and reported to appropriate personnel. • Basic maintenance is carried out on equipment on a regular basis according to company practice. • Equipment is stored in the designated area. • Equipment is stored safely according to manufacturer's specifications and occupational health and safety standards.
3	**Perform administrative tasks**	• Maintenance request forms are accurately interpreted. • Instructions are clarified with the person making a request, when required. • Work report forms are accurately completed and forwarded to the appropriate person.

4	**Assist in special projects**	• Work on special projects is correctly carried out under direction from the appropriate specialist or supervisor. • Liaison with other project members is undertaken to ensure effective co-ordination of tasks in the total project.
5	**Liaise with contractors**	• Contact is established and maintained with appropriate contractors to ensure effective co-ordination of maintenance work. • Assistance and information is provided to contractors when required. • Accurate information is relayed between contractors and maintenance supervisors when required.

Range of Variables

- This unit may apply to any sector of the tourism industry but has particular relevance for attractions and theme parks.
- Maintenance tasks may include:
- simple repairs
- servicing equipment
- painting & decorating
- minor demolition.
- Special projects may include:
- construction of new attractions
- landscaping
- major demolition.

Evidence Guide

Underpinning Skills and Knowledge:

- To demonstrate competence, evidence of skills and knowledge in the following areas is required:
  - customer service skills
  - safety and emergency procedures in relation to general maintenance activities
  - technical/equipment procedures for commonly used maintenance tools and equipment.

Context of Assessment:

- This unit must be assessed through practical demonstration on-the-job or in a simulated workplace environment where access to items requiring maintenance and maintenance equipment are provided. This should be supported by a range of methods to assess underpinning knowledge.

Critical Aspects of Assessment:

- Look for:
  - ability to safely and correctly use equipment
  - ability to perform a range of routine maintenance tasks within enterprise acceptable timeframes
  - knowledge of general procedures and requirements that apply to routine maintenance work.

Linkages to Other Units:

- There is a link between this unit and the following unit:
- THTGTM02A Carry out Grounds Maintenance.
- Combined delivery/assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit THTGTM02A

Carry Out Grounds Maintenance

Unit Descriptor This Unit of Competence deals with the skills and knowledge required to carry our general grounds and garden maintenance in tourism enterprises.

Element	Performance Criteria
1 Perform routine gardening activities	• Routine gardening activities are correctly carried out under direction from the supervisor. • Proven gardening techniques are correctly used. • Correct clothing is worn according to type of work being completed and prevailing conditions. • Tasks are carried out according to schedule. • Minimum disruption is caused to customers. • Completed work meets quality requirements. • Work areas are cleaned at completion of work. • Problems requiring specialist assistance are identified and help is sought from the appropriate supervisor.
2 Monitor the appearance and quality of grounds and gardens	• Sickly and unsightly plants are identified and removed or treated. • Grounds are kept free of litter. • Lawns are kept in condition as specified by the enterprise. • Beds and lawns are kept free of weeds. • Hazards are identified and action taken promptly within the scope of individual responsibility. • Ways of improving grounds and gardens presentation are identified and suggested to the appropriate supervisor.

3	**Use and care for equipment**	• Problems or faults are identified and reported to appropriate personnel. • Basic maintenance is carried out on gardening equipment according to company practice. • Equipment is stored in the designated area. • Equipment is stored safely according to manufacturer's specifications and occupational health and safety standards.
4	**Assist in special gardening projects**	• Work on special projects is correctly carried out under direction from the appropriate specialist or supervisor. • Liaison with other project members is undertaken to ensure effective co-ordination of tasks in total project.
5	**Liaise with contractors**	• Contact is established and maintained with appropriate contractors to ensure effective co-ordination of maintenance work. • Assistance and information is provided to contractors when required. • Accurate information is relayed between contractors and maintenance supervisors when required.

Range of Variables

- This unit may apply to any sector of the tourism industry but has particular relevance for attractions and theme parks.
- Routine gardening tasks may include but are not limited to:
- mowing
- weeding
- pruning
- planting and sowing
- spraying.
- Gardening projects may include but are not limited to:
- new beds
- landscaping
- planting
- moving plants and trees.

Evidence Guide

Underpinning Skills and Knowledge:

- To demonstrate competence, evidence of skills and knowledge in the following areas is required:
  - customer service skills
  - safety and emergency procedures in relation to grounds maintenance
  - technical/equipment procedures for commonly used equipment in grounds maintenance
  - chemical usage in grounds maintenance
  - basic gardening techniques
  - basic plant knowledge
  - environmental issues and legislation affecting grounds maintenance.

Context of Assessment:

- This unit must be assessed through practical demonstration on the job or in a simulated workplace environment with access to gardens and gardening equipment. This should be supported by a range of methods to assess underpinning knowledge.

Critical Aspects of Assessment:

- Look for:
  - ability to correctly and safely operate equipment
  - ability to perform a range of routine ground maintenance tasks within enterprise acceptable timeframes
  - knowledge of general procedures and requirements that apply to grounds maintenance work.

Linkages to Other Units:

- There is a link between this unit and the following units:
  - THTGTM01A Carry out General Maintenance

- Combined delivery/assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT419A

Supervise Machinery Maintenance

Unit Descriptor

This Unit of Competence is concerned with the supervision of machinery maintenance including assessing maintenance requirements, scheduling and monitoring of maintenance activities. Work is likely to be under limited supervision with checking related to overall progress. Responsibility for the work of others may be involved and team co-ordination may be required. Competency involves the application of knowledge with depth in come areas and a broad range of skills. Competencies are normally applied within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints. This unit is from the National Horticulture Competency Standards.

Element		Performance Criteria
1	**Determine maintenance requirements**	• Maintenance problems are identified from operational diaries, employees comments and/or personal testing and observation. • Likely causes of problems are determined and appropriate action is taken.
2	**Schedule resources**	• Resources required to carry out maintenance are determined according to organisation requirements. • Maintenance supplies are purchased according to scheduled requirements. • Maintenance is scheduled to suit total property operations. • Maintenance requirements are communicated to staff for actioning.

3	**Monitor maintenance procedures**	• Maintenance work is monitored to ensure property production operations are not interrupted. • Costs are controlled to meet organisation budgets. • Documentation for maintenance is recorded according to organisation requirements.

Range of Variables

- Appropriate action may include obtaining information from a variety of sources, solving problems eliminating causes.
- Resources may include labour, equipment, materials.
- Maintenance may include preventative, corrective or breakdown.
- Maintenance may be performed on property improvements, plant, machinery, and equipment.
- Maintenance requirements may include extent of work, parts to be used, quality of repair.
- Staff may include self, family, full time, part time, casual or permanent employees, contractors, professionals

Evidence Guide

Underpinning Skills and Knowledge:

- A basic knowledge of:
  - Scope and range of organisation machinery and equipment
  - Maintenance needs and related activities
  - Scheduling of maintenance works
  - Communication systems for notification and recording of maintenance
  - Techniques for evaluating maintenance procedures
  - Cost benefit of out-sourcing maintenance activities.
  - An ability to:
  - Determine maintenance requirements
  - Schedule resources
  - Monitor maintenance procedures.

Context of Assessment:

- This unit may be assessed on or off the job. Assessment should include practical demonstration either in the workplace or though simulation. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Evidence should include a demonstrated knowledge of machinery and an ability to apply that knowledge to a specific working environment. Evidence should also include the following:
  - Interpersonal skills
  - Observation and analysis
  - Resource allocation.

Linkages to Other Units:

- There is a link between this unit and the following units:
  - RUHHRT207A Operate Equipment and Machinery.
  - RUHHRT222A Operate and Maintain Chainsaws
  - TDTB397 Carry out Vehicle Maintenance and Minor Repairs.
- Combined training/assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	2
Communicating Ideas and Information	2
Planning and Organising Activities	3
Working with Others and in Teams	3
Using Mathematical Ideas and Techniques	1
Solving Problems	3
Using Technology	2

Unit THTGTM04A

Carry Out Specialist Maintenance and Construction

Unit Descriptor This Unit of Competence deals with the skills and knowledge required to undertake specialist maintenance and construction activities in tourism enterprises. These activities are generally carried out by qualified trades people.

Element		Performance Criteria
1	**Perform specialist maintenance and construction tasks**	• A prompt response is made to requests for maintenance assistance. • Specialist maintenance and construction is correctly performed according to established trade practice and safety standards. • Contact is established and maintained with other specialist trades people where appropriate to ensure effective and efficient co-ordination of tasks within an overall project. • Relevant colleagues are kept informed of work progress and any changes to schedule. • Completed work meets quality requirements. • Work is completed within the allocated budget. • Work is conducted in a manner which causes minimum disruption to customers.
2	**Supervise trade assistants**	• Trade assistants are given clear work instructions. • Understanding is checked before work commences. • The quality of work is monitored and remedial action taken where necessary. • Assistance from maintenance supervisors is sought where appropriate.

3	**Maintain supplies and equipment**	• Specialist supplies are monitored to ensure continuity of supply. • Additional supplies are ordered within time parameters which prevent delay to maintenance and construction work. • Equipment is checked and action taken to initiate any repairs so that impact on progress of work is minimised.
4	**Carry out administrative procedures**	• Work report forms are accurately completed and forwarded to the appropriate area in the required timeframe. • Order forms are accurately completed and processed according to company policy and procedures. • Statutory documents are correctly completed and forwarded to authorities within the required timeframe. • Labour and equipment costs are correctly estimated and supplied to the appropriate supervisor as required.
5	**Identify and resolve maintenance and construction problems**	• Problems which fall within the area of expertise are promptly identified and action initiated to resolve the situation. • Colleagues are informed of the nature of the problem and the course of action to be taken. • Safety issues are identified and reported according to company policy and procedures. • The need for specialist assistance is identified. • Specialist assistance is organised according to company policy and procedures.
6	**Coordinate contractors**	• Problems requiring specialists are identified. • Specialist maintenance contractors are employed according to enterprise policy. • Specialists are accurately informed of job specifications. • Contractors are monitored to ensure that the work is carried out according to specifications. • Administrative requirements for contracted work are correctly completed within the appropriate timeframe.

7	**Participate in construction of new rides and attractions**	• Specialist work on rides and attractions is carried out at the direction of the designated expert. • Special safety issues are considered during performance of the work. • Issues unique to rides and attractions are analysed prior to commencement of the specialist trade work. • Liaison is undertaken with members of the project team to ensure effective co-ordination of ride construction.

Range of Variables

- This unit may apply to any sector of the tourism industry but has particular relevance for attractions and theme parks.
- Specialised trade areas may include but is not limited to:
- mechanics
- carpenters and builders
- electronics technicians
- audiovisual
- pyrotechnicians
- fitters and turners
- plumbers
- electricians
- marine mechanics
- fibre glassers
- groundspersons and gardeners
- painters and decorators
- locksmiths
- filtration technicians.
- Maintenance operations may be for the following areas:
- equipment (including rides)
- water operations (including pools)
- vehicles
- grounds and gardens
- buildings
- animal enclosures
- gates and fences
- amenities
- theatres, stages and podiums.

Evidence Guide

Underpinning Skills and Knowledge:

- Qualification in the appropriate specialist trade or post trade area is a prerequisite for this unit.
- To demonstrate competency evidence of skills and knowledge in the following areas is required:
  - customer service skills
  - enterprise safety and emergency procedures
  - general knowledge of the tourism industry and of the operation of tourist facilities.

OH&S issues which impact upon the performance of this unit:

- Relevant OH&S hazards identification, risk assessment and risk control measures. These include:
  - systems to ensure that workers undertake OH&S induction
  - systems to ensure that workers' safety skills are assessed and training is provided
  - systems to ensure that workers are involved in the identification and reporting of hazards to health and safety
  - systems to ensure that risks are assessed by relevant workers
  - systems to ensure that effective short-term and long-term OH&S risk control measures are implemented
  - safe manual handling systems and procedures
  - safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - selection, use and maintenance of relevant personal protective clothing and equipment.

Context of Assessment:

- This unit must be assessed through practical demonstration on the job where actual construction and maintenance projects are undertaken, with access to necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.

Critical Aspects of Assessment:

- Look for:
  - ability to integrate technical trade skills with the requirements of working within the environment of a tourist facility
  - ability to communicate effectively with other trades people and colleagues
  - ability to coordinate and monitor specific construction and maintenance projects to meet enterprise timelines.

