Foreword

As Western Australians, we have access to an amazing range of landscapes and remarkable flora and fauna right on our doorstep. From forests in the south-west, to the red pindan dirt in the north, the natural wonders of Western Australia surround us. Whether you are riding a mountain bike through the bush, trail running in your local park, taking on the challenge of a long-distance trail, or enjoying a leisurely stroll through the forest, Western Australia’s extensive trail network provides a gateway to the great outdoors.

We are extremely proud of the trails on offer and the ongoing work that is done to maintain and expand the network. In the past year, new mountain biking, bushwalking and horse-riding trails have been completed in many locations across the State, giving people more opportunities to access, engage with and appreciate natural areas in a sustainable way. The State Government supports trails initiatives through the planning, design and construction of numerous trails, with recent developments including the 20km Wilman Bilya walk trail in Wellington Dam National Park, helping to make this area more accessible to visitors for generations to come.

The benefits of getting active and venturing outdoors extend far beyond physical and mental health. There are also social and economic gains that can be felt right through the community. Western Australia’s trails have helped grow our reputation internationally. This wouldn’t be possible without community support and the dedicated and passionate volunteers who work in partnership with State and local governments to maintain and protect many trails, including the world-famous Munda Biddi Trail and Bibbulmun Track.

As the demand for trails increases, this document will serve as a guide to ensure a high standard of planning and construction is maintained in all trail developments. Trails are intended to complement the landscapes and environments in which they are located, assisting in the protection of high conservation and heritage value. We set our standards high, aiming to produce high quality, sustainable trails that will withstand the intended levels of use. Our motto is, build it well and make it sustainable the first time to minimise the impacts and the future maintenance required.

With thorough planning and strategies in place, we are confident that trails will continue to grow in Western Australia, enhancing the tourism economy of the State, and providing a wealth of opportunities for locals and visitors to get active outdoors.

Duncan Ord OAM
Department of Local Government, Sport and Cultural Industries

Mark Webb PSM
Department of Biodiversity, Conservation and Attractions
The Department of Local Government, Sport and Cultural Industries and the Department of Biodiversity, Conservation and Attractions have partnered to develop this Trails Development Series to provide best practice guidance to any trail proponent.

The Trails Development Series is presented in four parts:

- **Part A: A Guide to the Trail Development Process**
- **Part B: A Guide to Community Consultation**
- **Part C: A Guide to using Multi-Criteria Decision Analysis (MCDA)**
- **Part D: Checklists and Templates**

This document contains all parts and is intended to assist groups developing a trail project to follow a standardised process, consider all issues and approvals and develop an approach to gather support from the local community and relevant government agencies.

The Trails Development Series has drawn extensively on:

- Chapter 10 of the *Western Australian Mountain Bike Management Guidelines* (2018), developed by DBCA in collaboration with DLGSC, WestCycle and the Western Australian Mountain Bike Association;
- *Trail Development Protocol and Sustainability Framework for Western Australia*, developed by Dafydd Davis for DBCA and DLGSC; and
- A report developed for DLGSC by Curtin University’s Centre for Sport and Recreation Research, *Application of Multi-Criteria Decision Analysis for recreational trails decision making in Western Australia: Final technical report*, by Middle, I., Hughes, M., Middle, G. and Tye, M., Centre for Sport and Recreation Research, Curtin University, Perth, April 2017.
Trails Development Series

Part A: A Guide to the Trail Development Process
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Purpose of the document

The Trails Development Series is presented in four parts:

• Part A: A Guide to the Trail Development Process
• Part B: A Guide to Community Consultation
• Part C: A Guide to using Multi-Criteria Decision Analysis (MCDA)
• Part D: Checklists and Templates

This document is Part A in the series and outlines the eight stages of the Trail Development Process from initial proposal through to planning, construction and management.

The Trails Development Series has drawn extensively on:

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Introduction

‘Ensure you develop the right trails, in the right places, in the right way and for the right reasons.’
— Dafydd Davis MBE

With the increasing demand for trails across Western Australia, it is important a high standard of trail development is maintained to ensure all trails are developed to current best practice sustainability, minimising maintenance into the future.

Trails are like any other facility development and are subject to an approval process. The Trail Development Process (TDP) provides land owners, land managers, and trail users in Western Australia with a methodology to ensure any trails developed in the State are sustainable and an asset rather than a liability.

Working within a standardised methodology is especially important in high-value areas where trail planning, design and construction needs to be done right the first time. Building rigour into the trail development process will ensure trail proposals are transformed into high-quality, low-maintenance assets on the ground.

The TDP recommends engaging expert knowledge at various stages, as trail planning, trail design and trail construction require different knowledge and skills.

The TDP involves eight stages (Figure 1, page A8) and encompasses a constant evaluation, review and improvement process as trails are being developed, maintained, extended or renewed.
Consultation and Collaboration

The proposal to develop a recreational trail may be initiated by an individual, community group, local government or State government department or agency.

Like any other community facility, a trail needs to be well-planned and may be subject to various approval requirements. Regardless of how the idea is initiated, there are many issues to consider as the proposal takes shape:

- What is the land tenure, and who has decision-making authority about how the land is used?
- How is the area currently being used? There are often competing values, uses and interests to be considered. At times these values, uses and interests may conflict or be incompatible.
- What are the risks inherent in the proposal? The values associated with the area may be environmental, social, or economic. Failing to understand the values or failing to consider how the values interact can increase the project risks. Multiple uses and users of the same space can increase the risks.
- How should the benefits and risks of a proposed trail development be assessed? What are the values associated with that landscape and the various land uses under consideration? If there are high environmental values, the decision may be made to limit recreational use, with a highly-controlled single use, or no access allowed at all. The economic and social values may be equally important in the decision-making process.
- Who else needs to be involved in the discussion, and what is their role?
- Who will be integral to ongoing management and maintenance of the trail?

There are many reasons to support a comprehensive consultative approach during development of a trail. All people who are affected by a decision or a development should have the opportunity to understand what is being proposed, how it will affect them, and to provide those views into the planning process.

In practical terms, stakeholder and community pressure can play a major role in project outcomes. Stakeholders may hold diverse views and different values in relation to one piece of land. Discussion with stakeholders about the proposal will enable the proponent to understand complementary or conflicting views and values, and how strongly they are held. If adequate consultation is not undertaken on the proposal, the risk is that some stakeholders may take action to oppose it.

Part B: A Guide to Community Consultation in this Trails Development Series provides a comprehensive guide to support consultation when developing a trail proposal.
Values Associated with Recreational Trails

Recreational trails have the potential to provide social and economic value to individuals and communities including:

- Increased individual physical health and wellbeing
- Improved local community wellbeing, sense of place and connection with nature
- Increasing property values
- Economic development.

However, trails may be proposed on land where other existing values, such as environmental conservation, resource extraction and urban development, must also be considered. Trails may cross different land tenures, or venture into areas where differing land uses and multiple land use priorities exist, or where policy and management responsibilities overlap.

All values — social, economic and environmental — should be considered throughout the Trail Development Process. The process of understanding values requires research and discussion, achieved by involving stakeholders relevant to the location of the proposed trail. When there are multiple interests, a consultative or collaborative process is recommended to enable all relevant stakeholders to be part of the discussion.

Defining values affected by the trail

Effective land use planning typically involves making decisions between different possible land-uses for a specific location, and this is what trail developers are also faced with. There are various methods for identifying the value of different land uses but traditionally these have focused on economic, or social or environmental valuations without the ability to assess against all three aspects in the same process.

Part C: A Guide to Using Multi-Criteria Decision Analysis in this Trails Development Series provides a detailed guide to comparing impacts of a trail proposal across a range of values and is particularly helpful when there may be multiple options for a proposed trail.

The values held by individuals or groups within a community who may be affected or use a proposed trail are an important input to the trail development process.

Values can be identified at various scales. For example, values can be associated with:

- Specific physical objects such as a site or species e.g. local heritage site; or
- Broader properties of the environment such as biodiversity, or visual amenity.
This means that values for an entire landscape can differ from the specific elements within the landscape, such as a recreational trail. Table 1 provides a list of some generic values that may be considered during a Trail Development Process and their definitions.

### Table 1: List of generic values
(Source: adapted from Middle et al. 2017)

<table>
<thead>
<tr>
<th>Environment values</th>
<th>Social values</th>
<th>Economic values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiversity</td>
<td>Recreation</td>
<td>Basic raw materials</td>
</tr>
<tr>
<td>International significance</td>
<td>Education</td>
<td>Public water resources</td>
</tr>
<tr>
<td>Landscape and visual amenity</td>
<td>Aboriginal heritage</td>
<td>Tourism</td>
</tr>
<tr>
<td>Wilderness</td>
<td>Health and wellbeing</td>
<td>Pay per use</td>
</tr>
<tr>
<td>Wetland/waterway</td>
<td>Nature interaction</td>
<td>Local employment</td>
</tr>
<tr>
<td></td>
<td>Wilderness interaction</td>
<td>Mining</td>
</tr>
<tr>
<td></td>
<td>Local sense of place</td>
<td>Management cost</td>
</tr>
</tbody>
</table>

See **Part C: A Guide to Using Multi-Criteria Decision Analysis** for descriptions of each value.

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1. Middle, I., Hughes, M., Middle, G. and Tye, M. *Application of Multi-Criteria Decision Analysis for recreational trails decision making in Western Australia: Final technical report*. Centre for Sport and Recreation Research, Curtin University, Perth, April 2017.
Using the Trail Development Process

Working within a standardised methodology is especially important in high conservation areas where trail planning, design and construction needs to be done right the first time. Building rigour into the trail development process will ensure trail proposals are transformed into high-quality, low-maintenance assets on the ground.

The Trail Development Process recommends engaging expert knowledge at various stages. It is important to note that trail planning, trail design and trail building are separate activities requiring different skill sets and knowledge.

The Trail Development Process involves eight stages (Figure 1) and encompasses a constant evaluation, review and improvement process as trails are being developed, maintained, extended or renewed. Where possible, each stage should be completed before moving on to the next stage, although some overlaps may be possible.

Figure 1: Trail Development Process
Table 2: **Trail Development Process Summary**

The TDP is a scalable process, suitable for the development of a local trail for a small community, through to the development of a large national mountain bike trail centre or a long-distance trail, and the level of detail for each stage determined as appropriate.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Trail Proposal</td>
<td>A trail development proposal is either supported in principle by the land manager/owner, or not supported (due to environmental, social, cultural or other constraints). The purpose of a proposal could be to identify potential suitable areas for consideration.</td>
</tr>
<tr>
<td>2. Framework</td>
<td>A project outline developed by the steering group (stakeholders), including: project objectives, project management model, stakeholders, roles, target market, requirements, execution, and ongoing management model.</td>
</tr>
<tr>
<td>3. Site Assessment</td>
<td>Broad-scale study of the area and identification of opportunities, constraints and characteristics such as soil types, vegetation etc.</td>
</tr>
<tr>
<td>4. Concept Planning</td>
<td>Identification of opportunities and conceptual trail plan, including broad trail corridors and infrastructure requirements.</td>
</tr>
<tr>
<td>5. Corridor Evaluation</td>
<td>Detailed assessment of trail corridors for use in determining the final trail alignment.</td>
</tr>
<tr>
<td>6. Detailed Design</td>
<td>Detailed trail design and alignments physically flagged in the field. Includes detail on the trail classifications, technical trail features (TTFs), construction methods and specifications.</td>
</tr>
<tr>
<td>7. Construction</td>
<td>Trail constructed in line with the Detailed Design.</td>
</tr>
<tr>
<td>8. Management</td>
<td>Management plan implemented detailing maintenance and monitoring requirements.</td>
</tr>
</tbody>
</table>
Stage 1: Trail Proposal

Land management and land use legislation can be complex and there are numerous federal and State Acts and regulations that must be adhered to when developing trails. Coupled with these legislative requirements, other existing or proposed land use and management considerations should be assessed when proposing any activity, including trail development.

Undertaking preliminary background investigations and gauging support for a trail project early is vital. A few initial checks can go a long way to help avoid problems and wasted time and resources later in the process.

Following the TDP should ensure the following:
• The right area is chosen which supports the proposed trail
• Master plans and management plans support the proposed trail
• Compliance with relevant legislation
• Longevity and sustainability of the trails.

For example, if a trail were built in State forest without appropriate consultation with the Parks and Wildlife Service and the Forest Products Commission, all the hard work in designing and building the trail could be lost when the forest is harvested.

Not all legislation and land constraints preclude the development of trails. Where relevant, approvals for trail development will need to be sought. While the completion of detailed Site Assessments (Stage 3) is recommended as part of the TDP, the site assessment process really begins at the point of a new trail proposal, where the land owner/manager may conduct some initial desktop searches to check for major constraints that could potentially prevent trail development within a proposed area.

Constraints may include:
• A management plan for the proposed area explicitly excludes the proposed trail or activity
• A trails master plan exists and the proposed area is not supported by the plan.
• Restricted areas such as public drinking water catchments or Disease Risk Area (DRA)
• Other significant values which may exclude the proposed activity, such as future mining.

Anyone can propose new trails, be they individuals, user groups or land owners or managers. Individuals or user groups should contact the land owner/manager with regards to developing new trails in a particular area, allowing the land owner/manager to provide information on current land use and management, along with checking relevant management and master plans. They may also be able to identify alternative sites for consideration if the proposed area is not deemed suitable.

Where land owners and/or managers are proposing a new trail project, they should discuss the project with relevant user groups in the area to ensure they are involved from the start. A project developed without community involvement and support may not receive the anticipated use and resources could be wasted.
Stage 2: Framework

Developing a clear framework is essential to the successful and sustainable delivery of every trail project, setting clear direction and parameters around a project. The framework informs the planning, design and delivery process by outlining the following:

- Background
- Steering Group
- Project objectives
- Management model
- Scope and scale
- User types and trail types
- Trail system and model
- Agreed standards
- Funding and resources
- Project delivery
- Project evaluation
- Consultation and approval.

Developing a descriptive framework can be greatly assisted by the involvement of a specialist trail planner. Not having a clear framework in place can cause confusion and undermine the delivery and sustainability of a project.

Background

Provide a background and purpose as to how the project area has been identified and why it is being considered for trail development. It’s recommended you include reference to any supporting documents such as a master plan or management plan, detail the size and tenure of the project area and give a broad overview of why the trails are being developed.

Steering Group

Developing a framework can only be done through clear and formal consultation with all relevant stakeholders and partners. It’s crucial that all stakeholders and partners understand and agree to the planning, design and delivery process.

An effective way of developing a framework is to establish a Steering Group to draw together relevant key stakeholders and partners. The Steering Group may be made up of some or all of the following:

- Land owner/manager
- Local recreation groups
- Local community groups
- Local government authority
- Special interest groups
- Other key partners, including:
  - Recreation peak bodies
  - Sport and Recreation (division of DLGSC)
  - Tourism authorities
  - Funding bodies.

The framework should be documented and formally agreed to by the Steering Group and a Project Coordinator identified.

Subsequent parts of this series are designed to assist groups complete the Trails Development Process. Part B: A Guide to Community Consultation outlines various approaches to community consultation. Part C: A Guide to using Multi-Criteria Decision Analysis (MCDA) provides a step-by-step guide to developing a participatory approach to discussion and decision making. Part D: Checklists and Templates provides examples of checklists, templates and explanatory notes.

A template for the Trail Development Framework is provided in Part D and includes a list of prompting questions for each of the sections above. This template can be used to develop the framework for any type of trail activity, e.g. walking, mountain biking, or four-wheel driving.
**Project Objectives**

Establishing and agreeing on the overarching objectives of a project is essential to ensure successful, informed and sustainable trail development.

Project objectives define the overall aim and outcomes of the project. The objectives should be broad, high-level and clearly set out what the project is trying to achieve and why. It is essential that the project objectives are clear, measurable and agreed by the Steering Group.

Project objectives do not detail ‘how’ the outcomes of the project will be achieved. This is covered in the following parts of the framework by looking at the scope and scale of the trails, the intended users, trail types and trail models and systems.

**Management Model**

All trails must have an agreed management model, detailing how the trails will be developed, managed and maintained to ensure long-term sustainability. It will also detail where resources will come from to carry out the ongoing management and maintenance of the trails and any associated facilities and infrastructure. The management model should also clearly define roles and responsibilities of those involved in managing the trail.

Establishing the management model requires the Steering Group to agree on key issues including:

- Who is the trail owner?
- Who is the trail operator?
- Who will undertake maintenance?
- How will visitor use be monitored?

The **trail owner** is the entity that owns the physical structure of the trails and is usually the owner or manager of the land the trails are on. The trail owner carries the liability for the health and safety of all trail users.

The **trail operator** is the entity that maintains the trails to the agreed standards of the owner.

Owners and operators can be the same entity, but in some cases, can be different. For example, the Parks and Wildlife Service would be the **trail owner** on lands and waters they manage but may have arrangements with community trail groups for the day-to-day maintenance of the trails as the **trail operators**.

**Scope and Scale**

The scope and scale of a project defines its significance and impact. The scope and scale must be appropriate to its location and clearly link back to the project objectives. This ensures that trails of the right type, size and extent are established in the right places.

Establishing the scope and scale:

- What is the proposed level of significance — national, regional or local level?
- What are the parameters of the proposed project? Include the extent of the trails (area), proposed quantity of trails (length) and associated infrastructure required (roads, trailhead, toilets, car parks, etc)
- Is the project development to be staged?
- What type of use is proposed? Recreational and/or events?
- Will the trail/network have single or multiple entry points?
User Types and Styles

It is essential to define the target market of the trails in the framework to ensure the trail meets the needs and expectations of the intended users.

Defining the target market includes establishing and agreeing on:
- What user types are being targeted and what's their ability?
- What trail classifications are proposed?
- Will the trail be single or multi-use?
- Will the trail be single or dual direction?
- Will the trail be universally accessible?

Trail System and Model

Trail model

Detail the trail model that the project will either be or become a part of — for example, a trail town, trail centre, trail network or an individual trail.

The trail model must be appropriate to the location, scope and scale of the project and clearly link back to the project goals.
Trail System

The trail system heavily influences all parts of the planning, design and delivery process. It defines the design, layout and configuration of the trails as well as the location, nature and extent of associated facilities and infrastructure such as car parking, toilets and trailheads.

Detail the type of trail system, for example: loop, linear, stacked loop, cloverleaf. Define if any of the trails will be dual direction or multi-use.

Cloverleaf

Cloverleaf designs are a series of loop trails that radiate from a central trailhead and core trail. Linear trails can link loops together meaning the trails can be used in many combinations.

Stacked Loop

With stacked loop designs, trails networks can provide a variety of different length experiences, and may become more technically challenging as the distance from the trailhead increases, given trail users seeking difficult or remote experiences are usually willing to travel further.
Agreed Standards

The project must be underpinned by clear and appropriate standards of delivery. These standards must be applied consistently to all aspects of planning, design, construction and maintenance.

