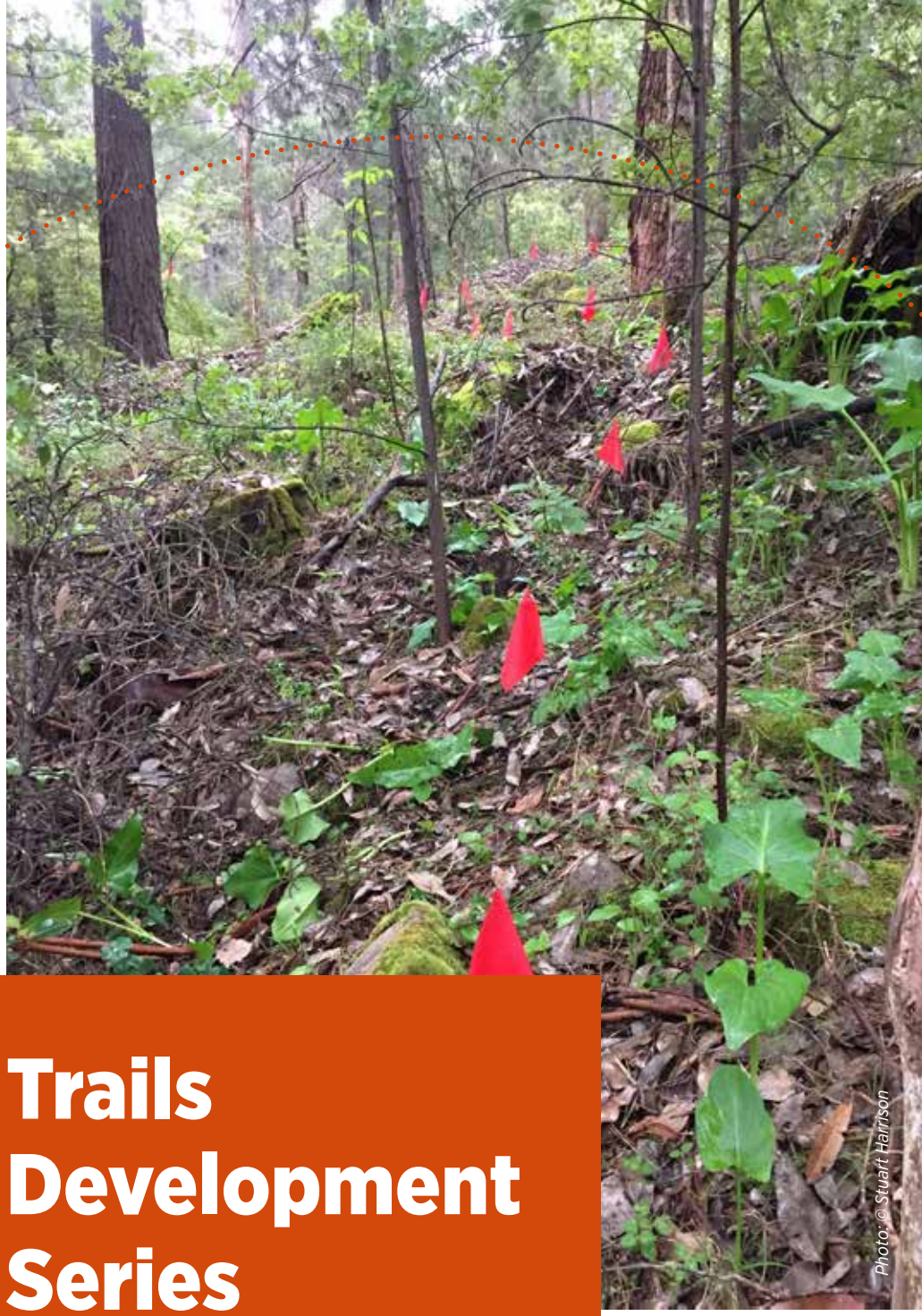

Photo: © Stuart Harrison

Trails Development Series

Part A: A Guide to the Trail Development Process

GOVERNMENT OF WESTERN AUSTRALIA

Department of **Biodiversity, Conservation and Attractions**

Department of **Local Government, Sport and Cultural Industries**

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Contents

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:

- 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 Ty, M., Centre for Sport and Recreation Research, Curtin University, Perth, April 2017.

