FPIFGM3009A Construct and maintain forest roads and tracks

Unit Descriptor
This unit specifies the outcomes required to plan, construct and maintain roads and tracks in a forest environment. The unit includes monitoring of road or track conditions and coordination of maintenance work.

Pre-requisite Unit(s)
FPICOR3001A Implement SH&E policies and procedures

Application of the Unit
FPICOR3001A Implement SH&E policies and procedures

Competency Field
Forest and Forest Products

Sector
Forest Growing and Management

ELEMENT PERFORMANCE CRITERIA

Elements describe the essential outcomes of a unit of competency. Performance Criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the Required Skills and Knowledge and/or the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

1 Plan road or track

1.1 Applicable OH&S, legislative and organisational requirements relevant to construction and maintenance of forest roads and tracks are verified and complied with

1.2 Topography details are obtained and assessed while applying environmental management considerations

1.3 Construction requirements are verified and confirmed with appropriate personnel

1.4 Track and road entry points are located to planned requirements and provide vehicle and equipment access, turning and loading space

1.5 Road line is established and obstacles removed in accordance with plans and site procedures

1.6 Extraction methods and resources are verified and obtained in accordance with site procedures

1.7 Prepare a forest road/track construction and maintenance plan in accordance with site procedures

1.8 Communication with others is established and maintained in accordance with OH&S requirements

2 Construct road or track

2.1 Soil is removed to establish base of suitable width, slope and stability in accordance with OH&S requirements and site procedures

2.2 Water crossing points and drains are established and
provided in accordance with environmental requirements and site procedures

2.3 Intersection points are prepared to provide suitable entry and exit levels and control water flow

2.4 Pipes or cords are placed and correctly backfilled and compacted in accordance with predicted water volume and site procedures

2.5 Road or track **base and surface material** is transferred, spread and compacted to meet planned road or track design

2.6 **Equipment** is stabilised, controlled and manoeuvred to compact and stabilise adjacent soil during construction

2.7 Road or track surface is cut and **prepared** suitable for support, effects of tree or log movement, manoeuvring and traction of equipment

3 Maintain road or track

3.1 Condition of road or track is monitored in relation to volume of traffic and expected future requirements in accordance with OH&S requirements

3.2 Specific damage likely to lead to safety or environmental issues is identified and repaired or reported immediately

3.3 **Maintenance** is planned and carried out with minimal disruption to other work activities

3.4 Areas of consistent damage are redesigned and remade with assistance from appropriate personnel

3.5 Road or track construction and maintenance processes **recorded and reported** to the appropriate personnel

**REQUIRED SKILLS AND KNOWLEDGE**

This describes the essential skills and knowledge and their level, required for this unit.

**Required skills include:**

- Comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for constructing and maintaining forest roads and tracks

- Use and maintain relevant tools, machinery and equipment

- Identify problems and equipment faults and demonstrate appropriate response procedures

- Use appropriate communication and interpersonal techniques with colleagues and others

- Accurately record and maintain information relating to...
road or track construction or maintenance

- Identify and extract logs and other obstacles
- Use extraction methods
- State/Territory OHS legislation, regulations, standards and codes of practice relevant to the full range of processes for constructing and maintaining forest roads or tracks
- Organisational and site standards, requirements, policies and procedures for constructing and maintaining forest roads or tracks
- Environmental protection requirements relating to the disposal of waste material
- Established communication channels and protocols
- Problem identification and resolution
- Types of tools and equipment and procedures for their safe use, operation and maintenance
- Logging and harvesting operations
- Log extraction methods
- Road transport equipment requirements and capabilities in forest operations with respect to timber being harvested
- Ground water behaviour
- Procedures for the recording, reporting and maintenance of workplace records and information
- Appropriate mathematical procedures for estimation and measurement

## KEY COMPETENCIES

The seven key competencies represent generic skills considered necessary for effective participation by an individual in the workplace

Performance Level 1 – at this level, the candidate is required to undertake tasks effectively

Performance Level 2 – at this level, the candidate is required to manage tasks

Performance Level 3 – at this level, the candidate is required to use concepts for evaluating and reshaping tasks

<table>
<thead>
<tr>
<th>Key Competency</th>
<th>Example of Application</th>
<th>Performance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>How are ideas and information communicated within this competency?</td>
<td>Ideas and information, verbal and written, are communicated in simple English to confirm work requirements, convey information and requests to colleagues.</td>
<td>1</td>
</tr>
<tr>
<td>How can information be collected, analysed and organised?</td>
<td>Collect, organise, interpret and understand information required to coordinate road or track construction</td>
<td>2</td>
</tr>
<tr>
<td>How are activities planned and organised?</td>
<td>Organise and conduct work task activities in the correct sequence for construction or maintenance work to be completed within the designated timeframes</td>
<td>2</td>
</tr>
<tr>
<td>How is team work used within this competency?</td>
<td>Effective communication and interpersonal techniques are used with colleagues and others to maximise confidence, satisfaction and productivity during the construction process</td>
<td>2</td>
</tr>
<tr>
<td>How are mathematical ideas and techniques used?</td>
<td>Mathematical ideas and techniques are used to calculate time to complete tasks and to estimate tools, equipment and material requirements including calculating distances, topography and plans</td>
<td>2</td>
</tr>
<tr>
<td>How are problem solving skills applied?</td>
<td>Establish safe and effective processes for road or track construction which anticipate likely problems or hazards to avoid wastage and downtime</td>
<td>2</td>
</tr>
<tr>
<td>How is use of technology applied?</td>
<td>Select and use computers and survey equipment to plan road or track construction</td>
<td>1</td>
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**RANGE STATEMENT**