Examples of standards may include:
- Planning standards:
  - Following correct approval procedures
  - Undertaking site assessments and impact evaluation
  - Undertaking consultation throughout the development process.
- Design standards:
  - Following sustainable design principles
  - Designing trails to the agreed classification.
- Construction standards:
  - Implementing appropriate building standards
  - Constructing to the detailed design
  - Following hygiene protocols
  - Ensuring appropriate supervision.
- Maintenance standards:
  - Development of checklists and frequencies for maintenance
  - Employing sustainable construction standards
  - Following hygiene protocols
  - Maintaining the trail to its original classification.

Project Delivery

Establishing and agreeing how the project will be delivered is essential to the framework. Failing to clarify how the project will be delivered can lead to resources being wasted, confusion between stakeholders and deadlines not being met.

Confirming how the project will be delivered requires the Steering Group to agree on key issues including:
- Who will manage the project?
- How will the project be managed?
- Who will deliver the project? (staff, contractors, volunteers and for which stages of the trail development)
- How will the project be funded?
- Who will monitor the project?
- Will the project be staged?
- What are the estimated timelines?

Project Evaluation

It is essential to evaluate the project to measure the extent to which its objectives have been met. This enables an understanding of where and how the project has been successful or not. Evaluation identifies achievements and also highlights areas for improvement.

The framework should set out a methodology for evaluation, with the Steering Group agreeing on:
- Evaluation criteria. What is the evaluation process trying to determine? For example:
  - Has the project met its objectives?
  - Have the standards been adhered to?
  - Are the trails being used by the intended target market?
  - Has the predicted usage been reached?
  - Have the trails caused any unforeseen issues or impacts (maintenance, environmental, economic or social)?
  - Are the users satisfied with the trails?

Funding and Resources

It is important to outline how each stage of the process will be funded and who will drive or undertake each stage.

For example, a land manager may fund site assessments and a user group may seek an external grant for concept planning and detailed design, with trail construction undertaken by the land manager and user groups.

Management and maintenance of the trails may be a combination of land manager resources, volunteer efforts and sponsorship.
Evaluation assists with accountability, especially where funding has been sourced and acquittals are required. Understanding what worked and what did not builds knowledge, benefitting future projects.

Evaluation is an ongoing process and should be carried out through the project and the life of the trails. Results from the evaluation process should be used to make amendments and improvements to the project and future projects.

**Consultation and Approval**

The Steering Group should agree and adopt the framework before the project proceeds to the next stage, with the agreed Framework signed by all stakeholders.

Formal approval will confirm that all relevant stakeholders and partners understand and agree to the planning, design and delivery process.
Stage 3: Site Assessment

The purpose of the site assessment is to identify positive (opportunities) and negative (constraints) attributes within the project area. The site assessment builds on previous stages and is vital to ensure the land owner/manager complies with any legislative requirements and to ensure the project area offers the necessary opportunity for the proposed trail.

The site assessment informs the Steering Group of:
- Potential legislative and planning approvals required
- Opportune landscapes/topography/natural features
- Other land use, activities and management considerations
- Any exclusion zones.

Site assessments would generally be completed by the land owner/manager or project coordinator, and may require specialists e.g. botanists to complete flora assessments. It involves a broad-scale overview of the area and will require review of management plans, master plans, and other recreation plans, desktop analysis and field checks.

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive attributes</td>
<td>Other Constraints</td>
</tr>
<tr>
<td>Existing recreation sites</td>
<td>Flora/Fauna</td>
</tr>
<tr>
<td>Existing trails</td>
<td>Heritage</td>
</tr>
<tr>
<td>Base map</td>
<td>Hygiene</td>
</tr>
</tbody>
</table>

It is recommended an Impact Evaluation Checklist (IEC) be used to document the assessments and approvals process — see Appendix B in Part D: Checklists and Templates of the Trail Development Series.
By digitally mapping and overlaying the findings of the site assessments (i.e. the opportunities and constraints), it is easy to identify the following areas:

- Areas where trail development is permitted
- Areas where trail development is not permitted, e.g. rare flora, wetlands, Aboriginal heritage sites, etc
- Areas where trail development may be permitted subject to further surveys and any necessary approvals, e.g. Aboriginal heritage sites, poorly represented vegetation, threatened fauna.

Depending on results, further consultation may be required with special interest groups, other recreation users, neighbours and the wider community. It may also be found that the chosen site is unsuitable for trail development, and the trail proposal abandoned. Conducting a preliminary background check as part of the proposal stage, minimises the likelihood of having to abandon a project area during the latter stages.

The following is an overview of potential impacts that need to be addressed through the Site Assessment (Stage 3) and Corridor Evaluation (Stage 5). The list is not exhaustive, and different land tenure and management may require further additional checks.

**Location and Access**

The location of the site and its proximity to populations or communities and transport links will give an understanding of current and potential recreation use. Looking at the way the community will access the site will provide a starting point on how access may be managed and where to locate the trailhead(s) and other infrastructure.

Access points, location and size of trailheads and car parks will depend on the nature of access to the site:

- How will users access the site? Public transport or private vehicle?
- How many access points are there to the site?
- Are there any road crossings? How will these be managed?
- Consider emergency access.

### Land Use, Tenure and Management Considerations

It is important to determine the tenure of the land, land use priorities and management considerations. Some of these may have been identified during Trail Proposal (Stage 1). Understanding land use and management considerations will assist in identifying some constraints and potential opportunities. It is possible for trails and some land uses to co-exist if proper planning, consultation and design takes place. Where trails and land use can co-exist, consultation is required with relevant stakeholders to ensure they are aware of the plan and have input into how it may affect their operations or interests. Consultation is undertaken by the land manager, for example, where trails are proposed within State Forest, the Parks and Wildlife Service would consult with the Forest Products Commission.

**Land use may include:**

- Mining
- Forestry
- Utility lines
- Basic raw material
- Commercial activities (e.g. apiarist)
- Drinking water catchment
- Leases
- Recreation.
Management considerations may include:
• Neighbouring landholders and community interests
• Prescribed burning plans
• Informal reserves
• Other considerations as identified in a management plan
• Recreation and tourism.

Landscape and Soils
Understanding landforms, soil types and landscape features is key to designing sustainable trails. The trail designer needs to be able to understand these to make sustainable trail design decisions.

The following should be assessed:
• Topography
• Soil types and suitability
• Nature and character of the landscape
• Visual landscape management, quality and value of the landscape e.g. vistas, scenic areas
• Ground conditions (vegetation cover, soils, drainage)
• Hydrology (drainage, water courses, crossings, etc).

Existing Recreation Use
Understanding existing recreation use in the area can assist in managing visitor conflicts, ensure associated infrastructure is not overloaded, and enable consultation with the community. Depending on the trail system and classification and type, there may be scope to capitalise on existing facilities to share infrastructure and develop shared use trails.

The following should be considered:
• Existing recreation users and potential conflict
• Visitor safety
• Increased demand for facilities and services (e.g. rubbish removal, car parking, toilets)
• Commercial operations e.g. tour operators
• Events held in the area.

Environmental Protection
Assessing environmental protection issues and ecosystems allows sensitive areas to either be avoided or addressed through trail design and construction strategies that minimise environmental impact.

Legislation for the protection of the environment includes:
• Conservation and Land Management Act 1984
• Biodiversity Conservation Act 2016
• Environmental Protection Act 1986
• Environmental Protection and Biodiversity Conservation Act 1999 (Federal).

Note: The Environmental Protection Act 1986 requires that any person clearing native vegetation must hold a permit, unless the clearing is for an exempt purpose. These laws apply to both private and public lands throughout Western Australia.

It is recommended flora and hygiene assessments be considered early in site assessments, to determine whether field surveys are required. Often flora surveys can be restricted to certain times of the year (primarily in spring), and if the appropriate season is missed, the project may be delayed up to 12 months.

Phytophthora Dieback
In order to mitigate the potential impact of Phytophthora dieback in trail developments in the south west, it is recommended that Phytophthora disease distribution data is collected to inform the trail planning process. This is developed through Phytophthora dieback surveys which include mapping and classification of the disease status of the vegetation, identification and mapping of protectable and unprotectable areas.

This enables a clear picture of the area to inform risk mitigation strategies for the spread of Phytophthora dieback as a potential result of trail construction or use.
**Heritage Protection**

Maintaining heritage values and places is a vital part of the community’s sense of place, cultural identity and wellbeing. Trail planning needs to protect heritage values, which may mean avoiding sites, interpreting sites or planning trails with the least disturbance. In Western Australia, legislation exists to protect both Aboriginal and European heritage.

**Aboriginal Heritage**

The *Aboriginal Heritage Act 1972* protects sites and objects used by, or traditional to, the original inhabitants of Australia. Under the Act it is an offence for anyone to excavate, damage, destroy, conceal or in any way alter an Aboriginal site or object without the relevant minister’s permission.

It is the responsibility of the proponent undertaking the work, or the land owner/manager approving the work to:

- Check the Department of Planning, Lands and Heritage (www.dplh.wa.gov.au) Aboriginal Heritage Inquiry System (AHIS) for any registered sites
- Consult the DPLH Cultural Heritage Due Diligence Guidelines (www.dplh.wa.gov.au) to determine actions required.

If there is a registered site within the area, consult with DPLH to ascertain the likelihood of the proposed activity affecting the site. If impact on sites cannot be avoided:

- Consider an alternative design to avoid impact upon sites
- Consult with the relevant Aboriginal group in relation to the proposed activity (contact DPLH for advice)

**Native Title**

Native title is a form of legal interest in land that recognises the rights and interests that Aboriginal people have in land under their traditional laws and customs, within the broader Australian legal system. The *Native Title Act 1993* is a federal act which governs how native title rights and interests are recognised and may be validly affected by other land uses.

On Crown land, the land manager must comply with the relevant ‘future act’ requirements of the *Native Title Act*, which will differ in accordance with the underlying tenure of the land.

Generally:

- Native title has been extinguished on freehold land and no future act provisions apply
- Native title has been extinguished on many parcels of conservation estate that were vested under the *Land Act (WA) 1933*
- The construction of new trails will generally be consistent with the reserve purpose of conservation estate, and accordingly will not be a future act on conservation estate validly created in relation to the *Native Title Act*.

Advice should be sought on a case-by-case basis from DPLH, if there is any ambiguity on the underlying native title status and future act requirements.
European Heritage

European Heritage sites may include buildings, railways and other structures, which may be protected by the *Heritage of Western Australia Act 1990*.

The IEC template details a list of registers that should to be checked, and heritage management plans may need to be developed.

If a site is found that cannot be avoided (registered or unregistered), then consultation with the Western Australian State Heritage Office is required and they may request/require further assessment. Costs associated with the heritage assessments and any associated work an additional cost to the project.

Consultation

The site assessment provides a broad-scale overview of where the trails may be positioned, areas to be avoided, opportune landscapes and features to be utilised, and groups to be consulted with.

Depending on the site, vicinity of neighbours, any pre-determined conflicts and the value of the area to the community, it may be appropriate to meet with special interest groups, other recreation groups and/or neighbours separately to garner their concerns and communicate the strategies for sustainable development and conflict minimisation.

Locals know their area well and may have good suggestions for inclusion in the project. Seeking their input will ensure they feel included in the planning process, and assist with securing greater support for the project.
Stage 4: Concept Plan

The purpose of the concept plan is to illustrate what the trail system may look like, address key strategic priorities and identify broad trail corridors in the field. Concept plans form a crucial consultation tool which can be presented to stakeholders, interest groups and community partners.

Concept plans should consist of mainly illustrative documents, including maps. For larger or significant trail projects, it is recommended concept plans are developed by specialist trail planners based on the outcomes of the Framework (Stage 2) and Site Assessment (Stage 3) and should include the following:

1. Project outline — based on the Framework (Stage 1) and Site Assessments (Stage 2) including:
   - Description of the project area and proposed trails
   - Project Objectives
   - Scope and Scale
   - Opportunities and Constraints
   - Target market and user types
   - Proposed trail system.

2. Trail Concept
   - Map of proposed trail/trail network, based on broad trail corridors (20-150m in width)
   - Individual trail/s description/summary including such information as trail length, gradients, classification, construction methods, etc
   - Proposed infrastructure requirements such as carparks, toilets, etc
   - Broad-scale sign plan and locations for major/minor trailheads and interpretative opportunities.

3. Proposed Development Process
   - Outline of any staging, priority or construction sequencing
   - Trail design and construction estimates.

A basic concept plan outline is included in Appendix C in Part D: Checklists and Templates of the Trail Development Series.
Stage 5: Corridor Evaluation

The purpose of corridor evaluation is to identify detailed constraints and formally establish and agree on the location of trail corridors with land owners/managers and other stakeholders.

Evaluating each trail corridor may also assist in refining estimated design costs and broadly estimating construction and management costs, as well as identifying appropriate ways in which trails can be developed. If corridor evaluation is not undertaken it will be very difficult to accurately estimate costs and land owner/manager approval may not be granted.

It may be beneficial to engage a specialist trail planner to work in liaison with the project coordinator and land owner/manager during the corridor evaluation.

Refine Corridors

Concept Planning (Stage 4) is generally based on broad corridors (20m–150m wide). Through the corridor evaluation, these broad corridors are adjusted and refined based on identified constraints and mitigation strategies.

Once the constraints have been assessed and the corridor refined to as narrow as possible, it is recommended to flag the corridor centreline in the field and digitally capture the alignment. This is basic broad-scale flagging with the aim of aligning the route between each positive control point and avoiding negative control points. This clearly marks out the corridor for the trail designer to undertake the Detailed Design (Stage 6).

Estimate Probable Costs

Corridor evaluation may assist in accurately estimating costs for design, construction and ongoing management, as well ensuring environmental and heritage protection. This is extremely important when preparing funding submissions.

Ensure the design, construction techniques and materials meet the needs, and are appropriate for the environment in which the trail is to be constructed.
Stage 6: Detailed Design

Sustainable trail design requires a detailed understanding of trail sustainability principles and designs, the trail users and types, appropriate construction methods and techniques and long-term trail management. It is recommended a specialist trail designer be engaged to do this work.

Detailed design ensures high-quality and long-term sustainable trails that are fit for purpose and low-maintenance.

The trail designer should:
- Formally establish definitive trail lines, accurately flagged in the field and digitally captured
- Prepare draft design plan including construction specifications and drawings for steering group review
- Prepare final detail design plan and construction-ready specifications/drawings.

The detailed design will guide and inform trail construction and serve as a quality assurance system, and as a reference for future trail maintenance work.

The detailed design process should be applied at an appropriate scale to every project regardless of how it is to be delivered, i.e. the same for a large-scale project put out to tender or a small-scale project carried out by volunteers—it is the level of detail and content may vary greatly.

Detailed trail design should make it possible to accurately identify construction costs, resource and material requirements, and timescales. This can have a direct bearing on how trails are delivered and by whom.

Design Outputs

Detailed design should be informed by previous stages and consider:
- The trail management model and trail system
- Trail classification(s) and intended user groups
- Sustainability standards as outlined in the framework
- Trail construction standards as outlined in the framework.

Definitive trail lines and specifications enable construction work to be carried out in a way that is consistent with the framework. It enables the application of construction standards, which can be monitored and evaluated.

Delivery

In order to undertake effective trail design, the trail designer must be provided with a detailed brief before commencing, including:
- The agreed framework with overall project objectives as well as individual trail objectives, purpose and approximate lengths
- Site assessment information (including restrictions and considerations identified by the site assessments/IEC)
- Corridor evaluation information
- The agreed corridors
- Any design and construction standard
- Soil types and drainage standards e.g. trail surface must be free draining
- Protection of natural features and any restrictions such as the removal of trees, vegetation or rocks
- Maximum acceptable disturbance footprint of the trail
- Timescales for draft and final design.

A basic detailed design outline is included in Appendix D in Part D: Checklists and Templates of the Trail Development Series.

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Trail Signage

Trail signage is an essential communication tool for informing users of a trail’s characteristics via:
• Identification of trail location and access
• Site orientation, information and interpretation
• Trail classification and description
• Directional information
• Site-specific management messages
• Risks or warnings.

Signs are just as important as the trail itself and a sign plan should be developed as an integral part of the trail planning process, with signs and trail marking ready to be installed at the completion of trail construction.

Sign planning is a skill and is essential to successful trail development.

The process of sign planning

Site visit — description and analysis
Conduct a site visit with key stakeholders to obtain a clear understanding of the project area. Consider natural and built features, natural and cultural heritage values, site issues, constraints and opportunities.

Site visit — sign inventory and evaluation
Undertake an inventory and evaluation of existing signs (content and position). Record your observations with photos, drawings and notes and list a recommended action beside each item (i.e. upgrade, update, replace, move, remove or retain the sign).

Needs assessment
Identify visitor types (demographics, activities, site use, access, flow and impacts) to build a picture of your visitor profile and how they use the site. List all messages that need to be communicated at the site through the use of signs.

Develop a Sign plan
The sign plan is a document that recommends and describes a collection of signs at a location that are designed to meet the needs of users and trail managers. It comprises two parts — a sign list and location map.
• The sign list includes details of sign types and designs, content, reason for use and any additional notes. TIP: keep the plan simple and visual, including photos of existing signs and drawings of new signs
• Give each sign a unique code or reference number and plot its location on a map/s
• Work with key stakeholders to fine tune the sign plan.

Sign budget
Use the approved sign plan to develop a detailed budget.

Design and production orders
Convert the sign plan into simple lists or spreadsheets that will assist with design and production orders for the signs and supporting structures.

Maintenance and evaluation program
While conducting regular maintenance, you should incorporate a check of all signs at the site. Using the sign plan as a reference, you can record, assess and review the status (e.g. still exists or missing — particularly important for visitor risk signs), condition and effectiveness of the signs installed. Any tasks that are generated by the review can be included in the annual maintenance works program.

Sign planning tips
• Signs create visual impact. A well-designed site or trail can reduce the number of signs required. Effective trail design and sign planning are the key to achieving more with less
• Effective trail design and sign planning are the result of a collaborative effort between all key stakeholders — users, land managers/owners and peak bodies
Think message first. For each site or larger area that you are planning for, there will be key locations where visitors need particular messages to get their bearings, find their way, stay safe, be suitably prepared, know how to act in a way that protects the site or trail values or in a way that does not impact adversely on other trail users.

Put yourself in the trail users’ shoes and move through a site from a logical starting point to an end point and decide what the messages are and where they need to be.

Trail Marking

Directional trail marking should be obvious and to direct trail users and keep them on the correct trails.

Key points on trail should be clearly marked, such as:
• Start/finish of the trail
• Intersections with roads, tracks or other trails.

Remember, well-designed trails require less signage.

Trailhead signs

Trailhead signs should display the entire trail system and provide key navigation and trail user information. The trail user should be able to easily locate the trailhead.

Trailheads should include:
• Map of the trail system, clearly showing how trails link up
• A ‘You are here’ location so that orientation to the trails is clear
• Short description of the trails — use standard trail classification colours
• The trail classification system used with a short description (see Section 9)
• Any code of conducts/rules of the trail
• Trail manager logo and contact details
• Local group logo and contact details.
Stage 7: Construction

Construction is building the designed trail into the landscape utilising sustainable construction techniques and standards. Construction may be delivered by:

• Land manager construction crews
• Specialist trail building contractors
• Volunteers, or
• A combination of the above.