Linkages to Other Units:

- This unit should be assessed alone.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	2
Communicating Ideas and Information	2
Planning and Organising Activities	2
Working with Others and in Teams	2
Using Mathematical Ideas and Techniques	1
Solving Problems	2
Using Technology	1

Unit RUHHRT435A

Cost a Project

Unit Descriptor

This Unit of Competence describes the process of estimating labour and materials to cost a project. Costing is likely to be under limited supervision from others with checking only related to overall progress. Costing involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. Costing is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

Element	Performance Criteria
1 Obtain and calculate costs for material, equipment and labour	• Current and valid prices for materials, equipment and labour costs stated in the project plan are obtained from all sources. • Add-on costs are taken into consideration as required by the project and the enterprise. • Labour costs are estimated for a range of factors specific to the enterprise. • Labour and price estimation is completed in an acceptable time with the minimum of waste and re-work. • Total material, equipment and labour costs are accurately and concisely recorded according to enterprise guidelines.
3 Summarise costing	• The strict adherence to enterprise procedures for project costing provides cost effective project outcomes. • All necessary and appropriate material, equipment and labour costs are interpreted in order to summarise the costing. • Calculations are accurately and concisely recorded in accordance with organisation guidelines. • Summary of costing is completed with the minimum of waste and re-work.

Range of Variables

- Material, equipment and labour costs may be recorded verbally, on printed schedules, in a project report against the project plan.
- Labour costs may be estimated from the following factors:
- the hours stated in the project plan
- the hourly rate of individuals to be involved in the project
- any additional rates to be paid for work done out of regular hours
- any additional rates to be paid for work with specified substances or in specified locations as stated in the relevant labour award.
- Sources for costings may include supervisor, enterprise records, suppliers, manufacturers, employment agencies, equipment hiring firms, labour hiring firms.
- Add-on costs may include State and Federal taxes, worker's compensation levies, leave entitlements, public holiday implications.

Evidence Guide

Underpinning Skills and Knowledge:

- A basic working knowledge of:
  - relevant awards, State/Federal and management policies relating to hiring and the use of labour
  - relevant suppliers and manufacturers
  - occupational health and safety implications
  - calculations performed to cost a project.
  - An ability to:
  - obtain and calculate costs for material, equipment and labour
  - summarise costing.

OH&S issues that impact upon the performance of this unit:

- Relevant OH&S hazards identification, risk assessment and risk control measures. These include:
  - safe manual handling systems and procedures
  - safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - OH&S legislation, relevant regulations and codes of practice in each state, including:
    - occupational health and safety act of the state
    - regulations and/or codes of practices pertaining to hazardous substances
    - regulations and/or codes of practice pertaining to plant.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or through simulation. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Evidence should include a demonstrated ability to make cost effective judgements and a sound knowledge of labour hiring requirements.

Linkages to Other Units:

- There is a link between this unit and a range of operational and service units and combined training and assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	2
Communicating Ideas and Information	2
Planning and Organising Activities	2
Working with Others and in Teams	3
Using Mathematical Ideas and Techniques	2
Solving Problems	2
Using Technology	1

Unit RUHHRT104A

Provide Turf Care

Unit Descriptor

This Unit of Competence applies to the basic maintenance of grassed areas in places such as private residences, roadside verges, commercial properties, public parks and recreational areas and at sporting facilities. The work is likely to be under direct supervision with regular checking. Competency involves the application of knowledge and skills to a limited range of lawn maintenance tasks. There is a specified range of duties and contexts where the choice of actions required is made quite clear by supervisors.

Element	Performance Criteria
1 Mow grassed areas	• Mower is serviced to manufacturer's specifications and organisation policy. • Grass is mown at height and in a pattern specified by supervisor. • Mowing is at an appropriate distance from trunks of trees and shrubs to prevent damage. • Mower controls are used safely and efficiently to complete the mowing program according to supervisors instructions. • The mower is manoeuvred in a controlled manner without excessive speed in accordance with organisation occupational health and safety guidelines.
2 Maintain grassed areas and surrounds	• Rubbish collected, weeds are removed according to supervisors instructions and disposed of according to enterprise guidelines. • Grass mown and edges trimmed to meet presentation standards of the organisation. • Tools and equipment cleaned, maintained and stored consistent with manufacturer's specifications and enterprise policy.

Range of Variables

- Turf maintenance activities may include:
  - mowing with pedestrian or ride-on machines and edge trimming.
  - Tools and equipment may include:
  - 2 and 4 stroke pedestrian and ride-on rotary mowers
  - cylinder mowers
  - motorised blowers
  - pavement sweepers
  - diesel ride-on mowers and sweepers
  - turf edging machines and brush cutters.
  - Vehicle licences are required when turf maintenance equipment must be driven on public roads.

Evidence Guide

Underpinning Skills and Knowledge:

- A basic working knowledge of:
  - occupational health and safety guidelines
  - manual handling guidelines
  - enterprise standards for grass appearance
  - correct use and care of equipment
  - AS 1742 pt. 3 1985 – Australian Standard Code of Practice, work site traffic management
  - correct set-up, use and cleaning procedures for tools and mowing equipment, minor repairs and service requirements.

An ability to:

- mow grassed areas
- maintain grasses areas.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or through simulation. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Site must be tidied upon completion of tasks.
- All safety procedures must be adhered to/followed.
- Safety and comfort of guests must be demonstrated as a primary consideration.

Linkages to Other Units:

- There is a link between this unit and a range of other operational and service units. These include:
  - RUHHRT207A Operate Equipment and Machinery
  - RUHHRT315A Operate Irrigation Systems
  - THTGTMO2A Carry out Maintenance of Grounds.
- Training delivery and training resources developed to support this unit should address specific workplace requirements and training methodologies linking co-assessment and pre-requisites.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	-

Unit RUHHRT213A

Fell Small Trees

Unit Descriptor

This Unit of Competence describes small tree felling work undertaken by arborists and gardeners in a low hazard environment. Tree felling is likely to be under routine supervision with intermittent checking. Responsibility for some roles and co-ordination within a team may be required. Tree felling at this level involves the application of knowledge and skills to a range of felling tasks. Tree felling is usually within established workplace routines, methods and procedures. This unit is from the National Horticulture Competency Standards.

Element	Performance Criteria
1 Determine natural direction of fall	• Topography and site conditions are assessed and all factors influencing the determination of the direction of fall are identified according to established tree felling principles. • Natural direction of fall is determined having regard for weight bias, canopy distribution, lean on tree, together with topography and site conditions. • Hazards associated with felling operation are identified according to industry practice.
2 Remove obstructions within fall zone	• Clearance zone is established by calculation of height of tree using published mathematical principles. • Safety margin for drop zone is determined by identifying wind direction and speed at the time of felling. • Drop zone is cleared of all articles which may be damaged by felled tree according to organisation policy.
3 Bring down tree	• Clear escape route is established at 45 degrees diagonally away from the proposed line of fall. • Standard scarf and back-cut is applied to base of tree at level and depth determined by ground conditions and state of canopy and according to enterprise policy.

		• Safe working practices are employed according to occupational health and safety requirements. • Tools and equipment are cleaned, maintained and stored consistent with manufacturer's specifications and enterprise guidelines.
4	**Clear felled tree from drip site**	• Appropriate method of clearing the site of felled tree is determined. • Machinery required for removal of felled tree is selected and used according to manufacturers specifications. • Drop site is cleared of tree and all tree debris. • Load to be removed is secured according to given instructions, using appropriate equipment. • Safe work practices specific to felled tree removal from the site are observed at all times.

Range of Variables

- Low hazard environment means level ground, open space, no overhead powerlines.
- Factors influencing the determination of the direction of fall include weight bias, canopy distribution, degree of lean, topography, site conditions.
- Trees may include small and medium sized (maximum height 10m and maximum diameter at breast height, DBH, 300mm).
- Equipment used may include small chainsaw (up to 350mm with engine capacity not exceeding 50cc), hand saws, safety equipment.
- Site conditions may include weather conditions, obstructions, distance to obstacles, overhead wires.
- Trees to be felled in one piece from ground level.

Evidence Guide

Underpinning Skills and Knowledge:

- A basic working knowledge of:
  - felling considerations relating to weather conditions, position and location of trees
  - identifying weight bias impacting upon felling operations
  - potential hazards when felling trees.

An ability to:

- determine natural direction of fall
- remove obstructions with fall zone
- bring down tree
- clear felled tree from drop site.

OH&S issues which impact upon the performance of this unit:

- Relevant OH&S hazards identification, risk assessment and risk control measures. These include:
  - systems to ensure that workers undertake OH&S induction
  - systems to ensure that workers' safety skills are assessed and training is provided
  - systems to ensure that workers are involved in the identification and reporting of hazards to health and safety
  - systems to ensure that risks are assessed by relevant workers
  - systems to ensure that effective short-term and long-term OH&S risk control measures are implemented
  - safe manual handling systems and procedures
  - safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - selection, use and maintenance of relevant personal protective clothing and equipment.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or through simulation, with access to necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Evidence should include a demonstrated understanding of working in accordance with health, safety and security procedures, and of the potential implications of disregarding those procedures. It should also include the ability to:

- follow established procedures
- interpret, understand and act on instructions
- communicate effectively in the working environment.

Linkages to Other Units:

- There is a strong link between this unit and a range of horticultural or maintenance units and combined training and assessment may be appropriate. These may include RUHHRT214A Transplant Small Trees and RUHHRT222A Operate and Maintain Chainsaws.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT214A

Transplant Small Trees

Unit Descriptor

This Unit of Competence describes basic tree transplanting where the use of lifting machinery and equipment is not involved. Transplanting is likely to be under routine supervision with intermittent checking. Responsibility for some roles and co-ordination within a team may be required. Tree transplanting at this level involves the application of knowledge and skills to a range of transplanting tasks. Transplanting is usually within established workplace routines, methods and procedures. This unit is from the National Horticulture Competency Standards.

Element		Performance Criteria
1	**Prepare tree for removal**	• All underground services are located according to supply authorities' guidelines. • Crown is prepared according to requirements of species, time of removal and enterprise guidelines. • Tree and site are watered prior to transplanting. • Access is provided to ensure all machinery and equipment is operated without damage to surrounding structures and the tree. • Tools and equipment is prepared and used accordingly to supervisor's instructions and manufacturer's guidelines.
2	**Undertake earthworks for tree removal**	• Root ball width and depth is selected to ensure root system can colonise new ground according to needs of the species and size of the specimen. • Root system is prepared and appropriate treatment hygienically applied to ensure viability of tree is maintained according to enterprise guidelines. • Root ball is undercut to ensure the ball comes away cleanly and with minimum stress to the tree, according to enterprise guidelines.
3	**Remove tree from original site**	• Root ball is bound with appropriate material to ensure adequate soil is retained according to enterprise guidelines.

		• Crown is bound and, if required, supported securely to minimise damage during handling and transportation according to enterprise guidelines. • Tree is lifted in a manner which ensures minimum damage and stress according to enterprise guidelines. • Manual lifting practices are performed according to occupational health and safety guidelines.
4	**Install tree in new environment**	• Drainage is incorporated to ensure root system survival is maintained according to needs of the species and conditions of the planting site. • Soil is modified according to the cultural requirements of the species. • Tree is planted in prepared planing hole according to enterprise guidelines. • Tree supported devices are installed according to supervisor's instructions and / or installation plan. • Aftercare is provided to the tree according to enterprise guidelines. • Tools and equipment are cleaned, maintained and stored according to manufacturer's specifications and enterprise guidelines.

Range of Variables

- Trees to be transplanted may include shrubs and small trees which can be transplanted by wheelbarrow.
- Equipment may include hand tools, wheelbarrows, ropes, jacks, tree frames, tie downs.
- Appropriate material for binding may include hessian, sacking, wire frames.

Evidence Guide

Underpinning Skills and Knowledge:

- A basic knowledge of:
  - factors affecting the timing and method of lifting trees
  - causes of damage or drying-out and their prevention
  - safety procedures and potential hazards associated with lifting trees
  - appropriate knots
  - transplanting practices associated with different soil types
  - care, maintenance and protection of trees during transplanting operations
  - nutrition and watering requirements for newly transplanted trees
  - techniques for securing and anchoring transplanted trees.
  - An ability to:
  - prepare tree for removal
  - undertake earthworks for tree removal
  - remove tree from original site
  - install tree in new environment.