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

**OH&S requirements**

- are to be in accordance with Commonwealth, State or Territory legislation and regulations, organisational safety policies and procedures. Requirements may include but not be limited to the use of personal protective equipment and clothing, fire fighting equipment, first aid equipment, hazard and risk control and elimination of hazardous materials and substances, manual handling including lifting and carrying, and
Legislative requirements

- are to be in accordance with applicable legislation from all levels of government that affect organisational operation. Requirements may include but not be limited to award and enterprise agreements, industrial relations, Australian Standards, confidentiality and privacy, OH&S, the environment, equal opportunity, anti-discrimination, relevant industry codes of practice, duty of care, and heritage and traditional land owners issues.

Organisational requirements

- may include but not be limited to legal, organisational and site guidelines, policies and procedures relating to own role and responsibility, quality assurance, procedural manuals, quality and continuous improvement processes and standards, OH&S, emergency and evacuation, ethical standards, recording and reporting, access and equity principles and practices, equipment use, maintenance and storage, environmental management (waste disposal, recycling and re-use guidelines).

Construction and maintenance

- will be carried out over the full range of operational weather conditions.
- may be conducted at forest harvesting site and include construction and maintenance of roads over a full range of conditions which the equipment is capable of negotiating and for which road transport of logs can be used.

Topography

- is to include a map of the designated area showing terrain levels.

Environmental management considerations

- may include but not be limited to ground growth, canopy, general forest lean, wind speed and direction, fallen trees, density of trees, ground slope, soil and water protection, ground hazards and obstacles.

Construction requirements

- may include but not be limited to data relating to road requirements and restrictions, lifting equipment, transport equipment, maximum road loads, likely weather conditions, expected timeframes, survey locations and requirements, water courses, location of log landings, road entry points, crossing or entry points for other roads and tracks, budget.

Appropriate personnel

- may include but not be limited to supervisors, suppliers, clients, colleagues and managers, contractors.

Established

- may relate to line-of-site, pegging and marking trees, clearing, removing trees and obstacles.
<table>
<thead>
<tr>
<th>Obstacles</th>
<th>may include stumps, unrecoverable trees</th>
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<tbody>
<tr>
<td>Extraction</td>
<td>is to include the methods of removing the log from the worksite with mechanical equipment and cables, considering site conditions and specific log location, in an order which minimises downtime and risk of snags, breakage and hang ups</td>
</tr>
<tr>
<td>Resources</td>
<td>may include but not be limited to equipment, personnel, budget, time,</td>
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<tr>
<td>Communication</td>
<td>may include verbal and non-verbal language, constructive feedback, active listening, questioning to clarify and confirm understanding, use of positive, confident and co-operative language, use of language and concepts appropriate to individual social and cultural differences, control of tone of voice and body language</td>
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<tr>
<td>Removed</td>
<td>may relate to removal, dumping and storing of soil</td>
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<tr>
<td>Water crossing points</td>
<td>may be established where depth of drainage becomes excessive or natural water courses occur, and may include use of a culvert or cording in line with volume of crossing water predicted</td>
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<tr>
<td>Base and surface material</td>
<td>may include crushed rock and sand over a range of sizes and materials typically used for road and track construction</td>
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<tr>
<td>Equipment</td>
<td>may be wheeled or tracked including dozer, front end loader, skidder or grader using bucket or blade attachments</td>
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<tr>
<td>Prepared</td>
<td>may include</td>
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<tr>
<td>Records and reports</td>
<td>may include but not be limited to landing and snig track design and development operations, extraction methods, hazards, incidents or equipment malfunctions</td>
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**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

**Overview of assessment**

A person who demonstrates competency in this standard must be able to provide evidence that they can safely and efficiently construct and maintain forest roads and tracks in accordance with set plans and budget.

**Critical aspects for assessment and evidence required to demonstrate**

Compliance with OH&S, environmental, and organisational/site policies and procedures, and State/Territory legislation applicable to constructing and maintaining forest roads and tracks.
| competency in this unit | • Communicate effectively and work safely with others in the work area  
• Efficiently construct and maintain forest roads or tracks in accordance with the work order and within prescribed organisational tolerances  
• Effectively establish water crossings and drains including pipes or cords and culverts as required  
• Efficiently coordinate the maintenance of forest roads or tracks including assessment of damage and reporting of hazards or areas requiring redesign |
| Context of, and specific resources for assessment | • The application of competency is to be assessed in the workplace or realistically simulated workplace  
• Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints  
• Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context  
• Assessment is to comply with relevant regulatory or Australian Standards requirements  
• The following resources should be made available:  
  - workplace location or simulated workplace  
  - materials and equipment relevant to the construction and maintenance of forest roads or tracks  
  - specifications and work instructions |
| Method of assessment | • Assessment must satisfy the endorsed assessment guidelines of the Forest and Forest Products Industry Training Package  
• Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge  
• Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies  
• Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge  
• Assessment may be applied under project related
conditions (real or simulated) and require evidence of process

- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances

- Assessment may be in conjunction with assessment of other units of competency, including those listed above