Delivery

The contractor, volunteer group or land manager construction crew must be provided with a detailed brief including the following:

• The final detailed design plan and associated documentation
• IEC including hygiene plans and any other restrictions
• Construction ready plans and specifications,
• Any additional standards required for the area (see below)
• Trail sign plan and standards (if it forms part of a construction contract).

If going to contract, a detailed brief enables prospective contractors to provide an accurate and comparable quotation for the work and help ensures the project will be delivered in line with the design and standards, and provide value for money.

Implementation of Standards

No matter who is undertaking the construction phase, construction practices have to meet the specification and guidelines outlined in the detailed design.

Where possible, the trail designer should provide a handover of the detailed design to the trail builder. The project coordinator must provide the trail builder with a site induction including the following:

• Site familiarisation including hygiene plans/ requirements
• Approved mobilisation/demobilisation areas
• Health and safety protocols and procedures
• Construction standards
• Protocols for where the trail builder encounters problems or issues with construction works or the design.

Standards may include:

• Visitor Risk Management standards to minimise the risk of visitors using trails while under construction
• Hygiene standards to ensure any machinery or tools are free from contaminated soil, weeds or seeds
• Natural features to be protected e.g. do not remove trees larger than 100mm
• Aboriginal heritage site stop-work instructions if new sites are found if new or suspected sites are found during construction
• Type and size of machinery to be used
• Construction materials:
  - Will construction material/s be provided? If so where?
  - If material is being brought in to the area, what standards are in place?
• Trail finish/final completion:
  - What standard should the trail be completed to in terms of rehabilitation, clean-up and finishing to ensuring the trail blends into the local environment?
  - Will this standard be the responsibility of the contractor, volunteers or the land owner/manager?
Supervision

The project coordinator must ensure appropriate supervision of the project. Supervision is always required whether the project uses land manager construction crews, specialist trail builders or volunteers.

The project coordinator should:
- Conduct regular inspections to ensure design and construction specifications are followed accurately and the project is on schedule
- Ensure the trail builders are consulting and gaining approval for any required design modifications
- Document any design modification decisions
- Approve each stage of construction prior to commencing successive stages
- Monitor and manage the timeline and budget.

The application of the detailed design and construction brief allows the project manager to ensure the construction contractor or team is adhering to the required standards.

Approval of the Work

A final check is required once construction work is complete. This should be undertaken by the project coordinator and the land owner/manager to ensure the trail and associated features and infrastructure has been constructed and finished to agreed design and standards.

Record the Asset

 Trails, like any other recreational infrastructure, are assets. It is important to record the trails and their associated infrastructure on the land manager’s asset registers where appropriate.

The following details may be included:
- Land owner/manager
- Contact details
- Park name
- Site name
- Trail length
- Location coordinates
- Total cost (include all planning, design and construction costs)
- Trail surface
- Technical trail feature and built structure location and costs (include specifications, design drawings and materials)
- Signs (trail, directional, road signs etc.)
- Associated infrastructure location and costs.
Stage 8: Management

Trails, like any other facility, require ongoing management and maintenance. The management model, in terms of who is responsible for what, should have been agreed on during the development of the Framework (Stage 2).

A concise trail management plan should be developed and approved by the Steering Group. The management plan should encompass all aspects of managing the trail and be informed by the framework and any broader land management policies. As a minimum, the plan should take into account the following:

- Background information (from the framework):
  - The trail system
  - The classification of the trails
  - Target users
  - Expected amount and type of use.
- Clarification of management roles and responsibilities (from the framework)
- Management responsibilities, funding and resources for individual stakeholders
- A record of the infrastructure and costs or link to the appropriate system or asset database
- Maintenance program:
  - Audit (for existing trails)
  - Frequency
  - Standards (e.g. construction, hygiene, signs)
  - Works program
  - Funding and resources.
- Hazard inspection and reporting procedures
- Visitor statistic recording standard and procedures
- Marketing, maps and information.

Responsibilities, Funding and Resources

Funding for ongoing trail management and maintenance is often overlooked. It is important to consider and agree on how trail management and maintenance will be funded during the Framework (Stage 2) development. Planning and building a trail and then deciding how maintenance will be funded and resourced is not recommended.

Funding can come from a range of sources including: land owner/manager, fundraising by a local user group, sponsorship of the trails, commercial operations (e.g. café, bike hire, etc) or partnerships, fees for car parking, or sometimes, but rarely, external grant programs.

The management plan should outline:

- Who is responsible for what?
  - Trail maintenance
  - Maintaining the asset database,
  - Hazard inspection and reporting
  - Undertaking visitor monitoring activities.
- How will each aspect of trail management be funded?

Maintenance Program

Trails do not maintain themselves. Well-designed trails require less maintenance, however all trails will require some ongoing maintenance. A maintenance program should be developed to provide a strategic and targeted approach to ensuring trails are maintained in the best condition possible, providing the optimum experience and minimising maintenance costs in the future. It is important to accept that unexpected maintenance tasks may be required from time to time e.g. fallen trees from storm damage.
A trail maintenance program should consider the following:

Audit (of existing trails)
It is recommended to conduct a trail audit prior to developing a maintenance program for existing trails. The trail audit should detail any trail surface issues requiring maintenance and any drainage problems, vegetation regrowth on the trail, and the type, position and condition of trail signage.

A trail audit gives trail owners and operators a complete picture of the condition of their trail and allows resources and funding to be allocated accordingly.

Where a maintenance program is being developed for a new trail, the audit information should have been captured at the completion of Construction (Stage 7), and recorded on the land owner/manager’s asset register.

Trails will change over time with use. Trail surface change is acceptable provided:
- The original planned trail classification is maintained
- Trail infrastructure and signage remain safe and serviceable
- No environmental issues have developed e.g. erosion, short cutting, etc.

Frequency
When and how often will the trail be maintained? The frequency of the maintenance required will depend on a number of factors including:
- The extent of the trail system and classification/s
- The type and level of use (e.g. recreational vs event use, small vs large event)
- The type of trail (e.g. coastal trails exposed to potential wind erosion, or downhill mountain bike trails being steeper)

- Soil type, vegetation type (e.g. rapid regeneration of vegetation blocking the trail)
- Where the trail is located. For example:
  - Trails located in northern Western Australia may require substantial maintenance after each wet season
  - Accessible trails may be more prone to vandalism, illegally dumped rubbish etc. than remotely located trails.
- Extreme weather events may necessitate unscheduled maintenance and hazard checks.

Standards
Are standards being maintained? These include:
- Original planned trail classification is maintained
- Original construction standards (from the Detailed Design — Stage 6)
- Signage standards
- Visitor Risk Management standards to be put in place e.g. inspection frequency, site closures, signs and notification.

Trail Adoption
A trail adoption agreement is a great tool that can be used to formalise a partnership between a land owner/manager and a user club/group. A trail adoption should clearing outline the roles and responsibilities of stakeholders, and helps build community ownership of the trails. Through meeting the terms of the trail adoption agreement, both parties build a trusting relationship, which allows trail groups to take responsibility and work more autonomously.

Refer to Appendix E in Part D: Checklists and Templates of the Trail Development Series for a trail adoption agreement template.
Hazard Inspection and Reporting

Trails are subject to wear and tear, illegal use and vandalism, and the weather. All of these have the potential to create hazards to trail users. It is essential for the trail management plan to include a hazard inspection process, schedule and reporting criteria to meet the relevant land owner/manager requirements, as the trail owner will carry a duty of care to trail users.

The Framework (Stage 2) should have detailed who will be responsible for managing hazards, which will generally rest with the trail owner.

Standard risk management principles should be applied:
1. Identify any hazards
2. Assess the risk
3. Manage the risk (either by accepting the risk, modifying the risk or removing the risk)
4. Review, monitor and record actions.

Visitor Statistics

It is important to understand how the trails are being used and how often. This assists trail owners and operators with the following:
- Evaluating the success of the project — for example, did the project meet its objectives?
- Are the trails being used in the intended ways by the intended users?
- Prioritising and planning maintenance works
- Guiding future trail development and improvements
- Supporting funding applications for further works.

There are a number of ways to collect information, and data collection methods will be dependent on purpose.

Trail Counters

Trail counters are a cost-effective monitoring tool. Trail counters are used to gather data on the number of times trails are used and can help identify usage patterns, for example:
- How many people are using a particular trail?
- Are trails busier at certain times of the day?
- Which days of the week are most popular?
- What time of the year is the busiest?

Note: not all trail counters include date and time data so it’s important to determine what data is required to determine which counter should be used for data collection.

For new trails, it is recommended trail counters are purchased and installed as construction is completed and the trails opened. Knowing the level of use trails are experiencing and the nature of the use assists with project evaluation, programming maintenance works and gaining funding.

Visitor Surveys

Visitor surveys can be used for a range of reasons such as building a picture of the people who are using the trails, the way in which they use the trails or determining how much users spend while at the trails.

Before developing and designing a survey, it is important to understand what the information will be used for, as this will determine the types of questions to ask. Unnecessary questions can lead to a survey that is too long and potentially cause a low response rate.
Marketing

The scope and scale of a trail will guide the level of marketing. At a minimum:
- Ensure trailhead signs and maps are up to date
- Upload trail information to the Trails WA website: www.trailswa.com.au

Trail users may just be local residents, or may have travelled to the area specifically to use the trail or use the trail as part of a broader tourism experience.

Depending on the scale of your trail project, consider the following to encourage and promote visitation to your trail:
- Develop a promotional brochure, guide or map
- Ensure trailheads are clearly signposted and marked on maps so that new visitors can easily find them,
- Ensure promotional material is distributed widely to relevant retail outlets and visitor centres in the region
- Develop a list of all outdoor magazines and local papers and advise them of the new trails
- Organise an annual event or activity that may attract the attention of major newspapers and magazines. (Remember, events may require approval by the land owner/manager before promotion.)

Where possible, promotional material should be professionally prepared and designed, printed in an attractive format and still simple to read. Generally, the following information should be considered for inclusion:
- Maps are clear and concise with distances, topographical contours, provide a scale, north orientation, a legend, and an explanation of any trail classifications
- Where relevant, include trail notes describing key points of interest
- Background information about the trail and history of the area
- Safety and etiquette information
- Interpretive information about culture, history, geography and environmental matters
- Emergency contact details and directions
- Clear indication of routes to and from the trail and parking areas
- Logos or acknowledgement of all partners.

Trail Renewal

A trail renewal is the process of making significant upgrades and/or changes to an existing trail utilising the existing trail corridor. There are a number of reasons that trails may require alterations or realignments, including:
- Change in environmental conditions e.g. erosion, or fallen trees
- An existing trail alignment may not be sustainable
- The opportunity to provide a new trail experience within an existing footprint
- Changes in the trail classification (e.g. changing a Class 3 walk trail to Class 2, or changing a blue/Moderate MTB trail into a green/Easy trail).

Trail renewal projects should follow the stages in the trail development process. However if the trail has been planned using the trail development process, previously completed stages may not have changed, allowing for quicker development e.g. the completed Site Assessments are current and no further checks or approvals are required.
Purpose of the document

The Trails Development Series is presented in four parts:

- Part A: A Guide to the Trail Development Process
- Part B: A Guide to Community Consultation
- Part C: A Guide to using Multi-Criteria Decision Analysis (MCDA)
- Part D: Checklists and Templates

This document is Part B in the series and outlines various approaches to community consultation and identifies where consultation fits within each stage of the Trail Development Process.
Community engagement is a critical component of the Trail Development Process. Early in the Trail Development Process, trail proponents should explore what type of consultative and collaborative approaches are appropriate and when to conduct engagement activities. Effective consultation, collaboration and communication can positively contribute to each stage of the process.

State and local government officers who are developing trail proposals will be involved in all aspects of planning, identifying and clarifying values of the land; identifying current users and possible future users; understanding the extent of competing, conflicting and compatible land uses; and ultimately approval or non-approval of the trail proposal. In order to do this effectively, consultation and communication approaches must be embedded at each stage of the Trail Development Process.

Community and trail user groups developing a trail proposal need to deal with many of the same issues and will need to acknowledge the range of interests to be considered in addition to their own.

Early identification of the values associated with an area being considered for a trail can help ‘find’ the stakeholders who represent those values and who may be most concerned with the impacts upon them. Getting all stakeholders involved early in the Trail Development Process will help a trail proponent create the most effective consultative approach.
Choosing a Consultative Approach

Effective consultation can help manage stakeholder expectations, bring in useful information and provide a way to address potential conflicts early in the Trail Development Process.

Before starting the consultation process, determine who will do the work and whether they have the skill set to design and deliver whatever is required. There should be a clear understanding of when and how communication and consultation will be undertaken. The Steering Group may wish to include this information in their project framework document and develop a written communications plan.

There are several activities that should be undertaken to help scope the extent and nature of consultation planning. These are:
- Determine the scope for stakeholder involvement
- Clarify consultation objectives
- Determine types of consultation activities.

A communications plan template is available in Part D: Checklists and Templates in the Trail Development Series.
Activity 1: Determine the scope for stakeholder involvement

Information gathered during the Trail Development Process (Figure 4, page B10), particularly the Framework planning documents and the Impact Evaluation Checklist (IEC) can inform a proponent as to potential stakeholders. From this:

- Summarise the information gathered about stakeholders and their values, interests and issues
- Review the scope for stakeholder input into the proposal. For example, is it possible to change the trail corridors, add additional features, or avoid specific areas? Will the Steering Group be able to act on this type of feedback from stakeholders?

This information will support detailed consultation in later stages.

In assessing the scope for stakeholder input, it is helpful to consider the best practice guidelines and core values developed by the International Association for Public Participation (IAP2) (Figure 1). The IAP2 website (https://www.iap2.org.au) provides a wide range of information about community engagement frameworks and methods as well as access to resources.


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Figure 1: IAP2 Core Values

<table>
<thead>
<tr>
<th></th>
<th>Public participation is based on the belief that those who are affected by a decision have a right to be involved in the decision-making process.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Public participation includes the promise that the public’s contribution will influence the decision.</td>
</tr>
<tr>
<td>3</td>
<td>Public participation promotes sustainable decisions by recognising and communicating the needs and interests of all participants, including decision makers.</td>
</tr>
<tr>
<td>4</td>
<td>Public participation seeks out and facilitates the involvement of those potentially affected by or interested in a decision.</td>
</tr>
<tr>
<td>5</td>
<td>Public participation seeks input from participants in designing how they participate.</td>
</tr>
<tr>
<td>6</td>
<td>Public participation provides participants with the information they need to participate in a meaningful way.</td>
</tr>
<tr>
<td>7</td>
<td>Public participation communicates to participants how their input affected the decision.</td>
</tr>
</tbody>
</table>

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1. International Association for Public Participation — IAP2 Federation, accessed at https://www.iap2.org.au (Permission to use Core Values provided by IAP2 Federation)
Activity 2: Clarify consultation objectives

Consultation activity is most effective when it is clearly scoped, with a defined purpose. The overall aim is to be able to move forward confidently with the Trail Development Process knowing that the plan is sustainable, will be supported by stakeholders, and will be used once developed.

It is important to clarify the objectives for consultation activities. Objectives can be based on goals listed in the Public Participation spectrum as developed by the IAP2 (Figure 2). It is critical to decide on what level of public participation is necessary to achieve the best outcomes for your trail proposal. In general, the more complex the project, the further to the right of the IAP2 spectrum you will need to operate within to design an effective participation approach.

‘Public’ does not simply mean the general community. It encompasses the full range of stakeholders from State and local government agencies, specific user groups, community groups, local businesses, adjoining landholders and so on.

Figure 2: IAP2 Public Participation Spectrum
(reproduced with permission)

The IAP2 Federation has developed the spectrum to help groups define the public’s role in any public participation process. The IAP2 Spectrum is quickly becoming an international standard.

<table>
<thead>
<tr>
<th>INFORM</th>
<th>CONSULT</th>
<th>INVOLVE</th>
<th>COLLABORATE</th>
<th>EMPOWER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public Participation Goal</strong></td>
<td>To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.</td>
<td>To obtain public feedback on analysis, alternatives and/or decisions.</td>
<td>To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.</td>
<td>To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.</td>
</tr>
<tr>
<td><strong>Promise to the Public</strong></td>
<td>We will keep you informed.</td>
<td>We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.</td>
<td>We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.</td>
<td>We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.</td>
</tr>
</tbody>
</table>

2 International Association for Public Participation — IAP2 Federation, accessed at https://www.iap2.org.au
Permission to use Public Participation Spectrum provided by IAP2 Federation.
Some examples of objectives are provided below. You may wish to include all of these objectives depending on the complexity and significance of your project proposal. Relevant objectives include:

• To inform stakeholders about the proposal
• To gather information from stakeholders to use in the Trail Development Process
• To ask for stakeholder comment about the proposal to ensure that all important issues are understood
• To involve stakeholders in reviewing and generating other options for the location or route for the trail or
• To work collaboratively with stakeholders on all aspects of the Trail Development Process.

Being clear on the objectives is important when inviting stakeholders to be involved. Stakeholders need to know what they’re being asked to do, what sort of information and input is being sought, and what will be done with the information obtained. This sets their expectations for the process. If there is no scope for stakeholder input to influence development of the trail, this needs to be made clear.

Only the simplest of trail projects involving a minimal number of affected stakeholders, in a non-contentious location and without competing uses or community values would focus simply on the INFORM level of participation.

Most trail proposals will operate between the CONSULT and COLLABORATE parts of the spectrum and may move between them at different stages of the project. For example, at Stage 1 of the Trail Development Process while exploring the potential for a trail proposal, the proponent may stick to the INFORM stage and set up some information sources outlining their intentions, potential sites for identification, and desired outcomes for a trail. At later stages, the Steering Group may decide that it is appropriate to operate in the INVOLVE or COLLABORATE part of the participation spectrum.

It is unlikely any trail proposal would use the EMPOWER approach as decision-making for trails normally involves multiple authorities and stakeholders. However, a local government authority or other primary decision maker may decide to adopt this approach.
Activity 3: Determine types of consultation activities

Having determined objectives for consultation, proponents can consider how to meet these consultation goals. The IAP2 website (www.iap2.org.au) provides information on different tools to meet different levels of consultation objectives. Examples of consultation tools for each stage of the IAP2 public participation spectrum are shown below in Figure 3.

Figure 3: Examples of IAP2 Consultation tools

<table>
<thead>
<tr>
<th>INFORM</th>
<th>CONSULT</th>
<th>INVOLVE</th>
<th>COLLABORATE</th>
<th>EMPOWER</th>
</tr>
</thead>
</table>
| • Fact sheets  
• Websites  
• Open houses/days | • Public comment  
• Focus groups  
• Surveys  
• Public meetings  
• Workshops  
• Deliberate polling | • Workshops  
• Deliberate polling  
• Participatory decision-making | • Consensus building  
• Public meetings  
• Workshops  
• Deliberate polling | • Ballots  
• Delegated decisions |

At a minimum, a good flow of information to relevant stakeholders is fundamental and should be done as a standard activity throughout the Trail Development Process. More complex consultation and collaborative processes are required where information and support is needed from different stakeholders or complex, competing interests may need to be managed.