OH&S issues which impact upon the performance of this unit

- Relevant OH&S hazards identification, risk assessment and risk control measures. These include:
  - systems to ensure that workers undertake OH&S induction
  - systems to ensure that workers' safety skills are assessed and training is provided
  - systems to ensure that workers are involved in the identification and reporting of hazards to health and safety
  - systems to ensure that risks are assessed by relevant workers
  - systems to ensure that effective short-term and long-term OH&S risk control measures are implemented
  - safe manual handling systems and procedures
  - safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - selection, use and maintenance of relevant personal protective clothing and equipment.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or through simulation, with access to necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.

- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Evidence should include a demonstrated understanding of working in accordance with health, safety and security procedures, and of the potential implications of disregarding those procedures. It should also include the ability to:
  - follow established procedures
  - interpret, understand and act on instructions
  - communicate effectively in the working environment.

Linkages to Other Units:

- There is a strong link between this unit and a range of horticultural or maintenance units and combined training/assessment may be appropriate: These include:
  - RUHHRT208A Prune Shrubs.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	-
Solving Problems	1
Using Technology	1

Unit RUHHRT306A

Establish Planted Areas

Unit Descriptor	This Unit of Competence deals with the layout and planting of a garden. This unit is from the Amenities and Recreational Horticulture Competency Standards.

Element	Performance Criteria
1 Set out a new site	• Setting out of the site is consistent with plans and specifications. • Tools and equipment are chosen appropriate to the task being undertaken, used in accordance with guidelines and safe working practices are employed. • Regulations and legislation relevant to the situation are observed.
2 Prepare a site for planting or replanting	• Soil samples are collected for a soil analysis where required by supervisor. • Requirements to address deficiencies based upon manufacturers specifications and organisation guidelines to meet target chemical balances are determined. • Area to be planted is thoroughly watered to encourage strong root growth. • Plants are laid in the positions described in the garden design or specified by the supervisor.
3 Plant site	• Plants are planted as they have been placed and with no damage to roots or foliage. • Newly planted area is watered in accordance with supervisors instructions. • Tools are chosen appropriate to the task being undertaken, used in accordance with guidelines and safe working practices are employed. • Tools and equipment cleaning and storage procedures are performed and hygiene practices are followed in accordance with organisation guidelines.

Range of Variables

- This unit applies to caravan parks within the broad context of the tourism and hospitality sectors. The following variables may be present:
  - size of project
  - design specifications
  - plans and specifications
  - tools and equipment
  - regulations and legislation
  - soil types
  - plant types
  - requirements to address soil deficiencies
  - organisation environmental policy including water usage, fire protection, and waste management
  - pre-planting treatments required
  - propagation requirements
  - site characteristics
  - external agency permits
  - reporting requirements.

Evidence Guide

Underpinning Skills and Knowledge:

- Evidence is required of the knowledge of:
  - horticultural maintenance
  - landscape construction
  - plant communities
  - plant establishment and after-care
  - plant identification and biology
  - plant performance and requirements
  - planting methods
  - soil amelioration
  - statutory/management policies
  - weeds, pests and diseases identification and control.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or through simulation. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- basic supervision and budgeting
- delegation
- interpersonal skills
- plant reading and interpretation
- working with a team.

Linkages to Other Units:

- There is a strong link between this unit and a range of units with a horticultural focus. These include:
  - THCP337A Propagate Plants
  - THCP338A Prune Trees and Shrubs
  - THCP340A Prepare Plant Displays
  - THCP342A Use Chemicals and Biological Agents.
- Combined training/assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	2
Communicating Ideas and Information	2
Planning and Organising Activities	3
Working with Others and in Teams	3
Using Mathematical Ideas and Techniques	1
Solving Problems	2
Using Technology	1

Unit RUHHRT301A

Prepare Plant Displays

Unit Descriptor This Unit of Competence deals with the skills and knowledge required to prepare plant displays. This unit is from National Horticulture Competency Standards.

Element		Performance Criteria
1	**Design plant displays**	• Site/location is analysed for aesthetic, environmental and physical attributes. • Display plan is prepared in accordance with organisation guidelines. • Plant types suitable for aesthetic effects are identified.
2	**Select plants**	• Plants selected are healthy, vigorous and variety/cultivation is in accordance with display plan. • Number and size of plants selected are in accordance with display plan. • Plants selected display ability to survive in display position for length of display/length of time required.
3	**Place plants**	• Plants are placed in pattern specified by the plan. • Accessories/materials chosen are as specified in the plan. • Display is completed to achieve the organisation's aesthetic standard.
4	**Maintain plants**	• Plants are observed for health qualities in accordance with published data, supplier specifications and historical data. • Plants are fertilised and watered to maintain optimum health and appearance. • Plants are replaced when no longer at optimum health and appearance. • Rubbish, litter and decaying material are removed from plants, pots and surrounds to maintain appearance of display at organisation standard.

Range of Variables

- This unit applies to caravan parks within the broad context of the tourism and hospitality sectors, where there is a strong focus on horticultural development.
  - Plant displays may include:
  - annual bedding displays
  - herbaceous perennial displays
  - indoor presentations.
  - Parameters for analysis may include:
  - light
  - air
  - humidity
  - desired effect
  - nature of event/exhibition
  - time-span of display
  - size of display.

- Plant characteristics may include:
  - colour
  - texture
  - size
  - species
  - longevity.

- Displays designed may include:
  - small displays
  - displays for small functions.

Evidence Guide

Underpinning Skills and Knowledge:

- plant culture and maintenance
- plant biology
- long and short term nutricoats
- plant performance and requirements
- plant establishment and after-care.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or through simulation. This should be supported by a range of methods to assess underpinning knowledge.

- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- plan reading and interpretation
- acceptance of judgement and accountability
- plant nomenclature and identification
- communication
- working as part of a team
- interpersonal skills
- fertiliser application techniques
- design skills.

Linkages to Other Units:

- There is a strong link between this unit and a range of units with a horticultural focus and combined training and assessment may include.
- RUHHRT324A Propagate Plants
- RUHHRT208A Prune Shrubs and Small Trees
- THCTM06A Use Chemicals and Biological Agents.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	2
Communicating Ideas and Information	1
Planning and Organising Activities	2
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT324A

Propagate Plants

Unit Descriptor

This Unit of Competence is concerned with propagation of plants by sexual and asexual methods. The propagation of plants is likely to be under limited supervision from others with checking only related to overall progress. The propagation of plants is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

Element		Performance Criteria
1	**Select propagation material**	• Parent plant is prepared and collection method employed suitable to species and according to enterprise guidelines. • Maximum viability of propagated material is maintained by conditioning and storage according to the requirements of the species. • Tools are chosen appropriate to the task being undertaken, used according to enterprise guidelines and sage working practices are employed.
2	**Prepare growing media**	• Components are prepared according to manufacturer directions, enterprise guidelines propagation method and plant needs. • Storage procedures are performed and hygiene practices followed according to enterprise guidelines.
3	**Preparing growing site**	• Benches are maintained free from contamination and hygiene practices are followed according to enterprise guidelines. • Growing environment is prepared to suit species and propagation method, wee retardants are prepared and applied as specified in planting program. • Tools are chosen appropriate to the task being undertaken, used according to guidelines and safe working practices are employed.

4	**Implement propagation method**	• Pre-planting treatment is applied and/or carried out appropriate to the propagation method and species, according to enterprise policy. • Placement and depth are according to planting method and species. • Plants are handled in a way that minimises damage. • Water and nutrients are applied to suit the media conditions, plant requirements and propagation techniques employed according to supervisors instructions. • Labels and identification are ratified and applied according to enterprise guidelines. • Remedial action is taken as specified in planting program to control pests and diseases. • Records are completed accurately and at the required time according to enterprise guidelines. • Tools are chosen appropriate to the task being undertaken, used according to guidelines and safe working practices are employed. • Tools and equipment cleaning and storage are performed and hygiene practices are followed in accordance with enterprise guidelines.

Range of Variables

- Plants to be propagated may include ornamentals, fruits, nuts, vegetables, herbs, bulbs, fungi.
- Propagation material may include seeds, cuttings, spores, grafted plants, buds, separations/divisions, tissue cultures, rhizomes, plantlets.
- Growing media may include sand, potting mix, gravel, scoria, rock wool, gro-wool, sawdust, pinebark, water (hydroponics).
- Growing environment may include temperature, light, humidity, wind, sun, moisture, topography, rainfall.
- Nutrients may include removal of infected material. Treatment with chemicals.
- Weed retardants may include weed-mat, slatted benches, chemical solutions, granular pre-emergent.

Evidence Guide

Underpinning Skills and Knowledge:

- A basic working knowledge of:
  - media mixing and storage procedures
  - selection of media components for plant species' requirements
  - growing environments and weed retardants that are suited to propagated material
  - pre-planting treatments, water and nutrients suited to propagated material
  - remedial action for weeds, pests and diseases
  - all forms and techniques of propagation.

An ability to:

- select propagation material
- prepare growing media
- prepare growing site
- implement propagation method.

OH&S issues that impact upon the performance of this unit:

- Relevant OH&S hazards identification, risk assessment and risk control measures. These include:
  - safe systems and procedures for handling, transporting and storing chemicals and hazardous substances taking into account toxicity and environmental effects.
  - systems and procedures for the safe operation and maintenance of machinery and equipment
  - safe manual handling systems and procedures
  - safe systems, and procedures for outdoor work, including protection from solar radiation
  - selection, sue and maintenance of relevant personal protective clothing and equipment.
  - OH&S legislation, relevant regulations and codes of practice in each state, including:
  - occupational health and safety act of the state
  - regulations and/or codes of practice pertaining to hazardous substances
  - regulations and/or codes of practice pertaining to plant.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment in the workplace in a simulated environment. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated by construction of a component (in the Range of Variables), using the required materials and tools.

Critical Aspects of Assessment:

- acceptance of judgement and accountability
- delegation
- nursery and plant hygiene
- operation of a computerised program
- planning
- plant identification
- propagation techniques
- propagule collection, treatment and storage
- report writing
- work as part of a team.

Linkages to Other Units:

- There is a strong link between this unit and a range of units with a horticultural focus. These may include:
  - RUHHRT306A Establish Planted Areas
  - RUHHRT208A Prune Shrubs and Small Trees
  - RUHHRT301A Prepare Plant Displays
  - THCGTM06A Use Chemicals and Biological Agents.
- Combined training/assessment may be appropriate.
- Training delivery and training resources developed to support this unit should address specific workplace requirements and training methodologies linking co-assessment and pre-requisites.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	2
Communicating Ideas and Information	2
Planning and Organising Activities	2
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT208A

Prune Shrubs and Small Trees

Unit Descriptor

This Unit of Competence describes ornamental tree and shrub pruning. The work is likely to be undertaken from the ground. Aerial pruning, either from a ladder, an elevated work platform or from climbing ropes and rigging in a tree is covered in separate units. Pruning work is likely to be under routine supervision with intermittent checking. Competency involves the application of knowledge and skills to a range of pruning tasks and roles usually within established enterprise routines.

Element		Performance Criteria
1	**Identify pruning requirements**	• Pruning requirements are established based on sound horticultural practices and consistent with enterprise policy and guidelines. • Plants requiring pruning are identified. • Type of pruning required is determined according to supervisors instructions. • Appropriate tools and equipment required for pruning are identified. • Access to site is determined in consultation with the field supervisor. • Disposal of waste materials is determined according to enterprise policy.
2	**Prepare for pruning**	• Pruning tools and equipment is selected in accordance to location, access and size of material to be pruned. • Safety equipment and personal protective equipment is prepared in line with pruning task requirements.
3	**Undertake pruning of trees and shrubs**	• Plant material to be removed is identified according to pruning program requirements. • Branches are cut according to established horticulture practice. • Tools and equipment are used according to supervisors instructions and manufacturers guidelines.

- Disposal of waste materials is completed according to enterprise policy.
- Site is cleaned and made good on completion of pruning activities.