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.

Photo: © Chris Tate

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.

Photo: © Common Ground Trails, Photographer Eerik Sandstrom

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 [1])

Values commonly associated with trails		
Environment values	**Social values**	**Economic values**
• Biodiversity • International significance • Landscape and visual amenity • Wilderness • Wetland/waterway	• Recreation • Education • Aboriginal heritage • Health and wellbeing • Nature interaction • Wilderness interaction • Local sense of place	• Basic raw materials • Public water resources • Tourism • Pay per use • Local employment • Mining • Management cost • Liability • Initial costs

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

1. Middle, I. Hughes, M., Middle, G. and Ty, 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

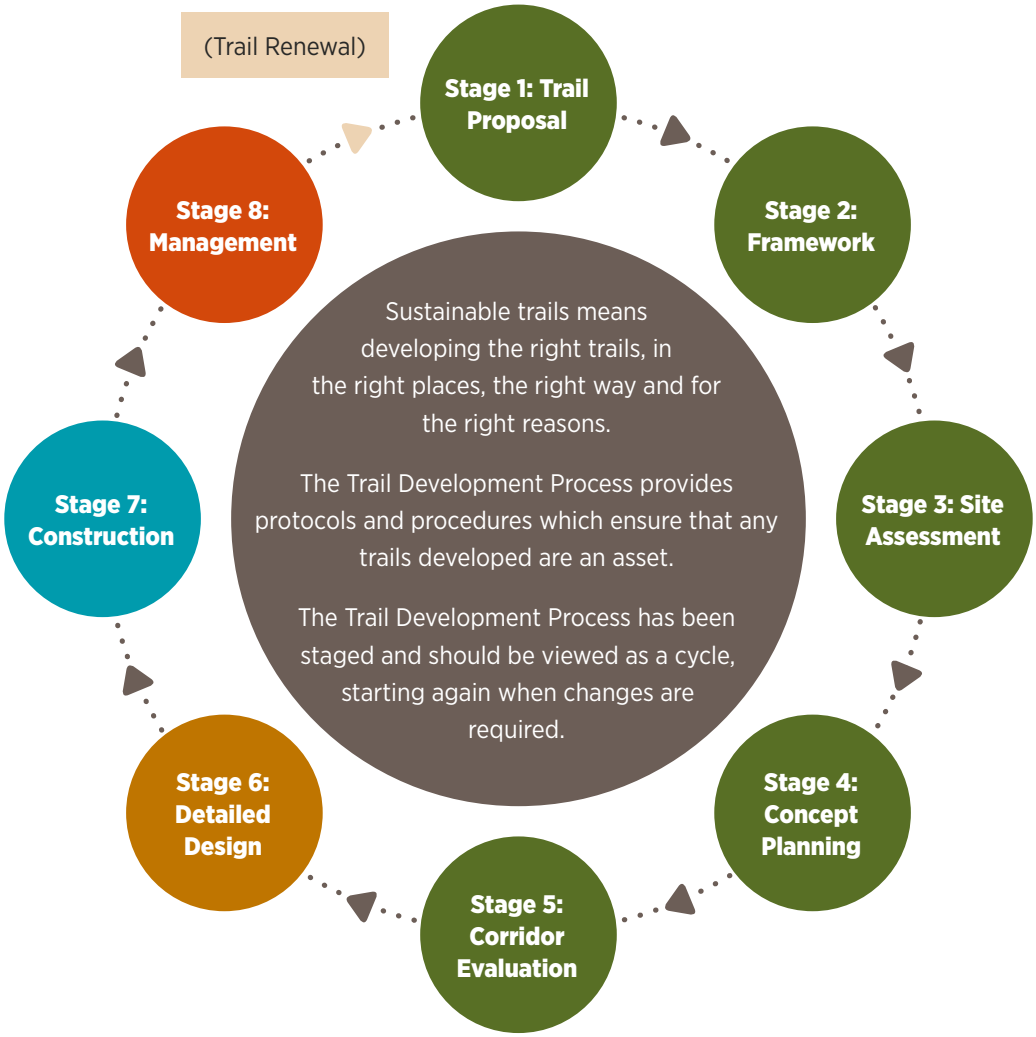


Table 2: Trail Development Process Summary

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.

Stage	Outcome	
1. Trail Proposal	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.	Desktop
2. Framework	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.	Desktop