Typical INFORM level activities for trail development projects include:
• Production of a fact sheet
• Information on a web page, which community members can easily access.

More intensive CONSULT level activities to gather feedback from the general community or specific stakeholders can include:
• A public meeting or information session held to provide information about the proposal and options being considered. Attendees would be asked to provide comment at the meeting or via an online survey or response form
• A discussion paper could be developed outlining the proposal and options. People would be invited to submit comment via an online survey or response form
• An online forum created to gather input from people about how they currently use the site — for what activities, and how often

• Individual stakeholder interviews conducted to gather information.

For more detailed discussion, particularly at Stages 4-7 of the Trail Development Process, proponents might choose an activity that allows for discussion, interaction and collaboration to determine preferred options. Typical consultation activities at the INVOLVE level for trail development projects include:
• A planning workshop where participants are asked to help identify options for consideration
• An online discussion forum inviting responses to a series of questions relevant to the Trail Development Process
• A facilitated workshop where a structured process is followed to identify a preferred option.

Complex trail proposals requiring a number of stakeholders to work together or where the trail is particularly contentious should focus on the COLLABORATE level and use more complex, participatory techniques such as Multi-Criteria Decision Analysis (MCDA).

Where Consultation Fits in the Trail Development Process

Consultation has a role to play at all stages of the Trail Development Process, but it can have the most impact if undertaken early in the process, during Stages 1 to 4. Well-planned consultation during these stages will enable the views of relevant stakeholders to be identified and considered before Stage 4: Concept Planning of the Trail Development Process is finalised. If there are likely to be competing or conflicting values and views about the proposal, the consultative effort to understand different views, and work together to resolve issues early in the process will improve the outcome.

Importantly, consultation and collaborative approaches to trail planning can gather critical information and bring it into the process when it has the best chance of being considered and incorporated (Table 1). Adopting a collaborative approach also signals an intent that the proponent is seeking to build the right trail, in the right places, the right way and for the right reasons.

Figure 4: Trail Development Process
Table 1: Consultation issues to address during the Trail Development Process

<table>
<thead>
<tr>
<th>Stage</th>
<th>Key consultation issues to be addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Trail Proposal</td>
<td>What values are going to be impacted by the proposed trail? What stakeholders are linked to those values or will be affected by any proposed changes to the proposed trail site?</td>
</tr>
<tr>
<td>2 Framework</td>
<td>What level of consultation and collaboration will we need to effectively work with stakeholders and gather support for the proposal? Needs to be embedded into project framework.</td>
</tr>
<tr>
<td>3 Site Assessment</td>
<td>What information can stakeholders tell us about the areas including constraints, opportunities, other issues and approvals possibly needed?</td>
</tr>
<tr>
<td>4 Concept Planning</td>
<td>Who should be involved in developing a concept plan? Are there multiple trail options possible? Do we need to involve stakeholders in deciding a preference for the concept plan? What information should be provided in the concept plan to get stakeholder input and agreement?</td>
</tr>
<tr>
<td>5 Corridor Evaluation</td>
<td>What needs to be captured in the final design? What strategies could stakeholders suggest to address impacts.</td>
</tr>
<tr>
<td>6 Detailed Design</td>
<td>Have the Steering Group or regulatory agencies required significant changes to the draft concept plan that need to go back to stakeholders for confirmation and advice? Ongoing communication with stakeholders on detailed trail design and alignments physically flagged in the field. Consider needs of local users and community in regards upcoming impacts of construction. Consider interpretive materials and signage needs. Work with critical stakeholders on appropriate interpretive material.</td>
</tr>
<tr>
<td>7 Construction</td>
<td>Continue communications as construction progresses. Ensure any construction impacts such as road or trail closures, dust/noise issues are adequately communicated to impacted users or adjacent properties and work with them to limit impacts. Regular updates on progress to community and stakeholders.</td>
</tr>
<tr>
<td>8 Management</td>
<td>Management body for trail should continue to communicate with user groups and other stakeholders on events, trail maintenance and deal with unexpected impacts or community tensions as they arise.</td>
</tr>
</tbody>
</table>

In the following pages, general approaches to consultation and collaboration are described, and consultative actions are recommended for each stage of the Trail Development Process. By Stages 3 and 4 of the Trail Development Process, it should become clear whether a process such as Multi-criteria Decision Analysis (MCDA) is needed to assist discussion and facilitate resolution of any identified conflicts or concerns.

The benefits of using MCDA and a comprehensive guide to undertaking this process is provided in Part C: A Guide to Using Multi-Criteria Decision Analysis, in the Trail Development Series.
Stage 1: Trail Proposal

Undertaking preliminary background investigations and gauging support for a trail project early is vital. A few initial checks can go a long way to help avoid problems and wasted resources later in the process.

In the early stages of a new trail project, it is a good idea to do a quick check to determine whether there are any immediate and obvious constraints that could prevent development of a trail in the target area. This requires some desktop or Internet research to check for major constraints such as:

- A management plan for the proposed area that explicitly precludes the proposed trail
- A master plan exists and the proposed area is not supported by the master plan
- Restricted areas such as public drinking water catchments or disease risk areas
- Other significant values which may preclude the proposed activity, such as mining or forestry.

This desktop research can also help identify relevant stakeholders for the proposal.

Table 2 (see page B13) provides a list of government organisations that may be potential stakeholders or regulators depending on the location of the proposed trail and its impact on any protected values such as conservation or heritage.

Table 3 (see page B14) is a list of potential non-government stakeholders who may also be affected — positively or negatively — by the proposal or have relevant opinions.

Consultation Actions

Initial research should include a desktop review of the proposed land area and discussion with:

- The land owner/manager to see whether the proposed use would be supported
- Any major user groups for the proposed site.

A project developed without community involvement and support may not meet community needs and therefore not be used as hoped. This would result in a waste of resources.

Identification of the relevant stakeholders for this proposal at this stage is essential, as they will need to be brought into the Trail Development Process at the next stage. Think about their role in relation to the proposal (e.g. as a land owner, regulator, interest group), what values they might hold in relation to the proposal, and how the proposal could impact their interests.
Table 2: **Potential Government Stakeholders**  
*(Adapted from Middle et al. 20173)*

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parks and Wildlife Service (Department of Biodiversity, Conservation and Attractions)</td>
<td>Managers of lands and waters vested in the Crown and managed for conservation and recreation — including national parks, marine parks, nature reserves, State forest and other lands with conservation values.</td>
</tr>
<tr>
<td>Department of Water and Environmental Regulation</td>
<td>Regulators of Public Drinking Water Source Areas (PDSWA) or other area with restricted or limited access. Responsible for native vegetation clearing approvals.</td>
</tr>
<tr>
<td>Water Corporation</td>
<td>Responsible for management of some PDSWA and other water assets (pipelines, well heads etc.) that may need to be considered.</td>
</tr>
<tr>
<td>Department of Mines, Industry Regulation and Safety</td>
<td>Land may be subject to State agreements, exploration permits, mining leases or an operating mine.</td>
</tr>
<tr>
<td>Department of Planning, Lands and Heritage</td>
<td>Responsible for registration of protected Aboriginal cultural heritage sites and issuing of approvals relating to possible impacts on these. Management of unallocated Crown land.</td>
</tr>
<tr>
<td>Western Australian Planning Commission (Department of Planning, Lands and Heritage)</td>
<td>Managers of some Crown land, especially in the metropolitan area, vested in the WAPC and managed by DPLH. Also responsible for various land planning approvals.</td>
</tr>
<tr>
<td>Heritage Council (Department of Planning, Lands and Heritage)</td>
<td>Unlikely stakeholder, but will be interested if a State heritage listed property is on the subject land.</td>
</tr>
<tr>
<td>Forestry Products Commission</td>
<td>Managers of harvesting operations on State Forests for production or subject to state agreements.</td>
</tr>
<tr>
<td>Department of Fire and Emergency Services</td>
<td>State emergency management responsibilities — e.g. fire, flooding.</td>
</tr>
<tr>
<td>Department of Local Government, Sport and Cultural Industries</td>
<td>Advocate for trails and active recreation. Collaborative partnership with Lotterywest to provide initial assessment of trails grant.</td>
</tr>
<tr>
<td>Local government</td>
<td>Land may be vested with local government (who may also be the proponent) and the proposal may require local planning approval. Local governments are likely to have a working knowledge and relationship with the relevant local conservation or Friends of groups and local Aboriginal groups.</td>
</tr>
<tr>
<td>Department of Primary Industries and Regional Development</td>
<td>May have an interest if subject land is outside the Perth metropolitan region.</td>
</tr>
<tr>
<td>Regional Development Commissions</td>
<td>Interested in economic development in their region, including tourism.</td>
</tr>
<tr>
<td>Department of Jobs, Tourism, Science and Innovation/Tourism WA</td>
<td>General interest in tourism.</td>
</tr>
</tbody>
</table>

---

3. Adapted from Middle, I., Hughes, M, Middle, G. and Tye, M. *Application of Multi-Criteria Decision Analysis for recreational trails decision making in Western Australia: Final technical report*. Centre for Sport and Recreation Research, Curtin University, Perth, April 2017, p. 26
Table 3: Potential Community Stakeholders

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Friends of’ groups or local conservation groups</td>
<td>Where all or part of the subject land or existing trail has a local volunteer group who are active in its protection and management.</td>
</tr>
<tr>
<td>Traditional owners or other local indigenous organisations</td>
<td>The subject land may be the subject of an existing or outstanding native title claim. Even where no native title exists, local traditional owners may still have an interest in the proposal.</td>
</tr>
<tr>
<td>Local recreation or community groups</td>
<td>Existing users of land either directly affected by proposed trail or using shared local facilities that may be affected.</td>
</tr>
<tr>
<td>Adjoining land owners</td>
<td>May be affected by trail construction impacts. Trail use may also impact their land or enjoyment of their land or provide a potential business opportunity.</td>
</tr>
<tr>
<td>Relevant local businesses</td>
<td>Tourism or recreational businesses that may service possible trail users or who might face competition from new incoming businesses or who might access the proposed trail site for alternative purposes that would be affected by the trail.</td>
</tr>
<tr>
<td>Local heritage groups</td>
<td>Who may have an attachment to or information about the proposed site and its local historical significance</td>
</tr>
</tbody>
</table>
Stage 2: Framework

Developing a clear framework is essential to the successful and sustainable delivery of every trail project. The framework informs the planning, design and delivery process and clarifies the key issues.

Not having a clear framework in place can cause confusion and undermine the delivery and sustainability of a project.

The first recommendation is to establish a Steering Group to plan the project. The Steering Group’s role is to develop the project framework, establish project objectives, appoint a project manager, and formally agree to the process to be followed.

Importantly, the Steering Group needs to gauge what the level of interest is likely to be in the trail proposal. A key conclusion at this stage is whether a wider consultative approach is likely to be needed. The scope and scale of the project will also determine the level of general public consultation needed as well as direct and targeted consultation with direct stakeholders such as regulators, affected land owners, State and local government, and local business and tourism operators.

Consultation Actions

If the Steering Group answers YES to any of the following questions, this indicates that a consultative process will be needed for this proposal:

- Does more than one party need to agree to the trail?
- Are there multiple current or potential users of the land that suggest several stakeholders need to be involved?
- Are there complementary, conflicting or competing interests that need to be considered?

This information will need to be recorded and an agreed consultative approach included in the project framework. The framework template is included in Part D: Checklists and Templates in the Trails Development Series.
Stage 3: Site Assessment

This stage builds on land use identified in Stage 1 and included in the Framework (Stage 2).

Specifically, the site assessment reveals the complexity of the project and answers these questions:
- What legislative approvals will be required?
- Are there any exclusion zones?
- What else happens in the target area — other land uses, activities or management considerations?
- What aspects of the landscape and topography offer great opportunities for a trail at the level being proposed?

The outcomes of the site assessment will show three types of areas:
1. Areas where trail development is permitted
2. Areas that preclude trail development
3. Areas where trail development is dependent on further studies and approvals, e.g. Aboriginal heritage sites, areas of threatened fauna.

Consultation Actions

If the site assessment identifies special interest groups, other recreation users, neighbours, and the wider community whose interaction with the site may be impacted by the proposed trail, a consultative process will be needed for this proposal.

Local residents and regular users know their area well and may have good suggestions for inclusions. Seeking their input may provide information that is critical to the concept plan and determining trail alignment options.

A decision should be made, dependent on the complexities of the site, as to whether to commence community consultation now or wait until the concept plan stage.
Stage 4: Concept Planning

The purpose of the concept plan is to illustrate what the trail system may look like, address key strategic priorities, and physically flag and digitally record broad corridors in the field. Concept plans form a crucial consultation tool that can be presented to partners and stakeholders.

Concept plans are built around maps of the area, including topographic maps, which show the indicative trail corridors.

The mapping that is undertaken as part of the concept planning shows visually where the trail/s could go, what features it passes, and what elements it contains to meet the needs of the key user groups.

In the draft concept plan, the configuration and layout of the trails have not been finalised and can be amended. The map becomes a consultation tool.

If there are potential conflicts of opinion or complex management issues, Multi-Criteria Decision Analysis might be considered as a useful tool.

Consultation Actions

The draft concept plan and maps are the main tools in meetings with stakeholders. Having a physical map helps to present the options under consideration, and enables stakeholders to ask questions, seek clarification, and express their views on the proposal, and identify the most important values. This discussion provides information that will help refine the proposal. Depending on what’s most relevant to the proposal, the purpose of the discussion could be to develop the trail options, or to seek feedback on options that have already been identified.


The consultation may help to refine the options or may help the Steering Group decide which option is preferred. This enables the Steering Group to approach Stage 5 of the Trail Development Process with a good indication of how stakeholders view the proposal.
Stage 5: Corridor Evaluation

The purpose of corridor evaluation is to identify detailed constraints and formally establish and agree on the location of trail corridors with land owners/managers and other stakeholders. The corridor evaluation should be developed into a report that can be used to seek approvals to proceed with Stage 6: Detailed Design.

Stakeholder or community consultation undertaken earlier in the process has led to the identification of a favoured alternative for development of the trail. If the consultation has been thorough, all the key issues will have been identified, and any mitigation measures discussed, allowing the Steering Group to proceed with confidence.

Consultation Actions

With a firm corridor in mind, access and approval needs to be secured from the landowner/manager. This relationship is important and can be strengthened through frequent communication.

Ongoing regular communication with all proposal stakeholders should continue. If the trail needs to shift within the proposed corridor to accommodate environmental concerns or to enhance the trail, these adjustments should be included in the communication to keep interested stakeholders informed.
Stage 6: Detailed Design

Detailed trail design makes it possible to accurately identify construction costs, resource and material requirements, and timeframes for development.

Consultation Actions

If anything changes, or it turns out to be more expensive than the budget allows, there may be a need to scale back the project, and some key stakeholders may need to be consulted to refine the design.

Again, it is important to keep stakeholders advised of changes and updates. Depending on the size of the project, a regular update email to stakeholders, or update on the project website will satisfy this requirement.

Significant effort may be needed to source additional funding for the trail. Stakeholders may be approached for cash or in-kind support, or for letters of support that can be used in funding and/or grant applications. If a strong relationship has been developed through the process, it makes it easier to have funding and support discussions if needed at this point.

During detailed design it will become clear whether the trail needs signage or interpretive material. If so, a consultative process may be needed to determine where signage should go, what it should say, what maps should be included, and what information could be provided to enhance the visit for trail users. It might be useful to create an advisory group to assist with this specific task.
Stage 7: Construction

The construction phase is where the trail is built, using sustainable construction techniques and standards as far as possible.

Consultation Actions

Adjoining landowners and others in the area may be impacted during the construction phase. For example, normal access to the area may not be possible during construction, or stockpiles of materials and equipment may interfere with normal movement in the area. This is short-term, and usually well planned to minimise intrusion and disruption. However it is best to continue regular contact with stakeholders to keep them advised of the schedule, provide a point of contact if people have questions, and be accessible if there are issues to be resolved.

Stakeholders may be interested to follow construction progress, and regular photos or visual records should be posted regularly to satisfy this level of interest.

Stage 8: Management

Trails require ongoing management and maintenance, as outlined at Stage 2: Framework.

Consultation Actions

Continue working with local stakeholders, adjacent and affected businesses and community groups to keep them informed on developments and issues as they arise to ensure ongoing management is done appropriately.
Trails Development Series

Part C: A Guide to Using Multi-Criteria Decision Analysis (MCDA)
Purpose of the document

The Trails Development Series is presented in four parts:

- **Part A: A Guide to the Trail Development Process**
- **Part B: A Guide to Community Consultation**
- **Part C: A Guide to using Multi-Criteria Decision Analysis (MCDA)**
- **Part D: Checklists and Templates**

This document is Part C in the series and provides a step-by-step guide to developing a participatory approach to discussion and decision making at various stages of the Trail Development Process.

The Trails Development Series has drawn extensively on:

- Chapter 10 of the *Western Australian Mountain Bike Management Guidelines* (2018), developed by DBCA in collaboration with DLGSC, WestCycle and the Western Australian Mountain Bike Association;
- *Trail Development Protocol and Sustainability Framework for Western Australia*, developed by Dafydd Davis for DBCA and DLGSC; and
- A report developed for DLGSC by Curtin University’s Centre for Sport and Recreation Research, *Application of Multi-Criteria Decision Analysis for recreational trails decision making in Western Australia: Final technical report*, by Middle, I., Hughes, M., Middle, G. and Tye, M., Centre for Sport and Recreation Research, Curtin University, Perth, April 2017.
Introduction

Trail development projects can face various difficulties including:
• Identifying and recognising the range of views and values that different stakeholders hold
• Comparing possible impacts on values from different trail proposals
• Considering the relative importance of impacts on different values.

In such situations, a structured approach to support discussion and decision-making can be invaluable. Multi-Criteria Decision Analysis, or MCDA (also called multi-criteria analysis, multi-criteria decision-making and multi-criteria assessment) has a long history of use in support of environmental management and decision-making.1

MCDA is a participatory process involving key stakeholders working together in a collaborative atmosphere to consider multiple values of landscapes and land uses. The MCDA framework can incorporate diverse views about a trail proposal and provides a process for participants to determine the relative importance of different values in assessing the proposal. This understanding and discussion among stakeholders can help build agreement as well as identify options to mitigate impacts on critical values. As a result, the Trail Development Process has a greater chance of developing a proposal that will be supported among stakeholders and progressed.

Because the process does not require significant resources or large amounts of data it can be cost-effective, time and resource efficient and can generate a robust outcome based on informed expert and stakeholder opinion.