Range of Variables

- Pruning requirements may include pruning for shape, fruit and flower production, health and vigour, clearance for services and access.
- Types of pruning may include formative and corrective, preventative, ornamental pruning and canopy lifting, thinning, reduction, or management.
- Pruning techniques may include removal of damaged, diseased and dead wood, flowers, foliage.
- Equipment used may include chipper, small chainsaws, ropes, handsaws, secateurs.
- Ground pruning may be undertaken by hand tools, chainsaws

Evidence Guide

Underpinning Skills and Knowledge:

- A basic working knowledge of:
  - principles and methods of pruning to achieve given objectives
  - effects on plant growth and habit by pruning operations
  - principles relating to the choice and use of equipment for pruning

An ability to:

- determine pruning requirements
- plan for pruning
- undertake pruning of trees and shrubs

OH&S issues that impact upon the performance of this unit:

- Relevant OH&S hazards identification, risk assessment and risk control measures. These include:
  - systems to ensure that workers undertake OHS induction
  - systems to ensure that workers safety skills are assessed and training provided
  - systems to ensure that workers are involved in the identification and reporting of hazards to health and safety
  - systems to ensure that risks are assessed by relevant workers
  - systems to ensure that effective short term and long term OHS risk control measures are implemented
  - systems and procedures for the safe operation and maintenance of machinery and equipment
  - safe systems and procedures for handling, transporting and storing chemicals and hazardous substances taking into account toxicity levels and environmental effects
  - safe manual handling systems and procedures
  - safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - selection, use and maintenance of relevant personal protective clothing and equipment

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or through simulation. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Plant identification
- Chainsaw use to Australian Standard
- Communication
- Observation and analysis
- Operations within occupational health and safety guidelines
- Pruning for formative shaping
- Pruning to improve health and vigour
- Pruning within CODIT guidelines

Linkages to Other Units:

- There is a strong link between this unit and a range of units with a maintenance or horticultural focus. Training delivery and training resources developed to support this unit should address specific workplace requirements and training methodologies linking co-assessment and pre-requisites. These unit include:
  - RUHHRT207A Operate and Maintain Chainsaws
  - RUHHRT305A Implement a Landscape Maintenance Program
- Combined training/assessment may be appropriate.
- Training delivery and training resources developed to support this unit should address specific workplace requirements and training methodologies linking co-assessment and pre-requisites.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT316A

Control Weeds

Unit Descriptor

This Unit of Competence is concerned with the control of weeds and pest plants in horticultural situations. Weed control is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. Weed control is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

Element		Performance Criteria
1	**Diagnose weed infestation**	• Observations support a systematic and demanding analysis of available symptoms. • Conclusions drawn from relevant information are based on reasoned argument and appropriate evidence. • Professional advice is obtained where the complexity of the problem or the severity of infestation dictate.
2	**Select control measures for the treatment of weeds**	• Control measures suited to the infestation are identified from integrated pest management strategy. • Treatment suited to crop conditions, severity of infestation, marketing requirements and enterprise circumstances is chosen.
3	**Apply treatments to weeds**	• Treatments are applied having regard to Occupational Health & Safety (OHS) principles, business requirements and sound horticultural practice. • Records are maintained as required by legislation and enterprise guidelines.
4	**Review weed control programs**	• Infestations are monitored and progress compared to manufacturers specifications and enterprise records.

- Treatment programs are modified where necessary and when dictated by progress.
- Supervisor is notified promptly of significant changes to treatments and/or when business implications dictate.

Range Of Variables

- Floriculture, Production:
  - weeds may include declared noxious weeds of the region and state, weeds likely to seriously impact on the profitability of a crop, weeds likely to impact on the management of horticultural practices in a crop for the enterprise.
  - control measures may include chemical, cultural, biological, environmental.

- Landscape:
  - weeds may include declared noxious weeds of the region and state.
  - control measures may include chemical and cultural.

- Nursery:
  - weeds may include declared noxious weeds of the region and state, weeds likely to seriously impact on the profitability of a crop, weeds likely to impact on the management of horticultural practices in a crop for the enterprise.
  - control measures may include chemical, cultural, biological, environmental.

- Parks & Gardens:
  - weeds may include commonly occurring varieties of the enterprise and region, easily controlled and which may impact on the quality of the garden.
  - control measures may include chemical, cultural, biological, environmental.

- Production:
  - weeds may include declared noxious weeds of the region and state, weeds likely to seriously impact on the profitability of a crop, weeds likely to impact on the management of horticultural practices in a crop for the enterprise.
  - control measures may include chemical, cultural, biological, environmental.

- Turf:
  - weeds may include declared noxious weeds of the region and state, weeds likely to impact the management of turf practices.
  - control measures may include chemical, cultural, biological, environmental.

Evidence Guide

Underpinning Knowledge and Skills:

- A basic working knowledge of:
  - the characteristics, signs and symptoms of weed infestations of crops
  - treatment methodologies, behaviour characteristics, withholding periods of various common treatment programs
  - alternate combinations of treatment methodologies
  - local, regional and state based priorities for the use of chemicals in the control of infestations
  - chemical and non-chemical control measures for use and application in the Parks & Gardens industry
  - commercial control principles for weeds
  - labelling conventions for the safe use and storage of a variety of chemicals
  - AS1742 Pt 3 1985 - Australian Standard Code of Practice, Work Site Traffic Management
  - plant biology
  - specialist plant identification.

An ability to:

- diagnose weed infestations.
- select control measures for the treatment of weeds.
- apply treatments to weeds.
- review weed control programs.

OHS issues that impact upon the performance of this unit:

- Relevant OHS hazards identification, risk assessment and risk control measures. These include:
  - safe systems and procedures for storage, handling and transportation of hazardous substances, chemicals selected taking into account toxicity levels and environmental effects
  - systems and procedures for the safe operation and maintenance of machinery and equipment including hydraulics and guarding of exposed moving parts
  - safe manual handling systems and procedures
  - safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - selection, use and maintenance of relevant personal protective clothing and equipment.

Context of Assessment:

- This unit can be assessed on or of the job. Assessment should include practical assessment either in the workplace or through simulation, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Ability to read and understand the safety and usage implications of labels written in English.
- Acceptance of judgement and accountability.
- Computations.
- Observation and analysis.
- OH&S guidelines.
- Plant identification for plant commonly used in the organisation.
- Record keeping.
- Use of spray equipment.
- Identification of weeds, pests and diseases commonly found in the organisation.

Linkages to other Units:

- There is a strong link between this unit and units:
  - RUHHRT324A Propagate Plants
  - RUHHRT208A Prune Shrubs and Small Trees
  - RUHHRT301A Prepare Plant Displays
  - THCGTMO6A Use Chemicals and Biological Agents.
- Combined training/assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT317A
Control Pests and Diseases

Unit Descriptor

This Unit of Competence is concerned with the control of plant pests and diseases in a horticultural situation. Pest and disease control is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. Pest and disease control is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

Element	Performance Criteria
1 Diagnose pest and disease infestations	• Observations support a systematic and demanding analysis of available symptoms. • Samples are collected for laboratory diagnosis where necessary. • Conclusions drawn from relevant information are based on reasoned argument and appropriate evidence. • Professional advice is obtained where the complexity of the problem or the severity of infestation dictate.
2 Select control measures for the treatment of pests and diseases	• Control measures suited to infestation are identified from integrated pest management strategy. • Treatment suited to crop conditions, severity of infestation, marketing requirements and business circumstances is chosen.
3 Review pest and disease control programs	• Infestations are monitored and progress compared to manufacturers specifications and enterprise records. • Treatment programs are modified where necessary and when dictated by progress.

- Supervisor is notified promptly of significant changes to treatments and/or when business implications dictate.

Range Of Variables

- Floriculture, Production:
  - pests may include proclaimed pests of the region, commonly occurring pests of the region, high risk occasionally occurring pests of the region.
  - diseases may include commonly occurring diseases of the region, high risk occasional diseases of the region.
  - control measures may include chemical, cultural, biological and environmental.

- Landscape:
  - pests may include proclaimed pests of the region, commonly occurring pests of the region, high risk occasionally occurring pests of the region.
  - diseases may include commonly occurring diseases of the region, high risk occasional diseases of the region.
  - control measures may include chemical, cultural.

- Nursery:
  - pests may include proclaimed pests of the region, commonly occurring pests of the region, high risk occasionally occurring pests of the region.
  - diseases may include commonly occurring diseases of the region, high risk occasional diseases of the region.
  - control measures may include chemical, cultural, biological and environmental.

- Parks & Gardens:
  - pests may include proclaimed pests of the region, commonly occurring pests of the region, high risk occasionally occurring pests of the region.
  - control measures may include chemical, cultural, biological and environmental.

- Turf:
  - pests may include proclaimed pests of the region, commonly occurring pests of the region, high risk occasionally occurring pests of the region.
  - diseases may include commonly occurring diseases of the region, high risk occasional diseases of the region.
  - control measures may include chemical, cultural, biological and environmental.

Evidence Guide

Underpinning Knowledge and Skills:

- A basic working knowledge of:
  - the characteristics, signs and symptoms of pest and disease infestations of crops
  - life cycles and physiology of families of pests
  - characteristics of pathogenic and non-pathogenic diseases in crops
  - treatment methodologies, behaviour characteristics, withholding periods of various common treatment programs
  - alternate combinations of treatment methodologies
  - local, regional and state based priorities for the use of chemicals in the control of infestations
  - chemical and non-chemical control measures for use and application in the Parks & Gardens industry
  - labelling conventions for the safe use and storage of a variety of chemicals
  - AS1742 Pt 3 1985 - Australian Standard Code of Practice, Work Site Traffic Management.

An ability to:

- diagnose pest and disease infestations.
- select control measures for the treatment of pests and diseases.
- apply treatments to pests and diseases.
- review pest and disease control programs.

OHS issues that impact upon the performance of this unit:

- Relevant OHS hazards identification, risk assessment and risk control measures. These include:
  - safe systems and procedures for storage, handling and transportation of hazardous substances, chemicals selected taking into account toxicity levels and environmental effects
  - systems and procedures for the safe operation and maintenance of machinery and equipment including hydraulics and guarding of exposed moving parts
  - safe manual handling systems and procedures
  - safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - selection, use and maintenance of relevant personal protective clothing and equipment.

Context of Assessment:

- This unit can be assessed on or of the job. Assessment should include practical assessment either in the workplace or through simulation, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Ability to read and understand the safety and usage implications of labels written in English.
- Acceptance of judgement and accountability.
- Computations.
- Observation and analysis.
- OH&S guidelines.
- Plant identification for plant commonly used in the organisation.
- Record keeping.
- Use of spray equipment.
- Identification of weeds, pests and diseases commonly found in the organisation.

Linkages to other Units:

- There is a strong link between this unit and units:
  - RUHHRT324A Propagate Plants
  - RUHHRT208A Prune Shrubs and Small Trees
  - RUHHRT301A Prepare Plant Displays
  - THCGTMO6A Use Chemicals and Biological Agents.
- Combined training/assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit THCGTM06A

Use Chemicals and Biological Agents

Unit Descriptor This Unit of Competence deals with the use of chemicals and biological agents in the care and maintenance of gardens.

Element		Performance Criteria
1	**Obtain chemicals and biological agents**	• Chemicals and biological agents purchased within a budget framework. • Materials Safety Data Sheets (MSDS) requested at time of purchase. • Transport and storage complies with industry standards and relevant legislation.
2	**Prepare chemicals and biological agents for use**	• Chemicals and biological agents selected to organisation requirements. • Directions on the label are followed. • Personal protective equipment is used to industry standards and relevant legislation. • Chemical and biological agents prepared and mixed according to label directions. • Tools and equipment comply with industry standards.
3	**Calibrate equipment**	• Tools and equipment comply with industry and manufacturer's standards. • Equipment is adjusted to required delivery.

4	**Apply chemicals and biological agents**	• Environmental conditions are checked to ensure compliance with organisation requirements, label directions and industry standards. • Chemicals and biological agents are applied at the specified rate and required location. • Withholding periods observed according to label directions. • Residues and containers disposed of to industry standards and legislative requirements. • Equipment is cleaned and stored according to industry requirements. • Personal decontamination procedures are followed to manufacturers instructions.
5	**Maintain records**	• Records of chemical and biological agent recorded to industry standards and relevant legislation.
6	**Implement emergency procedures**	• Hazards are assessed to organisation requirements. • Risks are controlled to organisation requirements. • Organisation procedures for dealing with hazardous events are followed.