The benefits of using MCDA during the Trail Development Process

MCDA offers numerous benefits in situations where there are multiple stakeholders with different strongly held views. These benefits include:
• Providing a structured process
• Allowing for diverse subjective positions and values to be expressed, acknowledged, and prioritised as part of the process
• Being able to assign different weightings to different values to reflect stakeholder views
• Capturing all views and deliberations in the final recommendations to support decision-making.

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1. Information provided about the MCDA process is based on a report developed by the Curtin University Centre for Sport and Recreation Research (CSSR):

Middle, I., Hughes, M., Middle, G. and Tye, M. Application of Multi-Criteria Decision Analysis for recreational trails decision making in Western Australia: Final technical report. Centre for Sport and Recreation Research, Curtin University, Perth, April 2017.
How to use MCDA in the Trail Development Process

An MCDA process and workshop can support decision-making at Stage 4: Concept Planning of the Trail Development Process. The MCDA discussion can help identify a preferred alternative out of various trail proposals. This information can then be referred back to the Steering Group for completion of the planning process.

Information gathered during the MCDA process can also help the Steering Group understand impacts to be considered and specific values to be protected during the later design stages.

Figure 1: Where MCDA can support the Trail Development Process
The MCDA process can also usefully assist in generating additional alternatives where the impact on a particular value may be considered too significant, but an amended path alignment might make it acceptable. An MCDA could prompt participants to consider whether hybrid proposals might be acceptable, or if one proposal has an unacceptable level of impact on identified values that cannot be compensated by possible benefits for other values.

It is also possible to conduct the MCDA on a single proposal to determine the level of impacts on identified values. This can assist groups to determine:

- Unacceptable impacts on the most important values and therefore whether the proposal should progress further in current form
- What impacts will require mitigation and further investigation in later stages
- Where more ‘value adding’ is needed to create positive impacts.

Steps 6 and 7 allow for a more refined comparison of the FINAL total scoring of each proposal and may be of use where the scoring is very similar. However, for many groups, where the objective is to look at relative rankings between proposals or highest/lowest ranking of impacts on values, these steps are not essential.

Whilst numeric rankings are an important part of the process, it is important to remember that MCDA is not intended to arrive at a quantitative outcome where the proposal with the highest score is the best solution. All scores are simply indicative and provide a relative comparison of impact, the importance of different values and can assist in the comparison of proposals.

It is important to remember that the proposal scoring highest overall may not necessarily end up being the preferred option because a focus on the total score can miss the nuances of different values and impacts. For this reason, the discussion component at Step 8 is essential as it helps the facilitator identify significant areas of agreement and disagreement. An overview of the group discussion should be provided to the Steering Group of the Trail Development Process to assist in decision-making.

This guide provides detailed instructions and a worked theoretical example to assist anyone wishing to hold an MCDA workshop as part of their Trail Development Process.

Scoring examples, based on a hypothetical trail proposal (presented on page C11), are provided in table form along with worked examples of calculations.
How to run an MCDA workshop

The best way to run the MCDA process is to arrange a half-day, three-hour workshop, and have it professionally facilitated. The independent facilitator will lead the participants through the eight steps of the process. The outcome is the identification of the group’s recommended or preferred trail corridor, together with the supporting data to explain how the group made that determination. The recommendation can then inform the next stage of the Trail Development Process: Stage 6 — Detailed Design.

How to plan the workshop

Here are some of the important aspects in planning the workshop.

The invitation list

Identification of who should attend is crucial. All stakeholders with a connection to the proposed trail should be invited to attend. Stakeholders typically include:

- Key government agencies that have an interest in the proposed trail or the land in question
- Relevant local governments
- Community organisations
- Neighbours and other local residents or businesses
- Current and potential user groups of the land included in the proposal.

Review the stakeholders listed at Stage 1 of the Trail Development Process (and any stakeholders who may have emerged in subsequent stages) to identify who to invite. If there are specific individuals who need to be there, send the invitation directly to them. If an organisation needs to be represented, ask the organisation to nominate a suitable person to attend and request that the attendee be fully informed and able to present the organisation’s views and information during the discussions.

Once the stakeholders have been identified, send out invitations to attend the workshop at least three weeks before the event. Specify an RSVP deadline at least 48 hours before the workshop.

Choosing the venue

Choose a venue that:
- Is close to the location of the proposal
- Has an electronic whiteboard (ideally) or a standard whiteboard
- Can comfortably accommodate the number of people attending
- Has facilities to serve light refreshments
- Has flexibility in room layout. The room should be set up with a number of tables, so participants can work in small groups.

Providing pre-reading for participants

About one week before the workshop, distribute an information pack and ask people to read it thoroughly before attending. The pack should contain:
- Background information about the trail proposal and the options being discussed at the workshop
- Information about the MCDA process
- The format for the workshop
- Any practical information about the venue such as directions and parking.
The format for the workshop

There are eight steps in the complete MCDA process (Table 1) with steps 6 and 7 being optional. Some of these steps will be done as a whole group discussion, and some will be small group discussions at each table. A morning or afternoon tea break can be scheduled during Steps 5–7 while the facilitators and/or workshop organiser ‘crunch the numbers’.

Table 1: Steps in MCDA Process

<table>
<thead>
<tr>
<th>MCDA process</th>
<th>Description</th>
<th>How done</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Determination of relevant values</td>
<td>Whole group discussion</td>
</tr>
<tr>
<td>Step 2</td>
<td>Relative weighting of three pillars (social, environmental, and economic)</td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>Weighting individual values</td>
<td>Small group discussion</td>
</tr>
<tr>
<td>Step 4</td>
<td>Scoring the values</td>
<td></td>
</tr>
<tr>
<td>Step 5</td>
<td>Calculating the weighted scores for each pillar</td>
<td>Facilitator</td>
</tr>
<tr>
<td>Step 6 (OPTIONAL)</td>
<td>Calculating the normalised scores for each pillar</td>
<td>Facilitator or workshop organiser</td>
</tr>
<tr>
<td>Step 7 (OPTIONAL)</td>
<td>Calculation of relative scores for each proposal</td>
<td></td>
</tr>
<tr>
<td>Step 8</td>
<td>Final discussion and recommendations</td>
<td>Whole group discussion</td>
</tr>
</tbody>
</table>

Planning the groups

The number of attendees will determine how many small table discussion groups will be created. Aim to keep the size of each group under eight people. It’s a good idea to allocate people to each table based on the following general rules:

- Have level of representation from State government, local government and non-government consistent across each group.
- If an agency is represented by more than one person, allocate each to a different group.
- Each group should be made up of individuals with a range of views (i.e. pro-conservation through to pro-development).
- Try to balance gender and age in each group.

As people arrive on the day, they should be directed to the table they’ve been allocated. A trained facilitator should be placed on each table to guide the discussion and record the decisions. The number of table groups will determine the number of facilitators needed.

Resources needed

The main facilitator will need a whiteboard (or similar) to record the whole group discussions.

The facilitator on each table will need a method for recording the deliberations — either a laptop or paper to capture the information.

What happens after the workshop

The workshop concludes with an explanation of the next steps, agreement about feedback to be provided to workshop participants, and an evaluation of the workshop by the participants.

The facilitator should develop a summary of the discussions during the day and the scoring results to be provided to the Steering Group overseeing the trail planning. It may also be provided to workshop participants.
On the day — Introducing the workshop

The workshop should commence with the usual introductions and a description of the process for the session, including the agenda and time allocation for the session. The rules of engagement for the session should be discussed — there are some keys ones — and each facilitator will have their own set as well. The key ones are as follows:

• The workshop will only function and arrive at an outcome if there is cooperation and agreement between participants, and each person will need to acknowledge differences and be prepared to ‘shift ground’
• Importantly, the outcomes of the workshop are to inform and support decision-making, not to make a definitive decision on trail options.

Decision-making agencies will have specific processes for any necessary approvals with different options available for public involvement or comment. Stakeholders will be able to participate in these as normal as well as contributing to the MCDA workshop.

A note of encouragement

Please note that initiating the MCDA process may appear daunting — particularly the calculations to generate scores for relevant values. Please persevere.
In a desire to boost local tourism, it has been proposed to establish a walking trail along a scenic part of the WA coastline. There are two alternative trail routes proposed. Both versions of the trail start and finish at the same locations.

Proposal One has a slight inland path for part of the trail that follows an elevated ridgeline. The inland route follows an informal local trail, would require less clearing and provides elevated panoramic views and improved shade before descending to coastline. This route however would be costlier to construct due to the slopes.

Proposal Two is a coastal route that would require cutting through a local wetland with a Threatened Ecological Community (TEC) and the establishment of a boardwalk to protect some sensitive vegetation from trampling and allow for access during winter inundation. Proposal Two may potentially attract more users as it has an easier gradient, however there is some debate over this assertion as other trails with this level of difficulty are well-frequented in other areas.

There is a wide range of stakeholders including the local government which is responsible for the local beach and infrastructure nearby, including the carparks and facilities at proposed end and start points. Several State government agencies are involved because of the regulation of wetlands and TECs, and the tourism potential of the region.

Adjoining local businesses are interested in the potential for increased visitation and additional business opportunities. Several adjoining landholders are also interested but are concerned about the potential for walkers to ‘stray’ onto their land. A local “friends group” is highly active in caring for the wetland and other local environmental features.

Hypothetical Trail Proposal

Photo: © Danielle Stone
MCDA Step 1 — Determine the relevant values

This step is done by the whole group.

The hypothetical trail proposal example presented above is used to illustrate how each step is undertaken and what the scoring looks like as you work through each stage.

The MCDA process requires the identification of important environmental, social and economic ‘values’ associated with a specific area. Environmental, social and economic values are often referred to as the three pillars of sustainability. A generic list of values is provided (see Table 2). Groups can also identify local values based on specific features such as a locally historically significant landmark, existence of an iconic but not protected local species with high tourism value (e.g. kangaroos) or a local facility potentially impacted by changes (e.g. local surf club).

The entire group should review the list of values to determine which values are relevant and may be impacted by the proposal. Additional values can be added if there is agreement that a locally important value is missing; and any value that is irrelevant to this proposal can be removed. There should be group consensus on all values included.

There should be a range of environmental, social and economic values selected but there is no need to have an equal number of values under each pillar. The values should be added to your scoring table (see Table 3).

Based on the hypothetical trail proposal (see page C10), the following values were selected:

**Environmental:**
- Biodiversity
- Landscape and amenity
- Wetland.

**Social:**
- Aboriginal heritage
- Recreation.

**Economic:**
- Local employment
- Tourism
- Initial costs.
<table>
<thead>
<tr>
<th>Value</th>
<th>Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environment values</strong></td>
<td></td>
</tr>
<tr>
<td>Biodiversity</td>
<td>Includes richness of species present, presence of Threatened Ecological Communities (TECs), presence of known threatened species including habitats.</td>
</tr>
<tr>
<td>International values</td>
<td>Contains habitats, species etc. of international significance and recognised through a formal treaty or by a recognised conservation agency/organisation.</td>
</tr>
<tr>
<td>Landscape and visual amenity</td>
<td>Contains landscapes of high landscape amenity — including special features and views and viewscapes.</td>
</tr>
<tr>
<td>Wilderness</td>
<td>The area is rarely visited by humans, is in relatively pristine condition, and has large areas where human interference — noise or built structures — is not evident.</td>
</tr>
<tr>
<td>Wetland/Estuary</td>
<td>Site contains significant wetlands or estuaries.</td>
</tr>
<tr>
<td><strong>Social values</strong></td>
<td></td>
</tr>
<tr>
<td>Educational value</td>
<td>Proposal has a range of features or is designed to be a significant educational resource. Proximity to educational institutions is also a factor.</td>
</tr>
<tr>
<td>Aboriginal heritage</td>
<td>Site contains significant Aboriginal sites or has other significant cultural significance.</td>
</tr>
<tr>
<td>Health and wellbeing</td>
<td>Capacity for the proposal to add to health and wellbeing of the population — number of potential users and length and difficulty of the proposal.</td>
</tr>
<tr>
<td>Nature interaction</td>
<td>Capacity for the proposal to encourage interaction between people and nature — number of potential users, ease of access, and diversity of vegetation, habitats and landscapes.</td>
</tr>
<tr>
<td>Wilderness interaction</td>
<td>Capacity to provide a wilderness experience — extent of existing wilderness and the capacity of the proposal to detract from that — number of potential users is a significant factor.</td>
</tr>
<tr>
<td>Recreation</td>
<td>Capacity for the proposal to add to or take away from existing recreation uses.</td>
</tr>
<tr>
<td>Local sense of place</td>
<td>Significance of existing local sense of place and capacity to add to or take away from that.</td>
</tr>
<tr>
<td><strong>Economic values</strong></td>
<td></td>
</tr>
<tr>
<td>Basic raw materials (e.g. gravel)</td>
<td>Significance of existing resources and capacity to add to or take away from that.</td>
</tr>
<tr>
<td>Public water resources</td>
<td>Part of a public water supply catchment — consider impacts of proposal on that resource.</td>
</tr>
<tr>
<td>Tourism</td>
<td>Capacity of proposal to create tourism opportunities and revenue.</td>
</tr>
<tr>
<td>Pay per use</td>
<td>Capacity of proposal to generate fees from users.</td>
</tr>
<tr>
<td>Local employment</td>
<td>Capacity of proposal to create (or compete with existing) local employment.</td>
</tr>
<tr>
<td>Mining</td>
<td>Capacity of proposal to compete with existing or proposed mining activities — is it a threat to mining?</td>
</tr>
<tr>
<td>Management cost</td>
<td>How significant are the ongoing management costs likely to be?</td>
</tr>
<tr>
<td>Liability</td>
<td>Will the proposal create any potential financial liability for the proponent?</td>
</tr>
<tr>
<td>Initial costs</td>
<td>Likely initial establishment costs.</td>
</tr>
</tbody>
</table>

2. Middle, I. Hughes, M., Middle, G. and Tye, M. *Application of Multi-Criteria Decision Analysis for recreational trails decision making in Western Australia: Final technical report*. Centre for Sport and Recreation Research, Curtin University, Perth, April 2017
MCDA Step 2 — Agree on the relative weightings of the three pillars

This step is done by the whole group.

As a whole, the group decides the relative importance for the three pillars — environmental, social and economic — and provides them with an appropriate weighting. The default position is that the group considers the three pillars as equally important. This does make later calculations easier.

For this hypothetical example, the group decided that the three pillars are all equally important and should be equally weighted.

If it is decided to have different weighting for each pillar, the total weighting must add to a total of 100. These relative weightings affect the calculations in MCDA Step 7 (OPTIONAL). An example could be:

- Environmental: 40
- Social: 30
- Economic: 30
MCDA Step 3 — Determine the weightings of individual values

This step is done by each small table group.

Each table should discuss the relative importance of the individual values within each pillar. Each value is then given a weighting using a scale of 1-3, with 3 being highly significant or important, and 1 being the least significant or important. There must be full agreement within the group on each weighting. The group may decide to give the same weighting to each value.

Record this information in the “Weighting” column in the table, as shown below. This table will also be used to record scores from Steps 5 and 6.

For this hypothetical example, it was decided to allocate different weightings to each specific value as shown in Table 3.

**Table 3: Scoring Table Step 3**

<table>
<thead>
<tr>
<th>Value</th>
<th>Proposal 1</th>
<th>Proposal 2</th>
<th>Notes — explaining the scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weighting (a)</td>
<td>Raw Score (b)</td>
<td>Weighted Score (a x b)</td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biodiversity</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Landscape and amenity</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Wetland</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal heritage</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Recreation</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local employment</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Tourism</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Initial costs</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MCDA Step 4 — Create a scoring system for the individual values

*This step is done by each small table group.*

At each table, rate the likely impact of each proposal on each value. The scoring is subjective and is based on the expertise and experience of the participants at each table. Some discussion may be required to reach consensus on each value.

The scoring range is +5 to -5 to recognise both positive and negative impacts. The highest possible raw score is +5. A score of ‘0’ indicates the proposal will not generate any identifiable positive or negative impact.

This score is entered in the “**Raw Score**” column in the table (Table 4). The last column is used to record notes explaining how scores or weightings were determined. It is really important to gather this information, as it will be useful to the Steering Group.

### Table 4: Scoring Table Step 4

<table>
<thead>
<tr>
<th>Value</th>
<th>Proposal 1</th>
<th>Proposal 2</th>
<th>Notes — explaining the scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weighting</td>
<td>Raw Score</td>
<td>Weighted Score (a x b)</td>
</tr>
<tr>
<td></td>
<td>(a)</td>
<td>(b)</td>
<td></td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biodiversity</td>
<td>3</td>
<td>0</td>
<td>3 -2</td>
</tr>
<tr>
<td>Proposal 2 passes through a Threatened Ecological Community (TEC).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landscape and amenity</td>
<td>2</td>
<td>-2</td>
<td>2 -1</td>
</tr>
<tr>
<td>Both proposals will create a visible ‘scar’ on the landscape, with Proposal 1 having more impact.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland</td>
<td>2</td>
<td>0</td>
<td>2 -3</td>
</tr>
<tr>
<td>Proposal 2 will have an impact on a significant wetland.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal heritage</td>
<td>3</td>
<td>0</td>
<td>3 -2</td>
</tr>
<tr>
<td>The TEC is also an Aboriginal cultural site. In Proposal 2, the trail goes close to this site which increases the risk of damage.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation</td>
<td>2</td>
<td>3</td>
<td>2 4</td>
</tr>
<tr>
<td>Proposal 2 is likely to attract more visitors.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local employment</td>
<td>3</td>
<td>2</td>
<td>3 3</td>
</tr>
<tr>
<td>Both proposals should bring more people to the area. Proposal 2 is likely to attract more visitors.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourism</td>
<td>2</td>
<td>3</td>
<td>2 4</td>
</tr>
<tr>
<td>Proposal 2 is likely to attract more visitors.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial costs</td>
<td>1</td>
<td>-2</td>
<td>1 -1</td>
</tr>
<tr>
<td>Proposal 1 is more complex to construct.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MCDA Step 5 — Calculate the weighted scores for each value and pillar

The group or the facilitator can either do these calculations during a break

The next three steps require some calculations based on each group’s scores. There are two parts to Step 5:

1. Calculate the weighted scores for each value and each proposal by multiplying the **Weighting (a)** by the **Raw Score (b)**. This is a straightforward calculation — a x b. Enter these into the “WEIGHTED SCORE” column.

2. Add up the **Weighted Scores** for each pillar (environmental, social, economic) and enter the totals, as shown below.

### Table 5: Scoring Table Step 5

<table>
<thead>
<tr>
<th>Value</th>
<th>Proposal 1</th>
<th></th>
<th>Proposal 2</th>
<th></th>
<th>Notes — explaining the scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weighting (a)</td>
<td>Raw Score</td>
<td>Weighted Score (a x b)</td>
<td>Weighting (a)</td>
<td>Raw Score</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biodiversity</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>-2</td>
</tr>
<tr>
<td>Landscape and amenity</td>
<td>2</td>
<td>-2</td>
<td>-4</td>
<td>2</td>
<td>-1</td>
</tr>
<tr>
<td>Wetland</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>-3</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>-4</td>
<td></td>
<td>-14</td>
<td></td>
</tr>
<tr>
<td><strong>Social</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal heritage</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>-2</td>
</tr>
<tr>
<td>Recreation</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>6</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Economic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local employment</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Tourism</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Initial costs</td>
<td>1</td>
<td>-2</td>
<td>-2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td><strong>Final Totals</strong></td>
<td></td>
<td>12</td>
<td></td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
At this point in the process, there should be a decision whether to proceed to Steps 6 or move ahead to discussing the weighted scores shown in the Scoring Table.