Range of Variables

- This unit applies to caravan parks within the broad context of the tourism and hospitality sectors where there is a developing or established or horticultural and grounds maintenance program. The caravan park may be small or large, metropolitan or regional in location.

- Types of chemical may include:
  - target
  - herbicides
  - pesticides
  - fungicides
  - fertilisers
  - growth-regulating compounds.

- Formulation:
  - concentrates
  - powder
  - granular
  - liquid.

- Application methods may include:
  - sprayer
  - airstream
  - aerosol
  - airshear
  - hydraulic
  - control droplet application
  - wick wiper
  - dip
  - injection.

- Equipment checks may include:
  - nozzles
  - hoses
  - regulators/gauges
  - tractor cabin filters
  - pumps and filters.

- Safe working practices may include:
  - identifying hazard levels
  - handling, mixing and applying chemicals
  - use and application of protective equipment and clothing.

- The use of chemical and biological agents may include:
  - the obligations and responsibilities in relation to relevant state legislation relating to the transport, use and storage and disposal of chemicals (including the recognition of the label as a legal document.)
  - the responsibility of the user of chemicals, risks of misuse and liabilities flowing from misuse in terms of the relevant acts of the commonwealth and of the particular states (including the variation between the states.)
  - those chemicals classified as dangerous goods
  - the sources of specific information with regard to chemicals
  - location and significance of information provided on a label of a chemical container
  - safety equipment and first aid procedures required for the use of chemicals
  - requirements related to the safe transport, handling, storage and disposal of chemicals and containers
  - practices during chemical use to protect the environment
  - paths of entry of poisons into the body and methods of limiting exposure and the relevance of poison schedules as they relate to chemicals
  - legal obligations and industry practice for recording chemical applications and storage manifests
  - induced pesticide and herbicide medicine resistance
  - the principles of integrated health management, incorporating hygiene, cultural quarantine, chemical and biological controls.

- Calculations may be applied to:
  - mixing
  - application
  - with-holding periods
  - spatial rates.

Evidence Guide

Underpinning Skills and Knowledge:

- Potential causes of organic injury
- Symptoms of poisoning
- emergency treatment of poisoning
- "food chain" concepts
- potential causes of pollution of natural resource
- legislative framework for chemical usage and state variations
- labelling conversions for the safe use and storage of a variety of chemicals
- recyclable options/opportunities.

Context of Assessment:

- Competence may be demonstrated in the workplace or a simulated work environment
- Competency is demonstrated by reference to:
    - accuracy of mixing, calibration and application to industry standards
    - application records
    - available application equipment in working order
    - calculations of dimension, volume, weight and area
    - collections of operator manuals
    - collections of technical specifications for chemicals
    - first aid kit with contents used correctly
    - successful completion of a chemical users training program
    - use, transport and disposal of chemicals and biological agents and containers to industry standards and legislative requirements
    - works reports and interview.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Basic calculation/numeracy
- Acceptance of judgement and accountability
- Ability to read and understand the safety and usage implications of labels written in English

Linkages to Other Units:

- There is a strong link between this unit and RUHHRT316A Control Weeds and RUHHRT317A Control Pests and Diseases, and combined training and assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT315A

Operate Irrigation Systems

Unit Descriptor

This Unit of Competence is concerned with the operation of irrigation systems. Work is likely to be under limited supervision with checking related to overall progress. Responsibility for the work of others may be involved and team coordination may be required. Competency involves the application of knowledge with depth in some areas and a broad range of skills. Competencies are normally used within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

Element		Performance Criteria
1	**Perform pre-start checks**	• Checks of water, power, fuel and lubricants ensure that all are available and the control system is operational. • Pump is primed if necessary and valves, gates and controls are open or closed as directed. • Water management devices are in position according to design specifications. • Pressure and flow testing equipment is calibrated and available.
2	**Prepare injection or fertigation equipment**	• Injection or fertigation equipment is connected as directed and calibrated according to manufacturers specifications. • Fertiliser concentration is calculated and the solution thoroughly mixed according to enterprise standards. • Injection equipment is flushed out. • Unit equipment is clean or for approximately ten minutes prior to shut down.

3	**Start up and inspect system**	• Start up sequence is implemented in accordance with operations manual and water levels and pressure built up slowly as directed. • All malfunctions, leakages and blockages are corrected or repaired immediately and reported to the supervisor. • Control system is set to ensure time of application for amount of water required is in accordance with irrigation schedule. • Pressure at the headworks and control valves is within design specifications indicating efficient filter operation and water is distributed evenly to the targeted areas with minimal wastage and run-off.
4	**Shut down system based upon irrigation indicators**	• Area is irrigated to the required soil moisture levels and time lag between shut down and end of watering is determined to minimise run-off and deep percolation. • System components are shut down and drained in sequence according the operations manual and irrigation activity is recorded as required according to enterprise guidelines.

Range Of Variables

- Irrigation systems may include mains pressure, low pressure, below ground, above ground, spray systems, dripper systems, capillary, ebb and flow and flood systems.
- Water sources may include underground water supply, mains or surface storage.
- Irrigation equipment may include pumps, motors, tensiometers, probe tubes, solenoid valves, sprinklers, delivery equipment, sprays, system controllers, disinfestation equipment and filters or other water treatment equipment.
- Testing equipment may include pressure gauges, flow meters.
- Injection/fertigation equipment may include pumps, tanks, strainers and injectors.
- Irrigation systems may range from manual operation and monitoring to fully automated with computer control and monitoring.
- Maintenance may include efficiency testing, run off awareness, filter maintenance, legislative requirements.
- Checks may include flow rates, operating pressures, tail waters.
- Inspections may include solenoid adjustments, priming all laterals to prevent water hammer, sprinkler pressure and output, head ditch, tail water, reuse system, flow rate.
- Fertigation may involve leaf, water and soil analyses.
- Treatment systems for both head and tail water.
- Re-use systems including disinfestation and filtering equipment.

Evidence Guide

Underpinning Knowledge and Skills:

- A basic working knowledge of:
  - methods and techniques of irrigation
  - components of an irrigation system
  - characteristics and operation of joints, valves and sprinkler components
  - operation of pumps and water flow rates
  - emergency shut down procedures
  - behaviour of water on varying terrain and soil types
  - soil water retention testing techniques
  - principle and practice in irrigation design
  - water quality and water filtration techniques.

An ability to:

- Perform pre-start checks.
- Prepare injection or fertigation equipment.
- Start up and inspect system.
- Shut down system based upon irrigation indicators.

OHS issues that impact upon the performance of this unit:

- Relevant OHS hazards identification, risk assessment and risk control measures. These include:
  - systems and procedures for the safe operations and maintenance of machinery and equipment including guarding of exposed moving parts
  - safe manual handling systems and procedures
  - protection from hazardous noise
  - safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - selection, use and maintenance of relevant personal protective clothing and equipment.

Context of Assessment:

- This unit may be assessed on or off the job. Assessment should include practical demonstration either in the workplace or through a simulation, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Competence may be assessed on only one type of irrigation system, eg. spray, micro or surface.

Linkages to other Units:

- There is a strong link between this unit and a range of horticultural and maintenance units, and combined training/assessment may be appropriate. These include THCGTM07A Install and/or Modify Irrigation Systems.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit THCGTM07A

Install and/or Modify Irrigation Systems

Unit Descriptor This Unit of Competence deals with the skills and knowledge necessary to plan, construct and commission an irrigation system.

Element		Performance Criteria
1	**Organise resource requirements**	• Labour requirements are organised • Parts and equipment delivered to site are checked an accordance with system drawings and specifications • Damaged parts and equipment delivered to site are identified and replacements organised with supplier • Equipment and machinery is in good working condition in accordance with manufacturers' specifications • Safety hazards are identified and reported according to occupational health and safety standards • Work team is briefed on installation or modifications procedures and requirements • Jobs and tasks are allocated to individual team members in accordance with skills and abilities
2	**Excavate site**	• Site is cleared of debris • Wet areas are identified and dried out • Water is diverted from construction area • Site is marked in accordance with drawings and specifications • Parts and materials are laid out in accordance with drawings and specifications • Trenches are excavated to specifications • Trench beds are prepared according to specifications • Existing plants, crops and/or root systems are not damaged • Safety precautions are implemented in accordance with occupational health and safety standards • Land is cultivated when the right moisture level is present in the soil and soil structure is maintained to organisation standards.

3	**Construct irrigation structures**	• Earth works are carried out in accordance with organisation standards • Bay outlets are constructed to design specifications • Gates are constructed to design specifications • Formwork is constructed to design specifications.
4	**Lay pipes with controls and fittings**	• Pipes are supported by bedding as required in accordance with load to be carried • Pipes are laid in accordance with drawings and specifications • Connecting surfaces including O-rings are cleaned of debris • Pipes are joined in accordance with manufacturer's specifications • Valves, fittings and thrust blocks etc. are installed to design specifications • Existing plants, crops and/or root systems have not sustained major damage • Safety precautions and manual handling techniques are implemented in accordance with occupational health and safety standards.
5	**Connect mechanical devices**	• Mechanical devices are connected according to design specifications and manufacturer's requirements.
6	**Flush system**	• System is checked for free water movement.
7	**Install soil moisture measuring devices**	• Irrigation scheduling devices/controls are located at the site in accordance with design specifications • Devices are positioned in relation to the crop/plant and sprinkler in accordance with design specifications • Irrigation scheduling devices/controls are placed in accordance with design specifications • Irrigation scheduling devices/controls are connected to the recording instrument and the control system where appropriate and in accordance with design specifications.

8	**Commission irrigation system**	• Start-up sequence is in accordance with operations manual • System is flushed as required in accordance with design specifications • Water levels and/or pressure is built up slowly in accordance with design requirements • Valves are set allowing for water flow to targeted areas • Operating faults are identified and corrective action taken in accordance with operator's manual • Testing/monitoring equipment (pressure gauges, flow meters) is calibrated to manufacturers specifications • Test procedures are recorded legibly in operator's manual • System operates in accordance with design specifications.

Range of Variables

- This unit applies to caravan parks within the broad context of the tourism and hospitality sectors. The caravan park may be small or large, metropolitan or regional in location.
- Micro Irrigation Systems include:
  - drip emitters
  - integrated drip line, heavy and thin wall
  - mini sprinklers operating at 300kpa or less
  - spray nozzles operating at 300kpa or less.
- Spray Irrigation Systems include:
  - travelling irrigators – soft hose, hard hose, boom type
  - centre pivot
  - linear move
  - powered side roll
  - hand shift
  - permanent (installed)
  - bike shift/easy shift.
- Surface Irrigation Systems include:
  - border check
  - contour irrigation
  - furrow irrigation
  - hillside flooding
  - basin irrigation.
- May be sub-surface irrigation.
- Soil type will vary from region to region.
- Terrain and soil conditions will vary.
- Original site plans may not exist.
- System and parts may vary according to brand and supplier.
- Regulations may vary between Local Government and States and Territories.
- Local utilities and existing services are researched.
- Debris may include fences, trees, shrubs and rubbish.

- Plant and equipment availability may vary and may include:
  - dozers
  - graders
  - scrapers
  - excavators
  - backhoes.
- May apply to irrigation and/or drainage system.
- Soil condition may vary between regions.
- Pipes and their use should comply with australian standards requirements.
- Type and size of pipes may vary.
- Traffic loads may vary from system to system.
- Depth of water table may vary between regions.
- Depth and width of trenches may vary from system to system and by soil type.
- Mechanical devices may include:
  - filters, pumps, moveable sprinklers etc.
  - water metering device
  - automated irrigation equipment.
- Type and size of pipes will vary.
- System may be automatically controlled.
- Scheduling devices may include:
  - automatic timers
  - computers etc.
- Depth of scheduling devices may vary according to type of system and or system design.
- Devices may include:
  - control wires
  - tubes etc.
- Flow rate at selected outlets are determined as required.
- Pressures and water levels at selected sites are verified as required.

- Commissioning checks may include:
  - gates tested for water tightness
  - no leaks through backfill around culverts
  - pumps perform smoothly
  - valves close smoothly
  - pump is connected to power source according to design specifications.
- All valves may not be open at the same time.

Evidence Guide

Underpinning Skills and Knowledge:

- To demonstrate competence, evidence of skills and knowledge in the following areas is required:
    - various pipe, tube and wire types
    - plan and specification interpretation
    - general irrigation system knowledge
    - knowledge of system being installed / constructed
    - calculation of low rates and pressure differentials
    - systematic testing procedures
    - local utilities and existing services
    - knowledge of applicable Australian Standards
    - Occupational health and safety industry relations regulations and awards
    - soil compaction techniques
    - soil inspection methods
    - formwork construction
    - bay outlet construction
    - gate construction
    - control cable installation
    - mechanical device assembly
    - nozzle installation
    - recording instrumentation installation
    - calibration of testing / monitoring equipment
    - pipe, tube and wire joining methods
    - plan/equipment/construction plant assembly manual reading
    - excavation techniques
    - pipe laying techniques
    - backfilling techniques
    - plant operation
    - site marking
    - negotiation techniques
    - fax operation
    - excavator operation
    - dozer operation
    - operation of specialist construction equipment (eg. crane).

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or within a simulated environment, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Competence may be assessed on only one type of irrigation system, eg. Spray, Micro or Surface.
- Linkages to Other Units:
  - There is a close link between this unit and unit RUHHRT315 A Operate Irrigation Systems.

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Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	2
Communicating Ideas and Information	2
Planning and Organising Activities	2
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	2
Solving Problems	2
Using Technology	2

Unit RUH HRT238A
Install Paving

Unit Descriptor

This Unit of Competence is concerned with the installation of modular paving. The work is likely to be under routine supervision with intermittent checking. Competency involves the application of knowledge and skills to a range of setting out and installation tasks and roles usually within established enterprise routines.

Element	Performance Criteria
1 Plan and prepare work	• Materials and quantities are determined from job drawings and specifications. • Appropriate personal protective equipment is selected and fitted according to OHS requirements. • Tools and equipment are selected and checked for serviceability to ensure they are suitable for the job to be undertaken. • The quality of materials is checked to ensure they are free of defects and conform to the specification details.
2 Set out and prepare for construction	• The position of works is marked out according to job drawings and specifications. • The layout is checked for compliance with job details and/or client's needs and adjusted where necessary. • Signage and barriers are erected where required according to OHS regulations. • Where required, temporary bench marks or datum points are established in close proximity to works from survey bench mark. • The reduced levels of the proposed works are calculated and pegged from the temporary bench marks using the rise and fall method in a closed level run.

3	**Undertake ground preparation**	• The site is excavated to shape, depth and dimensions to sub base level according to job drawings and specifications. • The sub base is trimmed to levels and falls to ensure final level of completed works can be achieved according to job drawings and specifications. • Drainage systems are constructed as required according to job drawing and specifications • Base material is placed and compacted to the required finished level according to job drawings and specifications. • Soil and waste material from excavation area is separated and stockpiled according to directions.
4	**Install bedding material**	• Screed rails are established to ensure the bedding course is maintained at the designated level and falls as detailed in job drawings and specifications. • Bedding material is spread loosely over area to ensure designated bedding depth can be attained according to manufacturers specifications. • Bedding material is levelled to designated level and fall as detailed in job drawings and specifications.
5	**Install pavers to a given pattern**	• Grid string lines are set to required levels to ensure designated pattern of project is attained and to maintain straight lines of components. • Pavers are set out to required dimensions and pattern according to job drawings and specifications. • Whole pavers are laid and compacted to specified finish level according to working drawings and specifications. • Pavers are marked, cut and fitted to accurately fill gaps in pattern within tolerances nominated within the working drawings and specifications. • Permanent edge constraints are installed to prevent movement of pavers in line with job specifications. • Joints to works are finished according to the

working drawings and specifications.

- Paving is cleaned down to produce a clean and flat surface free of stains and debris.
- Paving is swept with sand and compacted to finished level.

Range Of Variables

- Modular paving may include clay or concrete paving bricks, other modular paving units.
- Machinery and equipment may include brick and concrete saws, mallets, compactors, concrete mixers.

Evidence Guide

Underpinning Knowledge and Skills:

- A basic working knowledge of:
  - occupational health and safety issues
  - site set out principles and practices
  - materials available
  - calculations for materials.

An ability to:

- Plan and prepare work.
- Set out and prepare for construction.
- Undertake ground preparation.
- Install bedding material.
- Install pavers to a given pattern.

OHS issues that impact upon the performance of this unit:

- Relevant OHS hazards identification, risk assessment and risk control measures. These include:
  - systems to ensure that workers undertake OHS induction
  - systems to ensure that workers safety skills are assessed and training provided
  - systems to ensure that workers are involved in the identification and reporting of hazards to health and safety
  - systems to ensure that risks are assessed by relevant workers
  - systems to ensure that effective short term and long term OHS risk control measures are implemented
  - systems and procedures for the safe operation and maintenance of machinery and equipment including hydraulics and guarding of exposed moving parts
  - safe manual handling systems and procedures
  - safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - selection, use and maintenance of relevant personal protective clothing and equipment.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or through simulation, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.

- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Evidence should include a demonstrated understanding of working in accordance with health, safety and security procedures, and of the potential implications of disregarding those procedures. It should also include the ability to:
  - follow established procedures
  - interpret, understand and act on instructions
  - communicate effectively in the working environment.

Linkages to Other Units:

- There is a strong link between this unit and a range of horticultural and maintenance units and combined training and assessment may be appropriate. These include:
  - RUHHRT239A Install Retaining Walls.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT239A
Install Retaining Walls

Unit Descriptor

This Unit of Competence applies to the construction of retaining walls in a landscape settings. The work is likely to be under routine supervision with intermittent checking. Competency involves the application of knowledge and skills to a range of setting out and installation tasks and roles usually within established enterprise routines.

Element		Performance Criteria
1	**Plan and prepare work**	• Materials and quantities are determined from job drawings and specifications. • Appropriate personal protective equipment is selected and fitted according to OHS requirements. • Tools and equipment are selected and checked for serviceability to ensure they are suitable for the job to be undertaken. • The quality of materials is checked to ensure they are free of defects and conform to the specification details. • The location and depth of excavations are determined from site plans and drawings.
2	**Set out retaining wall**	• The position of retaining wall is marked out according to job drawings and specifications. • Profiles are established to conform with plans and specification details and to the tolerances designated by supervisor and/or plan details. • Survey bench marks, datum's and Temporary Bench Marks are established according to plan details where required. • On-site services and utilities are located from data provided by appropriate authorities. • Waste and unused materials are removed and stacked to provide a safe working area.
3	**Prepare footings to given dimensions**	• Where required foundations for retaining wall are excavated to depth and dimensions described in job drawings and specifications.

- Soil and waste material from site are stockpiled and removed according to directions.
- Reinforcing is located and positioned where required, according to design documentation.

- Steps in trench are formed where required according to design documentation and Building Code of Australia requirements.
- The finished heights of pegs are positioned to maintain even depth and horizontal plane to top of footings.
- All debris from excavation is removed according to directions.
- Concrete is evenly placed and consolidated using approved vibration methods to AS 3600 and specifications.
- Concrete surface is finished to screeded level ensuring adequate coverage of reinforcement as detailed in job drawings.

4 Prepare for construction and install components

- Components for assembly or installation are prepared as detailed in the job drawings and specifications.
- Components to be cut are marked out to length and/or shape and cut accurately to the requirements of the design and specification documents.
- Base layer of retaining wall structure is installed to a point above top of drainage media and weep holes are formed where indicated.
- Where required drainage media is installed to given specification.
- Fill material is back-filled and compacted behind base of retaining wall.
- Installation of retaining wall components is completed to determined dimensions, profiles and levels as outlined in job drawings and specifications.
- Capping to top of retaining wall is set to determined level with a tolerance appropriate to style of capping according to design details.

5	**Clean up site and store all tools and equipment**	• Debris from structure and site is cleaned according to specification details. • Waste material is safely disposed of without adversely impacting upon the environment. • Unused material is stored and stacked for future re-use according to job instructions. • All tools and equipment are cleaned and stored according to job instructions.

Range of Variables

- Retaining walls may be timber, modular units.

Evidence Guide

Underpinning Knowledge and Skills:

- A basic working knowledge of:
  - occupational health and safety
  - set out and construction principles and practices
  - material selection
  - calculations for materials.

An ability to:

- Plan and prepare work.
- Set out retaining wall.
- Prepare footings to given dimensions.
- Prepare for construction and install components.
- Clean up site and store all tools and equipment.

OHS issues that impact upon the performance of this unit:

- Relevant OHS hazards identification, risk assessment and risk control measures. These include:
  - systems to ensure that workers undertake OHS induction
  - systems to ensure that workers safety skills are assessed and training provided
  - systems to ensure that workers are involved in the identification and reporting of hazards to health and safety
  - systems to ensure that risks are assessed by relevant workers
  - systems to ensure that effective short term and long term OHS risk control measures are implemented
  - systems and procedures for the safe operation and maintenance of machinery and equipment including hydraulics and guarding of exposed moving parts
  - safe manual handling systems and procedures
  - safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - selection, use and maintenance of relevant personal protective clothing and equipment.

Context of Assessment:

- This unit may be assessed on or off the job. Assessment should include practical demonstration either in the workplace or through a simulation, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.

- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Evidence should include a demonstrated understanding of working in accordance with health, safety and security procedures, and of the potential implications of disregarding those procedures. It should also include the ability to:
  - follow procedures
  - interpret, understand and act on instructions
  - communicate effectively in the working environment.

Linkages to Other Units:

- There is a strong link between this unit and a range of horticultural and maintenance units. These include:
  - RUHHRT238A Install Paving.

- Combined training/assessment may be appropriate.

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Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT341A

Install Concrete Structures and Features

Unit Descriptor

This Unit of Competence is concerned with the installation of concrete structures and features as a component of landscape project works. The installation of concrete structures and features is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The installation of concrete structures and features is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

Element	Performance Criteria
1 Set out landscape works	• The position of specified landscape features are marked out as outlined in plans and specifications. • Profiles are established to conform with plan and specification details and to the tolerances designated by supervisor and/or plan details. • Survey bench marks, datum's and TBM are established according to plan details. • On-site services and utilities are located from data provided by appropriate authorities • Waste and debris is removed and unused materials are stacked to provide a safe working area.
2 Prepare a site for concrete	• The subsoil is prepared by removing all debris, vegetable matter and top soil to provide a solid foundation for concrete. • Drainage provisions are installed according to plan details. • Form work is installed to site within nominated tolerances in a manner which will ensure that it remains rigid during concrete placement operations.

		• Sub-base material is installed to site and the area is compacted to the specified level and to a consistency which will ensure that the material does not consolidate during the concrete placement. • Waterproof membrane is installed to area, when required, according to manufacturers guidelines. • Reinforcement is cut, placed and tied to the area according to plan details and industry standards (AS1554.3). • Release agent is applied to form work according to manufacturers specifications.
3	**Mix concrete for a landscape project**	• Volume of concrete required for project is calculated. • Proportions for concrete mix are determined according to the strength requirements of the project. • Volume of dry materials necessary to produce final concrete mix are determined. • All dry ingredients are mixed together to ensure a thorough blending of all materials is achieved. • Sufficient water is introduced to produce a plastic concrete mix after making allowances for damp aggregates. • Equipment is cleaned on completion to ensure equipment can be immediately used when next required.
4	**Place and finish concrete**	• Any faults are checked and rectified prior to placing concrete including: form work stability, reinforcement placement, screeding point positions, debris removal. • Release agent is applied to form work to facilitate ease of removal when concrete has hardened. • The appropriate method of transporting concrete to minimise segregation of materials is identified and used. • A concrete slump test is undertaken and samples are taken for tests to check for conformity to specifications where required. • Concrete is placed to designated levels in a manner to avoid segregation of materials.

		• Concrete is consolidated using an approved vibration method to industry standard (AS3600) to ensure air pockets are eliminated. • Concrete is screeded to a flat surface to maintain the desired finished level. • Surface is prepared to ensure a non-slip finish. • An appropriate curing agent/method is provided to ensure the concrete attains the desired strength. • Equipment is cleaned on completion to ensure equipment can be immediately used when next required.
5	**Remove form work from concrete**	• Form work is removed without damaging concrete surfaces in a manner which will allow for re-use of the form work. • Nails are removed from form work without damage to components. • All debris is cleaned from form work for next usage and all components are correctly stored and stacked in a safe manner.