There is relatively little advantage to the workshop in completing Steps 6 and 7 which create normalised scores for more accurate scoring in circumstances where:

- The three pillars are equally weighted
- There are roughly the same number of individual values within each pillar
- There is a substantial difference between the final total of proposals.

Tables 9 and 10 at Step 7 show the scoring completed for the hypothetical example completing the normalising for the individual scores as well as adjusted scoring based on pillars with differential ratings. As can be seen, the weighting process will adjust the overall scores but not enough to make a difference in the comparative differences between the Final Totals.

For groups where the scoring is very similar or where there are large differences between the number of individual values in each pillar, they should proceed to Step 6.

For groups that are not going to proceed with the additional calculations in Steps 6 and 7, they should undertake the group discussion as detailed below and then proceed to Step 8.

Each table group should reconvene to review their results and discuss and agree on the key points to present back to the full group about its deliberations.

In this example, Proposal 1 is potentially the preferred alternative as it has a total higher score than Proposal 2, has fewer environmental impacts than Proposal 2 and has a higher positive social impact than Proposal 2. However, Proposal 2 scores higher for economic values.

Discussion points for each small group

Each group should discuss and write down the following information for use in the final discussion at Step 8 and to provide to the facilitator for the final report:

- Which is the preferred alternative?
- Which values were most influential in deliberations (i.e. which were rated 3 in Step 3)?
- Looking at the rating of the impact on each proposal on values (at Step 4), which three values were likely to be impacted most positively (i.e. highest raw score) by Proposal 1 and by Proposal 2?
- In Step 4, which three values were likely to be impacted most negatively (i.e. lowest raw score) by Proposal 1 and by Proposal 2?
- Reviewing the explanatory notes (RH column at Step 4), please do two things:
  1. Add any extra explanatory notes that are needed to fully communicate the group’s thinking
  2. Identify any simple changes that could be made to either proposal to reduce its negative impacts or increase its benefits.

What additional consultation should be considered during the rest of the Trail Development Process?

At the conclusion of this discussion, proceed to Step 8.
MCDA Step 6 — Calculating the ‘normalised’ scores for each pillar for each proposal (OPTIONAL)

Calculations in Steps 6 to 7 are done by the table facilitator or workshop organiser. The group takes a break.

The calculations in this step are slightly more complicated.

In the hypothetical example, there are three values for both the environmental and economic pillars but only two social values. If we used only the weighted scores to calculate the total scores for each proposal, each pillar would not be equally weighted. To avoid this, each pillar score needs to be ‘normalised’. This is done as follows:

1. Calculate the Maximum Possible Score for each value.
   • Do this by multiplying the weighting assigned to each value (figure a) by the highest possible raw score (+5)
   • Enter this figure into the column Maximum Possible Score.
   • The first value in the table is Biodiversity, which is weighted at 3
   • The highest possible raw score is 5
   • Multiply 3 x 5 = 15
   • This figure (15) is entered into the Maximum Score Possible column.

2. Tally the maximum possible score for each pillar and add this to the table.
   • In this example the Total Maximum Possible Score for the environmental pillar is 15 + 10 + 10 = 35.

The completed table (with maximum scores for social and economic values) is on following page.
To create this equal weighting, we need to do a calculation to ‘normalise’ the maximum possible total scores for each pillar, as follows:

3. Create a table like the one shown next.
   From the previous table, transfer across the information from these columns to Table 7:
   • Total maximum possible score for each pillar
   • Proposal 1 total weighted score for each pillar
   • Proposal 2 total weighted score for each pillar.

### Table 6: Scoring Table Step 6
(OPTIONAL)

<table>
<thead>
<tr>
<th>Value</th>
<th>Proposal 1</th>
<th></th>
<th></th>
<th>Proposal 2</th>
<th></th>
<th></th>
<th>Notes — explaining the scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weighting (a)</td>
<td>Raw Score (b)</td>
<td>Weighted Score (a x b)</td>
<td>Weighting (a)</td>
<td>Raw Score (b)</td>
<td>Weighted Score (a x b)</td>
<td></td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biodiversity</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>-2</td>
<td>-6</td>
<td>Proposal 2 passes through a Threatened Ecological Community (TEC).</td>
</tr>
<tr>
<td>Landscape and amenity</td>
<td>2</td>
<td>-2</td>
<td>-4</td>
<td>2</td>
<td>-1</td>
<td>-2</td>
<td>Both proposals will create a visible ‘scar’ on the landscape, with Proposal 1 having more impact.</td>
</tr>
<tr>
<td>Wetland</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>-3</td>
<td>-6</td>
<td>Proposal 2 will have an impact on a significant wetland.</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>-4</td>
<td></td>
<td></td>
<td>-14</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal heritage</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>-2</td>
<td>-6</td>
<td>The TEC is also an Aboriginal cultural site. In Proposal 2, the trail goes close to this site which increases the risk of damage.</td>
</tr>
<tr>
<td>Recreation</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>Proposal 2 is likely to attract more visitors.</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Economic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local employment</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>Both proposals should bring more people to the area. Proposal 2 is likely to attract more visitors.</td>
</tr>
<tr>
<td>Tourism</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>Proposal 2 is likely to attract more visitors.</td>
</tr>
<tr>
<td>Initial costs</td>
<td>1</td>
<td>-2</td>
<td>-2</td>
<td>1</td>
<td>-1</td>
<td>-1</td>
<td>Proposal 1 is more complex to construct.</td>
</tr>
<tr>
<td>Totals</td>
<td>10</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

In this example, the **Maximum Possible Score** is different for each pillar (environmental 35, social 25 and economic 30). This is because there is a different number of values in each category, as well as different weightings assigned to each value. However, in Step 3 the group determined that each of the three pillars has equal weighting.
Normalising the scores when the pillars have equal weighting

4. Look at which of the maximum possible total scores of the three pillars is highest — in this case it is environmental (=35). This is the score against which the scores for the other two pillars need to be normalised.

5. Calculate a multiplier for the other two pillars to enable the lower possible scores (social = 25 and economic = 30) to be compared to the highest possible score (environmental = 35). Do this by dividing the highest maximum possible total pillar score by each pillar’s maximum possible total score. In our example, the multipliers are:
   • Environmental pillar is 35/35 = 1
   • Social pillar is 35/25 = 1.4
   • Economic pillar is 35/30 = 1.17.
   Add the multipliers to the table.

6. For each pillar and each proposal, multiply the weighted score by the multiplier to calculate the normalised weighted scores. The end result of the calculations is shown in the table below.

Table 7: Normalised scores

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Total Maximum Possible Score</th>
<th>Multiplier</th>
<th>Proposal 1 Total Weighted Score</th>
<th>Proposal 1 Total Normalised Weighted Score</th>
<th>Proposal 2 Total Weighted Score</th>
<th>Proposal 2 Total Normalised Weighted Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>35</td>
<td>1</td>
<td>-4</td>
<td>-4</td>
<td>-14</td>
<td>-14</td>
</tr>
<tr>
<td>Social</td>
<td>25</td>
<td>1.4</td>
<td>6</td>
<td>8.4</td>
<td>2</td>
<td>2.8</td>
</tr>
<tr>
<td>Economic</td>
<td>30</td>
<td>1.17</td>
<td>10</td>
<td>11.7</td>
<td>16</td>
<td>18.72</td>
</tr>
</tbody>
</table>

Normalising the scores when the pillars have different weightings

Assume the pillars have different weightings: Environmental Pillar: 40; Social Pillar: 30; Economic Pillar: 30

7. Carry the Total Normalised Weighted Score from Table 7 for each proposal into a new table (Table 8), as shown below. The multiplier is calculated using the highest pillar weighting as the denominator (in this case 40), and the weighting for each pillar as the numerator.

8. For each pillar and each proposal, multiply the Total Normalised Weighted Score by the multiplier to calculate the Adjusted Normalised Weighted Scores. The end result of the calculations is shown in the table below.

Table 8: Normalised and weighted scores

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Agreed value weighting</th>
<th>Proposal 1</th>
<th>Proposal 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Normalised Score</td>
<td>Multiplier</td>
<td>Adjusted Total Weighted Score</td>
</tr>
<tr>
<td>Environment</td>
<td>40</td>
<td>-4</td>
<td>X 40/40</td>
</tr>
<tr>
<td>Social</td>
<td>30</td>
<td>8.4</td>
<td>X 30/40</td>
</tr>
<tr>
<td>Economic</td>
<td>30</td>
<td>11.7</td>
<td>X 30/40</td>
</tr>
</tbody>
</table>
MCDA Step 7 — Final calculation of total combined scores for each proposal (OPTIONAL)

Calculations in steps 5 to 7 are done by the facilitator or workshop organiser.

From Step 6, for the pillars with the same weighting, add the three pillars’ scores from Table 7 to get the total score for each proposal.

Table 9: Scoring comparisons — same pillar weightings

<table>
<thead>
<tr>
<th>Pills have the same weighting</th>
<th>Proposal 1</th>
<th></th>
<th>Proposal 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Weighted Score</td>
<td>Total Normalised Weighted Score</td>
<td>Total Weighted Score</td>
<td>Total Normalised Weighted Score</td>
</tr>
<tr>
<td>Environment</td>
<td>-4</td>
<td>-4</td>
<td>-14</td>
<td>-14</td>
</tr>
<tr>
<td>Social</td>
<td>6</td>
<td>8.4</td>
<td>2</td>
<td>2.8</td>
</tr>
<tr>
<td>Economic</td>
<td>10</td>
<td>11.7</td>
<td>16</td>
<td>18.72</td>
</tr>
<tr>
<td>Total Combined Score</td>
<td>12</td>
<td>16.1</td>
<td>4</td>
<td>7.52</td>
</tr>
</tbody>
</table>

For pillars with the different weighting, transfer the scores from Step 6, Table 8.

Table 10: Scoring comparisons — different pillar weightings

<table>
<thead>
<tr>
<th>Pills have different weighting</th>
<th>Agreed value weighting</th>
<th>Proposal 1</th>
<th></th>
<th>Proposal 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Normalised Weighted Score</td>
<td>Adjusted Total Weighted Score</td>
<td>Total Normalised Weighted Score</td>
<td>Adjusted Total Weighted Score</td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td>40</td>
<td>-4</td>
<td>-4</td>
<td>-14</td>
<td>-14</td>
</tr>
<tr>
<td>Social</td>
<td>30</td>
<td>8.4</td>
<td>6.3</td>
<td>2.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Economic</td>
<td>30</td>
<td>11.7</td>
<td>8.77</td>
<td>18.72</td>
<td>14.04</td>
</tr>
<tr>
<td>Total Combined Score</td>
<td>16.1</td>
<td>11.07</td>
<td>7.52</td>
<td>2.14</td>
<td></td>
</tr>
</tbody>
</table>

The totals are then used to identify the preferred alternative based on the group’s input.

In this example, Proposal 1 may be the preferred alternative as it scores higher using the simple calculation in Step 4 as well as the normalised and different pillar weighted calculations as shown in Tables 9 and 10 (if differential pillar scoring is used).

At this point, each table group reconvenes to review and confirm the results and discuss and agree on the key points to present back to the full group about its deliberations. These discussion points are the same as listed for Step 5. (See next page.)


Discussion points

Each group should discuss and write down the following information for use in the final discussion at Step 8 and to provide to the facilitator for the final report:

- Which is the preferred alternative?
- Which values were most influential in deliberations (i.e. which were rated 3 in Step 3)?
- Looking at the rating of the impact on each proposal on values (at Step 4), which three values were likely to be impacted most positively (i.e. highest raw score) by Proposal 1 and by Proposal 2?
- In Step 4, which three values were likely to be impacted most negatively (i.e. lowest raw score) by Proposal 1 and by Proposal 2?
- Reviewing the explanatory notes (RH column at Step 4), please do two things:
  - Add any extra explanatory notes that are needed to fully communicate the group’s thinking
  - Identify any simple changes that could be made to either proposal to reduce its negative impacts or increase its benefits.
- What additional consultation should be considered during the rest of the Trail Development Process?

At the conclusion of this discussion, proceed to Step 8.
MCDA Step 8 — Final discussion and recommendations

The outcome of the process is to identify recommendations to inform the Trail Development Process. In this example, there are two proposals and the aim of the workshop is to identify the preferred option.

At this point, the overall workshop is reconvened, and each table group presents its results (as determined at the end of Step 5 or Step 7). The preferred alternative could be captured on the whiteboard as a simple tally:

<table>
<thead>
<tr>
<th>Table #</th>
<th>Proposal 1 scores higher</th>
<th>Proposal 2 scores higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>5</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>6</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>•</td>
<td></td>
</tr>
</tbody>
</table>

In this hypothetical tally above, there is a clear preference for Proposal 1. However, it is not unanimous, and the discussion needs to draw out the information each group has prepared.

Further, this discussion needs to be documented as part of the package of outcomes and recommendations to inform Trail Development Process Stage 6: Detailed Design.

Discussion points to be covered by the entire group include:

- Which values were most influential in deliberations (i.e. which were rated 3 in Step 3)?
- Is there consistency about important values between the groups? If so, this is helpful for the Steering Group.
- Which three values were likely to be impacted most positively (i.e. highest raw score at Step 4) by Proposal 1 and by Proposal 2?
- Which three values were likely to be impacted most negatively (i.e. lowest raw score) by Proposal 1 and by Proposal 2?
- What simple changes could be made to either proposal to reduce its negative impacts or increase its benefits?
- What additional consultation should be considered during the rest of the Trail Development Process and who needs to be involved?

A number of these points will already have been discussed by the individual groups to prepare for this discussion.
While it is helpful to get a consensus on preferences, the value of the MCDA process is in these areas:
- Apart from needing consensus at Steps 1 and 2 to ground the process, it does not need a consensus solution
- Part of the value of MCDA as a process is that it accommodates diversity of viewpoints
- The diversity of viewpoints is all important information for the Steering Group to progress the Trail Development Process to reach a planning decision and detailed design
- The compilation of viewpoints expressed, together with the scores given to the individual values, and the notes that each group has made, can help in the final design and route selection of the trail option chosen.

Using the example notes recorded in the scoring tables, Proposal 2 in the case study scored very poorly on both biodiversity and Aboriginal heritage, primarily because the trail passes through a TEC and wetland, which is also a known Aboriginal cultural site and has significant local social importance. An amendment to Proposal 2 to move this section of the trail so it is further away from the TEC would help address this issue. Indeed, if this change was made prior to the MCDA methodology being applied, the scores given to Proposal 2 may have changed significantly.
Trails Development Series

Part D: Checklists and Templates
Purpose of the document

The Trails Development Series is presented in four parts:

- Part A: A Guide to the Trail Development Process
- Part B: A Guide to Community Consultation
- Part C: A Guide to using Multi-Criteria Decision Analysis (MCDA)
- Part D: Checklists and Templates

This document is Part D in the series and provides examples of checklists, templates and explanatory notes to assist with completing the Trail Development Process.

The Trails Development Series has drawn extensively on:

- Chapter 10 of the Western Australian Mountain Bike Management Guidelines (2018), developed by DBCA in collaboration with DLGSC, WestCycle and the Western Australian Mountain Bike Association;
- Trail Development Protocol and Sustainability Framework for Western Australia, developed by Dafydd Davis for DBCA and DLGSC; and
- A report developed for DLGSC by Curtin University’s Centre for Sport and Recreation Research, Application of Multi-Criteria Decision Analysis for recreational trails decision making in Western Australia: Final technical report, by Middle, I., Hughes, M., Middle, G. and Tye, M., Centre for Sport and Recreation Research, Curtin University, Perth, April 2017.
Appendix A: **Trail Development Framework**


<table>
<thead>
<tr>
<th>Project Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Location</td>
<td></td>
</tr>
<tr>
<td>Project Area</td>
<td>Plan Attached</td>
</tr>
<tr>
<td>Tenure</td>
<td></td>
</tr>
<tr>
<td>Background</td>
<td></td>
</tr>
<tr>
<td>Steering Group</td>
<td></td>
</tr>
<tr>
<td>Objectives</td>
<td></td>
</tr>
<tr>
<td>Meetings</td>
<td></td>
</tr>
<tr>
<td>Management Model</td>
<td></td>
</tr>
<tr>
<td>Scope and Scale</td>
<td></td>
</tr>
<tr>
<td>User Types and Styles</td>
<td></td>
</tr>
<tr>
<td>Trail System/Model</td>
<td></td>
</tr>
<tr>
<td>Agreed Standards</td>
<td></td>
</tr>
<tr>
<td>Funding</td>
<td></td>
</tr>
<tr>
<td>Delivery</td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td></td>
</tr>
</tbody>
</table>

*(Based on work by D. Davis, 2010)*
Stakeholder Approval

Signature

Name

Organisation

Date

Signature

Name

Organisation

Date

Signature

Name

Organisation

Date

Signature

Name

Organisation

Date
Explanatory Notes

The development of a framework for proposed trail developments will ensure clarity with all stakeholders working towards agreed objectives and outcomes, along with assisting and informing the trail planning, design, construction and management stages. The following notes have been provided as a general guide to the development of the framework.