Range Of Variables

- This unit applies to caravan parks within the broad context of the tourism and hospitality sectors.
- Compliance with award conditions.
- Project may include:
  - small/short term job
  - part of a garden
  - part of a larger project.
- Marking out procedures include application of lime, paint, chipping, pegging, staking.
- Equipment includes tilting levels, automatic levels, line level, spirit level, water level, cowley level, staffs, boning rod, measuring tapes, claw hammer, sledge hammer.

Evidence Guide

Underpinning Knowledge and Skills:

- A basic working knowledge of:
  - setting out landscape works
  - concrete construction techniques
  - legislation regarding footings and foundations
  - concrete properties and characteristics
  - hand tools and equipment use and operation.

An ability to:

- Set out landscape works.
- Prepare a site for concrete.
- Mix concrete for a landscape project.
- Place and finish concrete.
- Remove form work from concrete.

OHS issues that impact upon the performance of this unit:

- OHS legislation, relevant regulations and codes of practice in each state, including:
  - Occupational Health and Safety Act of the state
  - Regulations and/or Codes of Practice pertaining to Plant.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or within a simulated environment, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Effective task planning skills.
- Communication skills.
- Interpersonal skills.
- Organisational skills.
- Resource allocation.

Linkages to other units.

- There is a strong link between this unit and a range of landscape development or horticulture units and combined training and assessment may be appropriate. These include:
  - RUHHRT238A Install Paving
  - RUHHRT239A Installing Retaining Walls
  - RUHHRT305A Implement a Landscape Maintenance Program.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	2
Communicating Ideas and Information	2
Planning and Organising Activities	3
Working with Others and in Teams	3
Using Mathematical Ideas and Techniques	2
Solving Problems	2
Using Technology	1

Unit THTGTM03B

Monitor Pool Water Quality

Unit Descriptor This Unit of Competence deals with the monitoring of pool water quality in tourism enterprises and caravan parks

Element		Performance Criteria
1	**Monitor pool water quality**	• Regular water testing is carried out on a routine basis, according to organisation procedures and in accordance with regulatory requirements. • Water is tested for pH level, total alkalinity and chlorine levels • Visual checks for water quality are regularly implemented and corrective actions initiated. • Levels are accurately read and compared to prescribed levels. • Pool water tests to organisation specifications for the treatment of pool water are conducted. • Special problems are identified and reported to appropriate personnel.
2	**Observe state and local government health requirements**	• Monitoring of pools and spa testing is conducted in accordance with state and local government health requirements. • Recording is undertaken and maintained in accordance with state and local government health requirements and organisation reporting procedures.
3	**Deal with water problems**	• Special water quality problems are accurately diagnosed and appropriate treatment is determined • Problems requiring specialist assistance are identified and appropriate personnel notified.

4	**Ensure safe use of chemicals**	• Top-up chemical requirements are identified accurately and carefully measured. • Chemicals are distributed to pools at correct time and in correct quantities according to organisation practices. • Chemicals are lifted and carried using correct lifting techniques and appropriate equipment. • Hazardous chemicals are identified and handled with care, according to OH&S guidelines. • Appropriate protective clothing is worn when handling chemicals.
5	**Test discharge**	• Discharge to be drained off is tested to ensure that it complies with Council regulations and environment legislation. • Pool water treatments and corrective actions are recorded to organisation specifications, and promptly reported to appropriate personnel.
6	**Monitor water volumes**	• Water volumes are tested regularly to ensure that damage to filtration systems is avoided and efficiency of pumps is maintained.
7	**Maintain pumps and filtration equipment**	• Testing of pumps and filtration equipment is conducted on a regular basis, according to organisational procedures. • Filters are changed and cleaned on a regular basis according to organisation procedures.

8	**Maintain plant equipment**	• Faults with plant and equipment are diagnosed and action implemented according to organisation procedures.
		• Faults and problems requiring routine maintenance are rectified, including:
		  • minor plumbing
		  • removing and repairing underwater lighting
		  • dredging.
		• Preventative maintenance of plant and equipment for the long term protection of assets is carried out according to the organisation procedures and suppliers/manufacturer specifications.
		• Problems requiring specialist assistance are identified and appropriate personnel are notified.
		• Systems are developed for the maintenance of plant and equipment to meet organisation quality standards.

9	**Monitor manual cleaning**	• Regular manual cleaning is conducted, according to organisation policy, including:
		  • removing leaves and debris
		  • vacuuming.

10	**Apply duty of care responsibilities**	• Behaviour and activities which may be hazardous to the individual and/or patrons are responded to according to duty of care and organisation procedures.

Range of Variables

- This unit applies to tourism enterprises and caravan parks.
- This unit applies to the monitoring and maintenance of water quality in pools and spas.
- Pools includes all types which may be found in caravan parks, theme parks or tourist attractions, hotels and resorts, including the following:
  - swimming pools
  - spas
  - water ride pools
  - decorative pools and fountains
  - animal pools.
- Testing may be by chemical testing, probes and electronic meters.
- Pool water quality refers to those levels of water treatment and chemical balance governed by local health regulations for the treatment of public swimming pool water.
- State and local government health regulations.
- Computerisation.

Evidence Guide

Underpinning Skills and Knowledge:

- To demonstrate competence, evidence of skills and knowledge in the following areas is required:
  - safety procedures
  - emergency procedures
  - technical/equipment procedures
  - chemical usage, transport and storage
  - hazardous goods labelling
  - basic pool maintenance techniques
  - health consequences of poor water quality
  - procedures and processes for pool disinfection which are chlorine and non-chlorine based (UV, ozone, bromine etc)
  - pool recirculation and filtration systems
  - daily water test results, adjustments, regular bacteriological tests
  - anticipated loadings and their effect on water quality
  - records and reporting
  - pool water chemistry:
    - pH adjustments
    - alkalinity
    - total hardness
    - stabilisation of pool water
    - chemical additives
    - disinfectants
    - microbiological aspects of pool water
    - infectious diseases transmission
    - causes of poor water quality
    - algae / impurities
    - chemical reactions
    - balanced pool water conditions
    - total dissolved solids
    - routine tests and procedures
  - hydrogen ion
  - alkalinity determination

- chlorine residuals
- determination of free available and total available residual chlorine
- differentiation of free available chlorine (mono-, di- and trichloramines)
- cyanuric acid estimation, aluminium determination
- ammoniacal nitrogen
- total hardness determination
- calcium determination
- chloride estimation
- local government and health department regulations and OH&S legislation.

OH&S issues which impact upon performance of this unit:

- Relevant OH&S hazards identification, risk assessment and risk control measures. These include:
  - systems to ensure that workers undertake OH&S induction
  - systems to ensure that workers' safety skills are assessed and training is provided
  - systems to ensure that workers are involved in the identification and reporting of hazards to health and safety
  - systems to ensure that risks are assessed by relevant workers
  - systems to ensure that effective short-term and long-term OH&S risk control measures are implemented
  - safe manual handling systems and procedures
  - safe systems and procedures for outdoor work, including protection from solar radiation, dust and noise
  - selection, use and maintenance of relevant personal protective clothing and equipment.

Context of Assessment:

- This unit may be assessed on or off the job. Assessment should include practical assessment either in the workplace or though simulation with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.

Critical Aspects of Assessment:

- Evidence should include a demonstrated understanding of swimming pool and spa management procedures. The ability to follow established organisation and relevant regulatory procedures must be demonstrated. The ability to take limited responsibility for others should also be demonstrated.

Linkages to Other Units:

- There is a link between this unit and the following units:
  - THCGHS04A Handle Hazardous Materials Safely.

- Combined training/assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	2
Communicating Ideas and Information	2
Planning and Organising Activities	2
Working with Others and in Teams	2
Using Mathematical Ideas and Techniques	1
Solving Problems	2
Using Technology	1

*Unit RE66008**

Collect Refuse or Recyclables

Unit Descriptor This unit deals with skills and knowledge required to manage solid waste.

* *under review in the Local Government Training Package*

Element		Performance Criteria
1	**Collect, dispose of waste or recyclable material**	• Waste is collected from property, litter bins and designated areas in accordance with OH&S regulations and organisation procedures. • Equipment is operated in accordance with manufacturers specifications, statutory requirements and in accordance with organisation procedures. • Problems in the collection of waste or recyclable materials are reported to the appropriate person • Disposal of waste is carried out in accordance with statutory/OH&S regulations and organisation procedures.
2	**Identify, select and sort recyclable material**	• Recyclable materials are correctly identified and sorted in accordance with OH&S regulations and organisation procedures. • Equipment is operated in accordance with manufacturer's specifications and statutory requirements.

Range of Variables

- This unit applies to caravan parks within the broad context of the tourism and hospitality sectors. The caravan park may be small or large, metropolitan or regional in location.

- Collection will vary according to:
  - bin type
  - location
  - climate
  - weather
  - waste type
  - type of equipment
  - special requests / instructions
  - traffic volume
  - organisation policy and procedures.

- Equipment may include:
  - broom
  - compactor
  - trolley
  - vehicle
  - bins.

- Application of this competency will vary according to the size of the organisation, its location and organisation structure together with the nature of the service provided.

- Application of the competency will vary according to the availability of resources, the nature of requirements for the usage of the technology with the organisation's policies and procedures in relation to technological issues.

- Application of this competency will vary according to State/Territory statutory requirements and council local laws, by-laws, ordinances and policy.

Evidence Guide

Underpinning Skills and Knowledge:

- To demonstrate competence, evidence of skills and knowledge in the following areas is required:
  - organisation policy and procedures
  - standards of hygiene and cleanliness
  - hazardous materials
  - safe working practice
  - teamwork
  - cleaning
  - hand tools
  - manual handling techniques
  - ascertaining weight and overflow bins
  - recyclable options/opportunities.

Context of Assessment:

- This unit may be assessed on or off the job. Assessment should include practical assessment either in the workplace or within a simulated environment. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated by construction of a component (in the Range of Variables), using the required materials and tools.

Critical Aspects of Assessment:

- Evidence should include and demonstrate ability to:
  - follow correct procedure
  - consider clients/guests while performing related tasks
  - site cleared of litter and made tidy
  - maximise recycling options/opportunities.

Linkages to Other Units:

- There is a strong link between this unit and a range of operational and service units which may include:
  - THCGTM02A Carry Out Grounds Maintenance.
- Combined training/assessment may be appropriate.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT305A

Implement a Landscape Maintenance Program

Unit Descriptor

This Unit of Competence describes the work undertaken by landscapers and others in the implementation of landscape maintenance programs. Maintenance is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. Landscape maintenance is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

Element of Competency	Performance Criteria
1 Maintain plant protection devices	• Protection devices are checked for their effectiveness according to protection plan requirements. • Broken, damaged, or ineffective components are reported and/or repaired according to terms and conditions of contract. • Protection devices are dismantled and removed according to protection plan requirements.

2	**Replace diseased or damaged plants**	• Diseased or damaged plants are identified and recorded according to enterprise guidelines. • Plants which are to be replaced are removed and new specimens installed in their place according to maintenance program specifications. • Diseased and damaged plants which are beyond the scope of the maintenance program are reported to the nominated person. • Aftercare is provided to established plants to ensure their health and vigour is maintained according to enterprise guidelines.
3	**Maintain landscape areas**	• Standard and scope of maintenance is established according to maintenance program. • Site is regularly inspected for remedial action and repairs according to maintenance contract conditions. • Remedial action and repairs are implemented to restore site to full effectiveness according to maintenance contract conditions. • Results of operations are assessed to ensure repairs or renovation objectives and standards have been achieved according to maintenance program details. • Surroundings are returned to a tidy and undamaged condition following operations according to enterprise guidelines. • Work performances of others are monitored and remedial action undertaken to ensure terms and conditions of the contract are maintained.

Range Of Variables

- This unit applies to caravan parks within the broad context of the tourism and hospitality sectors.
- Equipment used includes spraying equipment, safety equipment, mowers, cutting, digging and chipping equipment and machinery, hand tools.
- Maintenance programs can incorporate mowing, pruning, weeding, plant replacement, minor structural repairs, spraying, fertilising, re-mulching, pest control, cleaning, adjustment and programming irrigation systems, top soiling, rubbish removal, chipping.

Evidence Guide

Underpinning Knowledge and Skills:

- A basic working knowledge of:
  - application of specifications to individual areas of work
  - appropriate horticultural practices for heritage and cultural areas
  - principles and applications of an integrated pest management program
  - actions permitted in the event of variations to maintenance contracts
  - sources of hazards encountered in landscape maintenance and measures for their reduction.

An ability to:

- Maintain plant protection devices.
- Replace diseased/damaged plants.
- Maintain landscaped areas.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or through simulation, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Communication.
- Interpersonal skills.
- Judgement.
- Observation and analysis.
- Record keeping.
- Supervision.
- Team work.
- Acceptance of accountability and judgement.
- Applying budget information.
- Applying organisational procedures.

- Calculation including time and money
- Coaching and motivating staff.
- Delegation.
- Organisational skills.
- Promoting a safe working environment.
- Simple report and specification writing skills.
- Resource allocation.

Linkages to Other Units:

- There is a strong link between this unit and a range of horticultural and maintenance units and combined training and assessment may be appropriate. These include:
  - RUHHRT314A Set out Landscape Works.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT314A

Set Out Landscape Works

Unit Descriptor

This Unit of Competence is concerned with the setting out of landscape works from plans and specifications in advance or in conjunction with implementation of planned works. The work is likely to be under routine supervision with intermittent checking. Competency involves the application of knowledge and skills to a range of setting out and installation tasks and roles usually within established enterprise routines.

Element		Performance Criteria
1	**Mark out position of works**	• Proposed structure is located on site according to site plan dimensions. • Shape of proposed structure is marked out on ground according to plan dimensions. • Datum height is established to ensure all features can be linked by survey equipment according to established survey techniques.
2	**Establish set-out lines**	• Profiles are located with close proximity to site set out to ensure they are not damaged during construction according to site plan. • Profiles are installed to ensure they remain stable when set-out lines are tightened according to established construction techniques. • Base lines are established according to plan dimensions. • Building lines are established with corners at 90° and diagonals of equal distance according to size and shape as determined by plan.
3	**Establish survey bench marks**	• Equipment is prepared and used according to instructions and manufacturers guidelines. • Levelling equipment is set up and checked for accuracy of readings according to manufacturers guidelines. • Instruments which are out of specification are

adjusted or reported to nominated person according to enterprise guidelines.

- A temporary bench mark is selected and established on a position/structure according to established surveying techniques.
- A temporary bench mark height is established using line levelling techniques according to established surveying practice.
- Tools and equipment are cleaned, maintained and stored consistent with manufacturers specifications and enterprise guidelines.

Range of Variables

- This unit applies to caravan parks within the broad context of the tourism and hospitality sectors where there is a strong focus on landscape development.
- Marking out procedures include application of lime, paint, chipping, pegging, staking.
- Equipment includes tilting levels, automatic levels, line level, spirit level, water level, Cowley level, staffs, boning rods, measuring tapes, claw hammer, sledge hammer.

Evidence Guide

Underpinning Knowledge and Skills:

- A basic working knowledge of:
  - interpretation of landscape plans
  - mathematical and geometrical principles used in setting out
  - methods of detecting underground services.

An ability to:

- Mark out position of structures.
- Establish set-out lines.
- Establish survey bench marks.

Context of Assessment:

- This unit may be assessed on or off the job. Assessment should include practical assessment either in the workplace or within a simulated environment. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Communication.
- Interpersonal Skills.
- Judgement.
- Observation and analysis.
- Record keeping.
- Supervision.
- Team work.
- Acceptance of accountability and judgement.
- Applying budget information.
- Applying organisation procedures.
- Calculation including time and money.
- Coaching and motivating staff.
- Delegation.

- Organisational skills.
- Promoting a safe work environment.
- Simple report and specification writing skills.
- Resource allocation.

Linkages to Other Units:

- There is a strong link between this unit and a range of landscape development or horticultural units and combined training and assessment may be appropriate. These include:
  - RUHHRT314A Install Concrete Structure and Features
  - RUHHRT214A Transplant Small Trees
  - RUHHRT238A Installing Paving
  - RUHHRT239A Install Retaining Walls
  - RUHHRT305A Implement a Landscape Maintenance Program.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	1
Communicating Ideas and Information	1
Planning and Organising Activities	1
Working with Others and in Teams	1
Using Mathematical Ideas and Techniques	1
Solving Problems	1
Using Technology	1

Unit RUHHRT520A

Implement Sustainable Horticultural Practices

Unit Descriptor

This Unit of Competence is concerned with the implementation of sustainable horticultural practices in the workplace. Work is likely to be under limited supervision with checking related to overall progress. Responsibility for the work of others may be involved and team coordination may be required. Competency involves the application of knowledge with depth in some areas and a broad range of skills. Competencies are normally used within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

Element	Performance Criteria
1 Prepare and implement strategies	• Financial resources are identified and allocated for environmental management within the enterprise. • Environmental management strategies are developed using available resources and according to management policies and legislative requirements. • Strategies are assessed for their effectiveness in reducing waste disposal from the enterprise according to management policies and sound environmental management practice. • Changes to environmental management strategies are implemented to take advantage of newly available technologies and to ensure ongoing waste reduction and energy and water efficiency.
2 Minimise waste	• Materials and consumables obtained by the enterprise are from recycled or re-useable materials, where appropriate. • Materials and consumables are obtained in amounts that result in packaging and waste

		reduction. • Composting, shredding, re-using and recycling are used as and when appropriate, according to enterprise guidelines.
3	**Conserve energy resources**	• Machinery is operated and used efficiently, reducing fuel usage and emissions or discharges. • Energy used for heating, lighting and operation of remote appliances, is efficient and uses alternative sources where appropriate to the use and to management practices. • Design of buildings and structures takes into consideration the use of passive energy for lighting, heating, and shelter, where possible, and is in line with management policies.
4	**Manage water use**	• Water is sourced from locations other than mains water, where possible and where appropriate for its use according to management policies and legislative guidelines. • Run-off water is managed to optimise its use and minimise pollutants entering river and drainage systems, where appropriate and sound environmental management practice. • Retarding basins are planned for where possible and used appropriately according to management policies. • Planting strategies are developed to efficiently appropriately use available water supply, and take into consideration run-off implications. • Watering strategies are developed to minimise evaporation, run-off and inaccurate delivery of water according to management policies and sound environmental management practice. • Contamination of water runoff with chemicals is minimised through sound watering strategies.
5	**Undertake an environmental audit**	• Environmental audit takes into consideration relevant factors topography, water use, current policies and practices, waste emissions and materials, energy use, noise control, characteristics of area and legal obligations. • A report is prepared according to industry practice and client and management requirements.

Range Of Variables

- Alternate energy sources may include:
  - wind generators
  - solar generators
  - solar tubing
  - water generators
  - airflow.

- Appropriate bodies for consultation may include:
  - statutory bodies
  - council
  - consultants
  - governments.

- Characteristics of area may include:
  - climate
  - heritage
  - geology
  - ambience
  - vegetation.

- Elements for inclusion in buildings and structures may include:
  - self-composting toilets
  - windbreaks
  - location and construction of windows
  - building materials
  - orientation of building or structure
  - use of colour
  - cavity sizes.

- Waste types may include:
  - paper
  - plastics
  - metals
  - green waste
  - chemical
  - glass
  - construction waste.
  -

- Waste water management systems may include:
  - self-composting toilets
  - septic tanks
  - sewerage lagoons.

- Legal obligations may include:
  - local government
  - State/Territory
  - Federal government
  - regulations
  - by-laws
  - body corporate agreements
  - title restrictions or encumbrances.

- Emissions and discharges may include:
  - noise
  - light
  - odour
  - gas
  - smoke
  - vapour
  - liquids and solids
  - particulates
  - fumes.

- Run-off may be from:
  - watering
  - irrigation systems
  - rain
  - stormwater
  - inefficient or defective drains
  - cooling systems.

- Management plan may include:
  - provision for the evaluation of environmental assets for insurance purposes.

Evidence Guide

Underpinning Knowledge and Skills:

- A basic working knowledge of:
  - energy flows and food webs
  - nutrient cycling
  - noise control
  - principles of sustainable agriculture systems
  - principles of composting and waste management
  - environmental control standards
  - legislative requirements including Occupational Health & Safety (OHS), HAZCHEM, duty of care, dangerous goods
  - soil testing processes and procedures and results interpretation
  - pesticide and herbicide resistance.

An ability to:

- prepare and implement strategies
- minimise waste
- conserve energy resources
- manage water use
- undertake an environmental audit.

Context of Assessment:

- This unit can be assessed on or off the job. Assessment should include practical assessment either in the workplace or through simulation, with access to all necessary equipment and materials. This should be supported by a range of methods to assess underpinning knowledge.
- Competency is to be demonstrated in a horticultural workplace or situation, which reproduces horticultural workplace conditions.

Critical Aspects of Assessment:

- Knowledge of available technology.
- Relative qualities of different energy sources.
- Effects of pollutants in water systems.
- Legal obligations.

Linkages to Other Units:

- There is a strong link between this unit and other horticultural units. Combined training and assessment may be appropriate with other units of competence.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	3
Communicating Ideas and Information	3
Planning and Organising Activities	3
Working with Others and in Teams	3
Using Mathematical Ideas and Techniques	3
Solving Problems	3
Using Technology	3

Unit THTPPD06A

Plan and Develop Ecologically Sustainable Tourism Operations

Unit Descriptor	This Unit of Competence deals with the skills and knowledge required to undertake the strategic planning of ecologically sustainable tourism operations. It builds on unit THTPPD04A Plan and Implement Minimal Impact Techniques which is more operationally focused.

Element	Performance Criteria
1 Plan for ecologically sustainable tourism operations	• Relationships between tourism and the environment are considered as part of the planning process. • Strategies to balance ecological sustainability and economic viability are developed as part of the planning process. • The need for a return (economic or social) to the local community is considered. • Site evaluations are conducted prior to the decision to commence the operation. • Methods of managing tourism impacts and protecting vulnerable sites are investigated and incorporated into the planning process. • All stakeholders are consulted and their views incorporated into the planning process. • Development decisions take account of all information made available by the planning process.

2	**Develop and implement ecologically sustainable tourism operations**	• Environmental standards are established for the operation. • Codes of practice are developed for customers and colleagues. • Environmental best practice is regularly incorporated into operations. • Operations are conducted according to ecologically sustainable practices. • Operations are conducted in accordance with ecotourism codes of practice. • Environmental awareness is promoted within the tourism industry and to customers.
3	**Monitor environmental impact of operations**	• Environmental impacts are monitored, assessed and followed up with appropriate action. • Courses of action are developed and implemented to limit negative impacts and damage.

Range of Variables

- This unit applies to all tourism industry sectors.
- Methods of managing tourism impacts may include but are not limited to:
  - limits of acceptable change
  - zoning
  - exclusion
  - community consultation and involvement
  - tourism development plans
  - scheduling
  - consideration of optimal weather conditions/seasons
  - selection of most appropriate transport modes
  - education
  - size of operation/group size.

Evidence Guide

Underpinning Skills and Knowledge:

- To demonstrate competence, evidence of skills and knowledge in the following areas is required:
  - general knowledge of global environmental issues
  - local environmental and cultural issues
  - ecotourism codes of practice (as per Ecotourism Association of Australia)
  - impacts of tourism
  - minimal impact techniques
  - environmental management strategies
  - tourism trends and developments
  - relevant Federal/State/Territory/local legislation, regulations and by-laws.

Context of Assessment:

- This unit may be assessed on or off the job. Assessment should include practical demonstration either in the workplace or through a simulation. Portfolios of evidence relating to workplace experience may be appropriate. Simulated activities must closely reflect the workplace and may need to take place over a period of time to allow the candidate to address the ongoing implementation and monitoring aspects of this unit. This should be supported by a range of methods to assess underpinning knowledge.

Critical Aspects of Assessment:

- Look for:
  - ability to integrate ecologically sustainable tourism practices into the overall product development process.

Linkages to Other Units:

- There is a link between this unit and a range of other units. Depending upon the industry sector and workplace, combined training and/or assessment may be appropriate. For example:
  - THTPPD04A Plan and Implement Minimal Impact Operations.

Key Competencies in this Unit	Level
Collecting, Organising and Analysing Information	3
Communicating Ideas and Information	3
Planning and Organising Activities	3
Working with Others and in Teams	3
Using Mathematical Ideas and Techniques	3
Solving Problems	3
Using Technology	3