<table>
<thead>
<tr>
<th>Item</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Provide a description of the proposed location.</td>
</tr>
<tr>
<td>Project Area</td>
<td>Provide details of the boundaries of the planning area for the proposed trails.</td>
</tr>
<tr>
<td>Tenure</td>
<td>Provide details as to the land tenure, or mix of land tenures applicable to the project area.</td>
</tr>
<tr>
<td>Background</td>
<td>Provide the background as how the project area has been identified and why it is being considered.</td>
</tr>
<tr>
<td></td>
<td>• Has it been identified in trail master planning?</td>
</tr>
<tr>
<td></td>
<td>• Is there community support/demand?</td>
</tr>
<tr>
<td></td>
<td>• Is it supported by land managers and local government?</td>
</tr>
<tr>
<td></td>
<td>• What is the rationale of the trail — why is it being proposed?</td>
</tr>
<tr>
<td>Steering Group</td>
<td>Developing a framework can only be done through clear and formal consultation with all relevant stakeholders and partners. It is crucial that all key stakeholders and partners are \ identified, understand and support the planning, design and delivery process.</td>
</tr>
<tr>
<td></td>
<td>Provide a list the key agencies/groups and persons who will form the Steering Group, such as other government agencies, local government, local trail groups, recreation clubs, environment groups, etc.</td>
</tr>
<tr>
<td></td>
<td>If the project is of national significance, you may also wish to include relevant peak bodies, such as the Westcycle or the WA 4WD Association</td>
</tr>
<tr>
<td></td>
<td>Include contact details — phone and email as minimum.</td>
</tr>
<tr>
<td></td>
<td>Consider also listing interested stakeholders (in addition to the steering group) to keep informed on the trail development process.</td>
</tr>
<tr>
<td>Meetings</td>
<td>Identify an indicative timeframe of how often and where the Steering Group will meet for the duration of the project.</td>
</tr>
<tr>
<td>Objectives</td>
<td>Project objectives should define the overall aim and outcomes of the project, clearly setting out what the project is trying to achieve and \ why.</td>
</tr>
<tr>
<td></td>
<td>Objectives may include environmental, economic, social and/or community outcomes.</td>
</tr>
<tr>
<td></td>
<td>All objectives should be high-level and SMART — Specific, Measurable, Achievable, Realistic and Timely.</td>
</tr>
<tr>
<td>Item</td>
<td>Comment</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Management Model</td>
<td>To ensure long-term sustainability, it is essential to identify who is the trail owner and trail operator.</td>
</tr>
<tr>
<td></td>
<td>(The trail owner is the entity that owns the physical structure of the trail and manager of the land and carries the liability for the health and safety of all users. The operator is generally the entity that maintains the trail to the agreed standards of the owner. It can be the same organisation.)</td>
</tr>
<tr>
<td></td>
<td>• Who is the trail owner?</td>
</tr>
<tr>
<td></td>
<td>• Who is the trail operator?</td>
</tr>
<tr>
<td></td>
<td>• How will visitor use be monitored?</td>
</tr>
<tr>
<td></td>
<td>• Who will undertake the maintenance — owner, operator, volunteers?</td>
</tr>
<tr>
<td></td>
<td>• If the owner and operator are different, what instrument of agreement is to be used — trail adoption, MOU, etc?</td>
</tr>
<tr>
<td>Scope and Scale</td>
<td>The scope and scale clearly identify the significance and size of the project and are closely linked to achieving the project objectives.</td>
</tr>
<tr>
<td></td>
<td>• What is the proposed trail/networks level of significance — is a nationally, regionally or locally significant trail?</td>
</tr>
<tr>
<td></td>
<td>• What size is the project?</td>
</tr>
<tr>
<td></td>
<td>• How many kilometres of trail is planned?</td>
</tr>
<tr>
<td></td>
<td>• What infrastructure is required?</td>
</tr>
<tr>
<td></td>
<td>• Is the project development to be staged?</td>
</tr>
<tr>
<td></td>
<td>• What type of use is proposed — recreational and/or event?</td>
</tr>
<tr>
<td>User Types and Styles</td>
<td>It is essential to define the target users of the trails as part of the framework to ensure that they meet the needs and expectations of the intended users.</td>
</tr>
<tr>
<td></td>
<td>• What are the different types of users being targeted?</td>
</tr>
<tr>
<td></td>
<td>• What are the abilities of target users?</td>
</tr>
<tr>
<td></td>
<td>• Is universal access required e.g. wheelchair access on walk trails, or adaptive cycle access on mountain bike trails?</td>
</tr>
<tr>
<td></td>
<td>• What are the appropriate trail classifications for the targeted users?</td>
</tr>
<tr>
<td></td>
<td>• What are the different styles of activities that will take place on the trails (if appropriate) e.g. trail running on walking trails, cross country vs downhill for mountain bike trails?</td>
</tr>
<tr>
<td></td>
<td>• Is the trail single use or multi-use?</td>
</tr>
<tr>
<td>Trail System/Model</td>
<td>Outline the trail system being proposed.</td>
</tr>
<tr>
<td></td>
<td>• Is it linear or looped trail?</td>
</tr>
<tr>
<td></td>
<td>• If looped, is it a core trail, stacked loop, cloverleaf, or finger style?</td>
</tr>
<tr>
<td></td>
<td>• Is it single or dual direction?</td>
</tr>
<tr>
<td></td>
<td>• Is it a single trail or a network of trails?</td>
</tr>
<tr>
<td></td>
<td>• Is it part of a trail centre or trail town?</td>
</tr>
<tr>
<td>Agreed Standards</td>
<td>These standards must be agreed by the Steering Group and applied consistently to all aspects of:</td>
</tr>
<tr>
<td></td>
<td>• Design</td>
</tr>
<tr>
<td></td>
<td>• Planning</td>
</tr>
<tr>
<td></td>
<td>• Construction</td>
</tr>
<tr>
<td></td>
<td>• Maintenance.</td>
</tr>
<tr>
<td>Item</td>
<td>Comment</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Funding</strong></td>
<td>Outline how the project will be funded.</td>
</tr>
<tr>
<td></td>
<td>For larger projects with multiple funding sources, it may be beneficial to outline the sources for the specific stages of trail development e.g. Site Assessments, Concept Plan, Corridor Evaluations, Design, Construction and Management.</td>
</tr>
<tr>
<td><strong>Delivery</strong></td>
<td>Confirming the way the project will be delivered requires the Steering Group to agree on the following key issues:</td>
</tr>
<tr>
<td></td>
<td>• Who will deliver the project?</td>
</tr>
<tr>
<td></td>
<td>• How will the project be delivered — internal staff or external contracts?</td>
</tr>
<tr>
<td></td>
<td>• Will stages (e.g. Site Assessments, Concept Plan, Corridor Evaluations, Design, Construction) be addressed separately?</td>
</tr>
<tr>
<td></td>
<td>• Will volunteers be involved? If so, how and at what stage?</td>
</tr>
<tr>
<td></td>
<td>• Who will manage the project?</td>
</tr>
<tr>
<td></td>
<td>• How will the project be managed?</td>
</tr>
<tr>
<td></td>
<td>• Who will take responsibility for delivering different aspects of the project?</td>
</tr>
<tr>
<td></td>
<td>• Will the project be staged?</td>
</tr>
<tr>
<td></td>
<td>• What are the proposed timelines?</td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td>Evaluation of the project is essential to find out if the project has met its objectives and to improve future trail developments.</td>
</tr>
<tr>
<td></td>
<td>• How is the Steering Group planning to evaluate the success of the project?</td>
</tr>
<tr>
<td></td>
<td>• Has the project met its planned objectives?</td>
</tr>
<tr>
<td></td>
<td>• Are the trails being used by the intended target market?</td>
</tr>
<tr>
<td></td>
<td>• Are then any unforeseen issues/impacts (environmental, economic or social)?</td>
</tr>
<tr>
<td><strong>Stakeholder Approval</strong></td>
<td>Document the Steering Group approval of completed and agreed framework.</td>
</tr>
</tbody>
</table>
## Appendix B: Impact Evaluation Checklist

Note: a Word template for the Impact Evaluation Checklist can be downloaded from the following link: https://pws.dbca.wa.gov.au/management/trails

### A — Land Details

<table>
<thead>
<tr>
<th>Land Manager</th>
<th>Local Government Authority</th>
<th>Private property/Reserve Name and Location</th>
<th>Tenure and Primary Management Objective of Lands</th>
</tr>
</thead>
</table>

### B — Proposed Project

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Type and Extent of Proposed Project</th>
<th>Alternative Options Considered</th>
<th>Implications of Postponement or ‘Do Nothing’ Option</th>
</tr>
</thead>
</table>

### C — Impact Evaluation

Indicate with Y/N in **Acceptable** column if proposed work is acceptable or not with respect to the environmental/management issue listed. If it’s not acceptable, consider acceptability of modified proposal in **Modified** column or the **Do Nothing** column. The **Comments** column is for detailing action/s required to overcome/minimise adverse impact, or if no information is available to allow a decision.

<table>
<thead>
<tr>
<th>Issues</th>
<th>Acceptable</th>
<th>Modified</th>
<th>Do Nothing</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Does the area have a management plan or strategy?</td>
<td></td>
<td></td>
<td></td>
<td>Indicate action required to overcome/minimise adverse impact, or if no information is available to allow a decision.</td>
</tr>
<tr>
<td>1.2 Does the proposal conflict with existing policy or management plan?</td>
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</tr>
<tr>
<td>Issues</td>
<td>Acceptable</td>
<td>Modified</td>
<td>Do Nothing</td>
<td>Comments</td>
</tr>
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<td>-----------------------------------------------------------------------</td>
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<tr>
<td>1.3 How will the proposal affect neighbouring landholders and, and community interests</td>
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<tr>
<td>1.4 How will the proposal affect land management considerations e.g:</td>
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<tr>
<td>• Fire management</td>
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<tr>
<td>• Roads</td>
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<tr>
<td>• Other recreation or tourism</td>
<td></td>
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<tr>
<td>1.5 How will the proposal affect or be affected by existing or planned land use e.g:</td>
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<tr>
<td>• Mining and exploration</td>
<td></td>
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<tr>
<td>• Basic Raw Material (gravel, rock and borrow pits)</td>
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<tr>
<td>• Forestry</td>
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<tr>
<td>• Utility lines</td>
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<tr>
<td>• Water catchment</td>
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<tr>
<td>• Commercial activities (e.g. apiarist)</td>
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<td>2.1 Diseases (e.g. dieback, Armillaria, cankers etc)</td>
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<tr>
<td>2.2 Will area require baiting buffers?</td>
<td></td>
<td></td>
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<tr>
<td>2.3 Declared weeds, or other environmental weeds</td>
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</tr>
<tr>
<td><strong>3. Flora, Fauna and Ecosystems</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1 Declared rare flora or priority species, threatened communities or restricted, unusual or poorly reserved vegetation associations</td>
<td></td>
<td></td>
<td></td>
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</tr>
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<td>3.2 Declared rare or endangered fauna, translocation programs, release sites or restricted habitats.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3.3 Diverse ecosystem zones including rivers, streams, swamps, lakes, gorges, rock outcrops etc.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3.4 Fauna habitat zones</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5 Old-growth forest</td>
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<tr>
<td><strong>4. Cultural Heritage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1 Registered Aboriginal sites</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
### Issues

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Modified</th>
<th>Do Nothing</th>
<th>Comments</th>
</tr>
</thead>
</table>

4.2 Is the area subject to a native title claim? Has DAA or the Aboriginal Land and Sea Council been advised? Have Working Party members been consulted?

4.3 Does the area adjoin or contain any places on the following lists:

- Register of the National Estate
- Register of Heritage Places
- Municipal inventory for the local council
- Land manager heritage database

### 5. Recreation and Access

5.1 How will the area be accessed?

5.2 Is there a potential conflict with existing recreation use, events and/or commercial tour operators?

5.3 How will visitor safety be managed?

5.4 Landscapes, features, wilderness appreciation.

5.5 Increased demand for facilities and service (rubbish disposal, toilets etc)

### 6. Geology, Landform and Soils

6.1 Caves, fossils, or dunes

6.2 Soil erosion (water or wind)

6.3 Soil mixing or soil compaction

6.4 Soil compatibility

### 7. Hydrology

7.1 Stream or impoundment sedimentation

7.2 Altered run-off, impeded drainage or water logging

### 8. Monitoring

8.1 How and when will the effects of the proposed operation be monitored?

8.2 Who is responsible for completing the monitoring?

8.3 Have resources been made available for monitoring?

8.4 Who will be provided with the monitoring results, and what is expected to happen with the results?
**D — Level of Approval Required**

**E — Proponent/s**

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name/Position</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name/Position</td>
<td></td>
</tr>
</tbody>
</table>

**F — Endorsements/Approvals**

<table>
<thead>
<tr>
<th>Comments</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Signature</th>
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</thead>
<tbody>
<tr>
<td>Name/Position</td>
<td></td>
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</tbody>
</table>

**APPROVED / NOT APPROVED**

Date

**Explanatory Notes**

<table>
<thead>
<tr>
<th>Item</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A — Land Details</td>
<td></td>
</tr>
<tr>
<td>Land Manager:</td>
<td>Identify who the land manager is.</td>
</tr>
<tr>
<td>LGA:</td>
<td>Identify the Local Government Authority in which the Park/Reserve is located. This will be important in determining whom to contact regarding “Municipal Inventory” information if not the same as the land manager.</td>
</tr>
<tr>
<td>Park/Reserve Name and Location:</td>
<td>Identify the gazetted name of the Park/Reserve and any additional information regarding the locality or block name that may be relevant, and provide a map with the checklist. Identify the project area boundary.</td>
</tr>
<tr>
<td>Primary Management Objective of the Park/Reserve:</td>
<td>Clearly identify the primary management objective of the Park/Reserve, and include the identification of any proposed zoning classification that is applied to the Park/Reserve.</td>
</tr>
<tr>
<td>Item</td>
<td>Comment</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Section B — Proposed Works</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>Provide a clear description of the purpose of the work proposed for evaluation. The proposed project must be broken down into its component parts, and the location and extent of each of these parts quantified in detail. The proposed location of the project should be mapped at a scale that enables it to be effectively assessed.</td>
</tr>
<tr>
<td><strong>Alternative Options Considered:</strong></td>
<td>Briefly outline the other options that were considered, and provide a short justification as to why they were not preferred.</td>
</tr>
<tr>
<td><strong>Implications of postponement or ‘Do Nothing’ option:</strong></td>
<td>Briefly outline the implications of delaying the completion of the proposed work or of doing nothing.</td>
</tr>
<tr>
<td><strong>Section C — Impact Evaluation</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1. Management Considerations</strong></td>
<td></td>
</tr>
<tr>
<td>1.1 Does the area have a management plan strategy or master plan?</td>
<td>Outline the management documents available for the area.</td>
</tr>
<tr>
<td>1.2 Does the proposal align with existing policy or management plan?</td>
<td>Describe how the proposed project aligns with any existing management documents.</td>
</tr>
<tr>
<td>1.3 How will the proposal affect neighbouring landholders and, and community interests</td>
<td>Will the proposed project affect neighbouring landholders? Is the proposal likely to adversely affect local community interests? How will this be managed?</td>
</tr>
<tr>
<td>1.4 How will the proposal affect land management considerations e.g:</td>
<td>Consider how the proposed project may affect prescribed burning activities or bush fire management (additional firebreaks, recreation site protection during prescribed burning, review prescribed burn plan etc)</td>
</tr>
<tr>
<td></td>
<td>Review the proposed project against strategic roads (existing and future) for potential changes required or conflicts.</td>
</tr>
<tr>
<td></td>
<td>Review the proposed project against existing recreation and tourism activities in the area for conflicts and opportunities (e.g. shared facilities).</td>
</tr>
<tr>
<td>1.5 How will the proposal affect or be affected by existing or planned land use e.g:</td>
<td>Identify weather there are any mining operations that are likely to impact on the Park/Reserve in the future.</td>
</tr>
<tr>
<td></td>
<td>Identify the quantities of BRM required. Where will this be obtained from and any ongoing commitments from the Park/Reserve. How will BRM extraction areas be rehabilitated?</td>
</tr>
<tr>
<td></td>
<td>Identify whether the area is leased to any forestry organisations or companies. How will consultation with forestry organisation/companies be undertaken? How will the proposed project be managed around harvesting operations?</td>
</tr>
<tr>
<td>Item</td>
<td>Comment</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>• Utility lines</td>
<td>Identify any public utilities within the proposed project areas and whether these will be affected by the project.</td>
</tr>
<tr>
<td>• Water catchment/public drinking water source areas (PDSWA)</td>
<td>Identify whether or not the proposed project is within water catchment or PDWSA. Does the proposal conform to any existing or proposed</td>
</tr>
<tr>
<td></td>
<td>management plans or policy? e.g. Operational Policy 13 — Recreation within Public Drinking Water Source Areas on Crown land.</td>
</tr>
<tr>
<td>• Commercial activities (e.g. apiarist)</td>
<td>Identify if the proposed project may affect any approved commercial activity on the Park/Reserve.</td>
</tr>
<tr>
<td>1.6 How will the proposal affect or be affected by neighbouring land use?</td>
<td>Identify neighbouring land use that is likely to affect the proposal, or where the proposed project is likely to affect the neighbouring land use.</td>
</tr>
<tr>
<td>1.7 Are there any research plots, scientific study areas and reference sites in the proposed area?</td>
<td>Identify whether there are any research plots, scientific study or reference sites that may be affected by the proposed project.</td>
</tr>
<tr>
<td>2. Plant Disease, Ferals and Pests, Weeds</td>
<td></td>
</tr>
<tr>
<td>2.1 Diseases (e.g. dieback, <em>Armillaria</em>, cankers etc)</td>
<td>If no dieback report is available for the area, complete a survey and develop a hygiene management plan.</td>
</tr>
<tr>
<td></td>
<td>Identify the presence of <em>Armillaria</em> and provide proposed operational strategies to manage this.</td>
</tr>
<tr>
<td></td>
<td>Identify whether the native vegetation in the area exhibits symptoms of cankers.</td>
</tr>
<tr>
<td>2.2 Will area require baiting buffers?</td>
<td>Identify whether the area will require a buffer for 1080 baiting.</td>
</tr>
<tr>
<td>2.3 Declared weeds, or other environmental weeds</td>
<td>Are there known infestations of weeds in the Park/Reserve? Identify if the proposed project may cause introduction or spread of weeds. What will be the management costs?</td>
</tr>
<tr>
<td>3. Flora, Fauna and Ecosystems</td>
<td></td>
</tr>
<tr>
<td>3.1 Declared Rare Flora (DRF) or priority species, threatened communities or restricted, unusual or poorly reserved vegetation associations</td>
<td>State the presence of DRF, priority species, threatened or priority ecological community on the Park/Reserve.</td>
</tr>
<tr>
<td>3.2 Declared rare or endangered fauna, translocation programs, release sites or restricted habitats.</td>
<td>State the presence of rare and endangered species in the Park/Reserve. Comment on any translocation programs, release sites or restricted habitats if identified.</td>
</tr>
<tr>
<td>3.3 Diverse ecosystem zones including rivers, streams, swamps, lakes, gorges, rock outcrops etc.</td>
<td>Comment on the degree to which the natural vegetation is intact.</td>
</tr>
<tr>
<td>3.4 Fauna habitat zones</td>
<td>State the presence of any fauna habitat zones within the proposed project area.</td>
</tr>
<tr>
<td>3.5 Old-growth forest</td>
<td>State whether the proposed project will impact on any areas of old-growth forest. Higher level approval may be required.</td>
</tr>
</tbody>
</table>
## 4. Cultural Heritage

### 4.1 Registered Aboriginal sites
- Report on known Aboriginal sites located within the proposed project area. Is further surveys or consultation required.

### 4.2 Is the area subject to a native title claim? Has DAA or the Aboriginal Land and Sea Council been advised? Have Working Party members been consulted?
- State whether DAA, or the appropriate ALSC has been advised and what the outcome of this is. State when advice or consultation with the Working Party members will occur.

### 4.3 Does the area adjoin or contain any places on the following lists:
- **Register of the National Estate**
  - Check the register and report on any sites that are within or adjoining the proposed project area. Comment on whether the proposed project will impact on any sites.
- **WA Register of Heritage Places**
  - Check the register and report on any sites that are within or adjoining the proposed project area. Comment on whether the proposed project will impact on any sites.
- **Municipal inventory for the local council**
  - Check the inventory and report on any sites that are within or adjoining the proposed project area. Comment on whether the proposed project will impact on any sites.
- **Land manager heritage database**
  - The land manager may have a database that lists identified cultural heritage places for the proposed project area.

## 5. Recreation and Access

### 5.1 How will the area be accessed?
- Identify access routes and entry/egress areas for the proposed project area and activity. Identify any existing access that requires closure or management. Differentiate between access for the public and access for maintenance.

### 5.2 Is there a potential conflict with existing recreation use, events and/or commercial tour operators?
- Identify any existing recreation, events and/or commercial tour operators within the proposed project area. Will the proposed project conflict with this? How will any potential conflict be managed?

### 5.3 How will visitor safety be managed?
- Assess potential visitor risks and identify how visitor safety will be managed.

### 5.4 Landscapes, features, wilderness appreciation.
- Identify whether the proposed project will impact on important scenic areas, and how this can be managed through any future planning and/or construction works.

### 5.5 Increased demand for facilities and service (rubbish disposal, toilets etc)
- How will increased usage be managed? Roading or trail wear/tear, rubbish removal, toilet maintenance, vandalism etc.

## 6. Geology, Landform and Soils

### 6.1 Caves, fossils, or dunes
- Assess and identify areas that are sensitive to disturbance and may be affected by the proposed project now or in the future.

### 6.2 Soil erosion (water or wind)
- Assess and identify appropriate trail design and construction techniques and standards to minimise soil erosion.

### 6.3 Soil mixing or soil compaction
- Assess and identify appropriate trail design, construction techniques and standards to minimise soil profile damage.
<table>
<thead>
<tr>
<th>Item</th>
<th>Comment</th>
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</thead>
<tbody>
<tr>
<td>6.4 Soil compatibility</td>
<td>Is the soil type compatible with the proposed project? What management strategies will be in place e.g. surfacing, armouring etc?</td>
</tr>
<tr>
<td>7. Hydrology</td>
<td></td>
</tr>
<tr>
<td>7.1 Stream or impoundment sedimentation</td>
<td>Identify whether the proposed project is likely to affect water quality in the rivers and streams or where there is the potential to affect a catchment. This may include major dams, or dams used by neighbouring landholders.</td>
</tr>
<tr>
<td>7.2 Altered run-off, impeded drainage or water logging</td>
<td>Assess and identify areas that may be affected by a changed water flow regime.</td>
</tr>
<tr>
<td>8. Monitoring</td>
<td></td>
</tr>
<tr>
<td>8.1 How and when will the effects of the proposed project be monitored?</td>
<td>Provide a task list for monitoring the proposed project.</td>
</tr>
<tr>
<td>8.2 Who is responsible for completing the monitoring?</td>
<td>Detail the person or organisation responsible for the monitoring of the proposed project.</td>
</tr>
<tr>
<td>8.3 Have resources been made available for monitoring?</td>
<td>Detail the commitment and resources that have been made available for the life of the monitoring period.</td>
</tr>
<tr>
<td>8.4 Who will be provided with the monitoring results, and what is expected to happen with the results?</td>
<td>Identify who will receive the reports and what is expected to happen as a result of monitoring. This may include review of procedures, cessation of the project, rehabilitation etc.</td>
</tr>
</tbody>
</table>

**Section D — Level of Approval Required**

The person who prepared the Impact Evaluation should seek guidance from the land manager regarding level of approval required.

**Section E — Proposer**

The person who prepared the Impact Evaluation should sign the document.

**Section F — Endorsement/Approval**

The "Impact Evaluation Checklist" should signed by the land manager at the appropriate approval level (Section D above).
Appendix C: Concept Plan Outline

Suggested minimum content

1. Project Area Overview/Summary:
   • Description of project area
   • Project objectives
   • Scope and scale
   • Opportunities and Constraints within project area (based on site assessments, e.g. access, vegetation, soils, topography, environmental constraints, interpretative opportunities)
   • Proposed target market and user types
   • Proposed trail system.

   Note: much of the above should be available from the agreed framework.

2. Trail Network Concept Description:
   • Plan of overall trail network concept (indicative alignment based on ~25–50m wide trail corridors)

Appendix D: Detailed Design Outline

Written Specification

(suggested content)

Trail network summary, including (but not limited to):
   • Project background
   • Project site summary
   • Breakdown of trail types, styles and classifications
   • Topographic plan of all individual trail alignments (GPS alignments).

Individual trail summaries

A trail summary should be provided for each individual trail and include (but not limited to):
   • Individual trail classification
   • Individual trail type and style
   • Identified direction and purpose (e.g. ascend/descending, single/dual-purpose/multi-purpose)
   • Distance
   • Individual trail summaries (including but not limited to; trail description, length, gradient, classification, type, style, recommended technical trail features (TTF) and filters, recommended construction method and materials, etc)
   • Proposed infrastructure requirements and locations (including but not limited to car parks, toilets, facility capacities, etc)
   • Sign plan (including but not limited to; proposed location for major and minor trailheads, interpretative opportunities, etc).

3. Proposed Development Process:
   • Proposed development staging, priority and construction sequencing
   • Trail construction estimates and estimated Bill of Quantities.

   • Breakdown of existing, upgrade or new trail construction required
   • Individual topographic plan for each individual trail, including GPS trail alignment
   • If upgrading existing trail alignments, redundant trail requiring rehabilitation
   • Individual trail assessment, including (but not limited to) the following:
     - Assessment of natural features, soil type and geology, including any vegetation disturbance/removal, any required trail tread treatments (e.g. surfacing, armouring, etc) and treatment specification (e.g. start/finish, dimensions (length x width x depth), materials requirements, etc)
     - Assessment of gradients (trail and side slope), proposed drainage features, position and specification
Field Outputs
*(suggested minimum requirements)*

Trail centrelines flagged in the field at specified intervals (suggested 5–10 metres) and include marked chainage.

In addition to the centreline/chainage flagging, the following points should be identified in the field, and linked with the written specification above:

- Changes in any trail tread treatments (e.g. use of onsite vs imported materials, changes from insloped to outsloped trail, etc)
- Locations of trail drainage features (e.g. grade reversals, drains, etc)
- Location of constructed trail elements (e.g. anchors, armouring, corrals, etc)
- Location of constructed technical trail features (TTF) (e.g. berms, tabletops, rollers, etc).

Recommended trail construction techniques, including:

- Vegetation clearing techniques, clearances, disposal and equipment requirements
- Specifications of required machinery for trail construction.

Detailed drawings/specifications/construction notes for any proposed:

- Trail tread treatments
- Drainage features
- Constructed trail elements
- Constructed TTFs.

Summary of required materials and quantities for trail construction, itemised by individual trail.

*Note: The completed detailed design should allow construction stages to be separated into individual trails as/if required.*
Sample Trail/Network Detailed Design

Note: a Word template for the Trail/Network Detailed Design can be downloaded from the following link: https://pws.dbca.wa.gov.au/management/trails

<insert name>
Trail/Network Detailed Design

<insert Partner names>

<Date>
### Project Background

<insert project background>

### Site Summary

<insert summary/description of project site>

### Breakdown of Trails

<insert trail breakdown — types, styles, classification, length>

### General Construction Standards

<insert any general construction standards relative to all trails within the network>

---

**<insert name> Trail Network map**

<insert map of trail network showing Trail 1, Trail 2, etc, as required>

*Note: Please give the map a separate page.*
## Trail 1 Design

### Trail Description

<insert summary description of the trail>

### Trail Details

- Trail Classification —
- Trail Length —
- Trail Type — <XC, DH AM, etc>
- Trail Style — <technical, flow or other>
- Trail Purpose — <ascending/descending, single/dual/multi purpose>
- Trail Direction — <single or dual>
- Site Gradient (side slope) —
- Trail Gradient —
- Trail Fall/Gain —
- In Situ Soil Type/s —
- Natural features —
- Construction Footprint Width —
- Finished Trail Tread Width —

### Trail Technical and Drainage Features

<insert list of technical trail features and drainage features, proposed trail filter (MTB trails), >

### Trail Construction Standards

<insert and specific construction and finishing standards, including vegetation clearing and disposal, fall zone dimensions and treatments, recommended machinery and equipment>

### Construction Materials

<insert summary of materials — type, quantity, source (local or imported), etc>
Trail 1 Map

<insert detailed map of the trail alignment, with filters, technical features and drainage marked and labelled to match Construction Table items on next page>

<identify machinery access where required>

1. Construction drawings are required for any constructed feature.
### Trail 1 Construction Table

*Note: this table can be in landscape format if required.*

<table>
<thead>
<tr>
<th>Item</th>
<th>Chainage (m)</th>
<th>Feature Type¹</th>
<th>Feature Dimensions</th>
<th>In-Soil Type</th>
<th>Required Materials</th>
<th>Construction Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>005</td>
<td>Tabletop (filter)</td>
<td>2,500 800 600</td>
<td>Gravel</td>
<td>In situ soil</td>
<td>To be constructed with 1:1 batters</td>
</tr>
<tr>
<td>2</td>
<td>015</td>
<td>Drain/Grade reversal</td>
<td></td>
<td>Gravel</td>
<td>N/A</td>
<td>Trail tread to be free draining</td>
</tr>
</tbody>
</table>

<copy and insert additional Trail Design/Map/Construction Table pages as required>
### Technical Feature Specifications/Drawings

*<insert drawings, specifications and construction notes for required features>*

<table>
<thead>
<tr>
<th>Feature Image</th>
<th>Feature Description</th>
</tr>
</thead>
</table>
| Trail Corridor Specification —  
  A — Finished Trail Tread — 600mm  
  B — Vegetation clearing width — 900mm  
  C — Vertical clearance — 2,200mm |

Tabletop

*<insert additional features as required>*
Appendix E: Sample Trail Adoption Agreement

Note: a Word template for the Trail Adoption Agreement can be downloaded from the following link: https://pws.dbca.wa.gov.au/management/trails

Trail Adoption Agreement

between the

<Trail Manager>

and

{Name of Trail Group>

<Date>
1. Introduction
This Trail Adoption Agreement is a document to formalise a partnership between *<name of trail group>* and the *<trail manager>*.

2. Name and Location of Adoption

<table>
<thead>
<tr>
<th>Name and Location of Adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adoption Name</td>
</tr>
<tr>
<td>Group Name</td>
</tr>
<tr>
<td>District</td>
</tr>
<tr>
<td>Volunteer Project No.</td>
</tr>
<tr>
<td>Reserve Name(s)</td>
</tr>
<tr>
<td>Land Tenure(s)</td>
</tr>
</tbody>
</table>

(See Attachment 1 for a detailed map of the trail(s)).

3. Term

<table>
<thead>
<tr>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start date</td>
</tr>
<tr>
<td>Term X years</td>
</tr>
<tr>
<td>Finish Date</td>
</tr>
</tbody>
</table>

4. Contact Details

**Club/Group**

<table>
<thead>
<tr>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact/s</td>
</tr>
<tr>
<td>Position</td>
</tr>
<tr>
<td>Phone</td>
</tr>
<tr>
<td>Mobile</td>
</tr>
<tr>
<td>Email</td>
</tr>
</tbody>
</table>

**Trail Manager**

<table>
<thead>
<tr>
<th>Trail Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact/s</td>
</tr>
<tr>
<td>Position</td>
</tr>
<tr>
<td>Phone</td>
</tr>
<tr>
<td>Mobile</td>
</tr>
<tr>
<td>Email</td>
</tr>
</tbody>
</table>
5. Adoption Objectives

- Define the roles and responsibilities of each party
- Foster the highest levels of cooperation between <Trail Manager> and <group> to ensure the sustainable management of <insert name> trail(s)
- Maintain and improve the <insert name> trail(s), to standards agreed and required by <Trail Manager> and other relevant authorities, with regard to:
  - User health and safety
  - Environmental protection
  - Promotion of the activity and user satisfaction
  - Shared use (where applicable).
- Promote the partnership between <Trail Manager> and <group>
- Promote an active lifestyle and an appreciation of the natural environment
- Reduce the incidence of unsanctioned/unauthorised trail building.
- <insert any extra objectives>

6. Communication and Reporting

<Trail Manager> will:

- Nominate a specific staff member to be the ‘Adoption Liaison Officer’ between <Trail Manager> and the <group>
- Ensure agreed maintenance works are approved and included in the local works schedule
- Approve the group’s maintenance plan or provide feedback within a reasonable timeframe
- Establish and maintain two-way communications and ensure that the <group> are advised of any changes that are likely to impact on the adoption activities
- Provide maintenance standards, technical advice, guidance and inspection as may be required during the adoption
- Promote the work of the <group> in <Trail Manager> publications, visitor information and interpretive materials, media press releases and through the <Trail Manager> website as appropriate.
- <insert further agreed communication and reporting standards/conditions as required>

<group> will:

- Nominate a member to be the ‘Adoption Liaison Officer’ between <Trail Manager> and the <group>.
- Complete all necessary documentation and obtain approval from the <Trail Manager> ‘Adoption Liaison Officer’ prior to implementation of any works on <Trail Manager>-managed lands.
- Provide the <Trail Manager> ‘Adoption Liaison Officer’ with a maintenance plan for approval before the beginning of each maintenance season
- Advise the <Trail Manager> ‘Adoption Liaison Officer’ or their nominated representative 14 days in advance of any planned trail maintenance
- Provide a report to <Trail Manager> ‘Adoption Liaison Officer’ at the end of each period of works.
- Notify the <Trail Manager> ‘Adoption Liaison Officer’ of any incidents or complaints received from general members of the public
- Encourage safe and courteous public use; actively promote Leave No Trace minimal impact use of <Trail Manager>-managed land
- Serve as ambassadors for the <group> and encourage cooperation with all other recreation groups and users
• Promote sustainable trail development and use.
• <insert further agreed communication and reporting standards/conditions as required>

Both parties will:
• Ensure all communication will be between the nominated ‘Adoption Liaison Officers’ provided in Section 4
• Work together to develop an annual maintenance plan, seek funding and facilitate the works on <insert name> trail(s)
• Notify the other party should their ‘Adoption Liaison Officer’ be unavailable for more than two weeks, and provide the other party with interim contact details.
• Ensure the nominated representatives (Section 4) will meet at least four (4) times per year to plan and review agreed maintenance and improvement works.
• The dispute resolution: Any disputes that arise will be dealt with constructively and in the spirit of this Agreement. If the dispute cannot be resolved at a local level within 14 days then it shall be referred to the respective Chair/President of the <group> and the relevant <Trail Manager> for resolution.
• In the unlikely event that a dispute cannot be resolved, then any of the affected parties may withdraw from the Adoption Agreement in writing
• Review their Adoption agreement prior to its completion.
• <insert further agreed communication and reporting structure as required>

7. Health and Safety

<Trail Manager> will:
• Provide departmental volunteer orientation and safety induction to the <Group> and its members that reflect the nature of the volunteer activities prior to any works commencing
• Provide appropriate policy, guidelines, regulations and forms pertaining to volunteering on <Trail Manager>-managed lands.
• <insert any further Health and Safety standards/conditions>

<Group> will:
• Ensure all volunteers have read and adhere to the <Trail Manager> code of conduct
• Carry out only agreed works as documented in accordance with the Adoption Agreement and associated plans
• Immediately notify the relevant <Trail Manager> ‘Adoption Liaison Officer’ or their nominated representative of any injuries, accidents or near misses that occur during any maintenance work
• Abide by all safety inductions and directions as part of the adoption. Volunteer workers are covered by the Occupational Safety and Health Act 1984 and the Occupational Safety and Health Regulations 1996
• Abide by any special conditions, terms, policies or regulations that have been set by the <Trail Manager> for the adoption (e.g. emergency closures, trail or area closures — dieback risk, fires, floods etc) and operational hazards (harvesting, prescribed burning etc)
• Encourage all volunteers to have formalised first aid training and carry a comprehensive first aid kit.
• <insert any further Health and Safety standards/conditions>
8. General Conditions

<Trail Manager> will:
- Provide a list of approved maintenance works the trail group can undertake without approval
- Provide maintenance standards.

<Group> will:
- Not undertake any unapproved trail work
- Not expect financial reimbursement for expenses occurred during trail maintenance work
- Not attempt to enforce any laws while on <Trail Manager>-managed lands, unless duly authorised.
  However may report details on perceived incidents.

All parties will:
- Adhere to the relevant trail standards
- Where appropriate jointly seek funding for project resources and training opportunities
- Follow the agreed <Trail Manager> Incident or Risk Management procedures. (Attachment X) (<Trail Manager> to provide)
- Bear their own costs of administration and management of activities undertaken in support of the Adoption Agreement, but may identify and implement those projects that the parties have agreed to jointly fund
- Agree that the adoptee will not have exclusive use of any land or facility and will not represent themselves as an agent of Parks and Wildlife or in any way purport to act on or behalf of the department.

Endorsement

This agreement is endorsed by the President of the <insert group name> and the <Trail Manager> Officer overseeing the adoption.

____________________________________  ______________________________________
<insert Organisation name>  <insert name>
President of the <group>  <insert role>, <Trail Manager>

Date: _______________________________  Date: _______________________________
Attachment 4: Maintenance schedule

Sample Trail Maintenance Inspection Schedule

<table>
<thead>
<tr>
<th>Maintenance</th>
<th>Frequency</th>
<th>Notes</th>
<th>Who?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Monthly</td>
<td>Quarterly</td>
<td>Annually</td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Car park</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Road surface and drainage</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is the road free from drainage problems e.g. pot holes?</td>
<td></td>
</tr>
<tr>
<td>• Signage</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is the signage in good condition?</td>
<td>✓</td>
</tr>
<tr>
<td>• General rubbish removal</td>
<td></td>
<td>As required</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is there litter in the area?</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Toilet</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Is it in good working order?</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Does the toilet require pumping?</td>
<td></td>
</tr>
<tr>
<td>• Check paper supply</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is paper supplied?</td>
<td>✓</td>
</tr>
<tr>
<td>• Inspect condition of structure</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is the structure free from damage?</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Trail head sign</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect condition</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is the structure sound?</td>
<td></td>
</tr>
<tr>
<td>• Check notices/maps</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Are trail notices up to date?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is the map accurate?</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Picnic tables/shelter</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect condition</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is the structure sound?</td>
<td></td>
</tr>
<tr>
<td>• Check notices/maps</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Are trail notices up to date?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is the map accurate?</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Roads (e.g. shuttle or connector roads)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Road surface and drainage</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is the road free from drainage problems e.g. pot holes?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Does the road require grading?</td>
<td>✓</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Frequency</td>
<td>Notes</td>
<td>Who?</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------------</td>
<td>----------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>Monthly</td>
<td>Quarterly</td>
<td>Annually</td>
</tr>
<tr>
<td><strong>Signage</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect condition and location</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tread</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Surface</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Drainage</strong></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Technical Trail Features</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect condition</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Fall zones</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vegetation overgrown?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Check sight lines</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Check intersections</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Check trail corridor and overhead</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Check signs</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>