3. Site Assessment	Broad-scale study of the area and identification of opportunities, constraints and characteristics such as soil types, vegetation etc.	Desktop
4. Concept Planning	Identification of opportunities and conceptual trail plan, including broad trail corridors and infrastructure requirements.	Desktop
5. Corridor Evaluation	Detailed assessment of trail corridors for use in determining the final trail alignment.	Field
6. Detailed Design	Detailed trail design and alignments physically flagged in the field. Includes detail on the trail classifications, technical trail features (TTFs), construction methods and specifications.	Field
7. Construction	Trail constructed in line with the Detailed Design.	
8. Management	Management plan implemented detailing maintenance and monitoring requirements.	

Photo: © Lawrence Greed

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.

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.

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 is 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.

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.

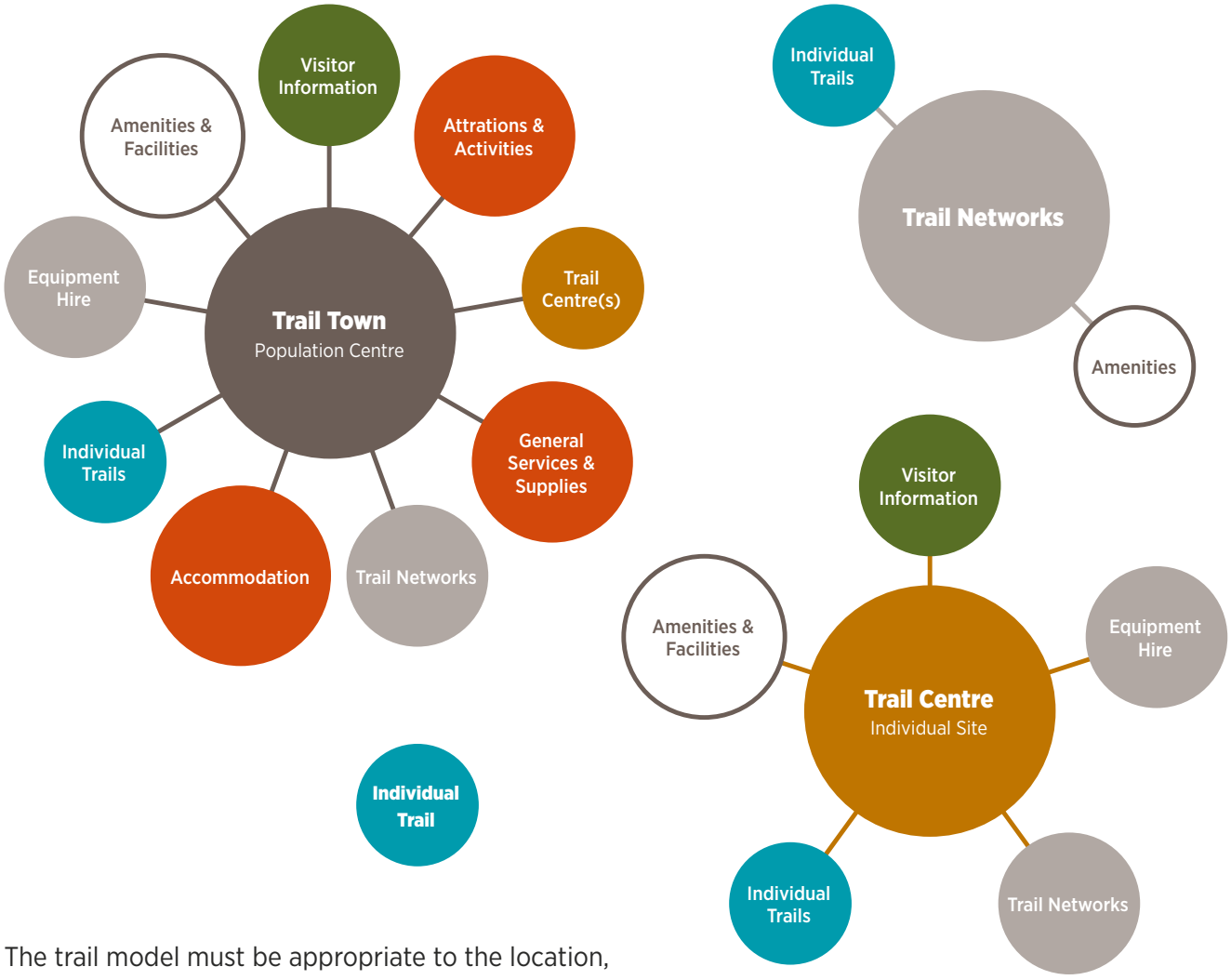
Defining the target market includes establishing and agreeing on:

- 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.

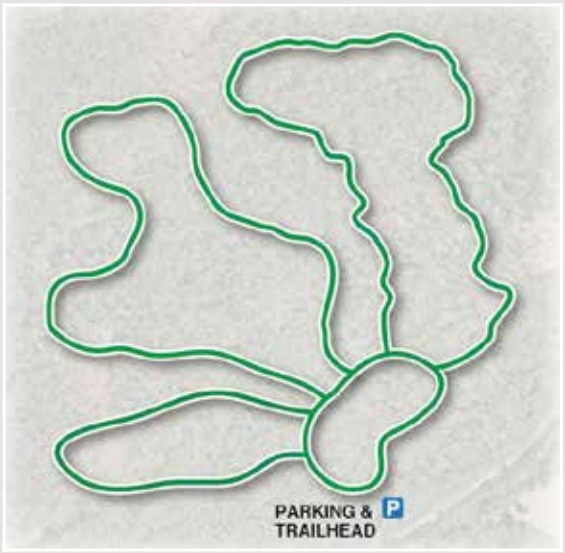


The trail model must be appropriate to the location, scope and scale of the project and clearly link back to the project goals.

Trail System

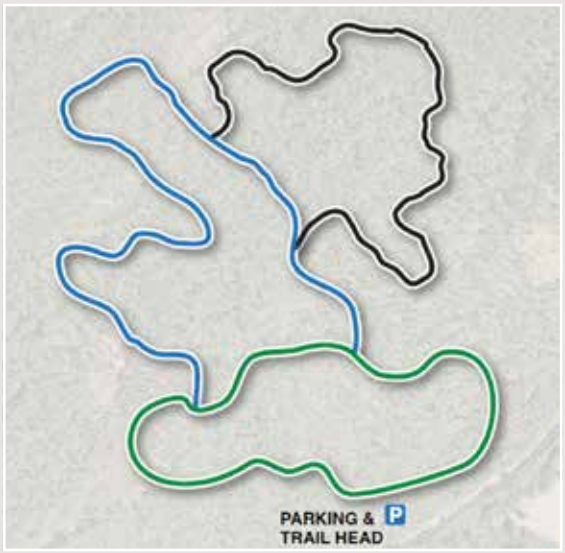
The trail system heavily influences all parts of the planning, design and delivery process. It defines the design, layout and configuration of the trails as well as the location, nature and extent of associated facilities and infrastructure such as car parking, toilets and trailheads.

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.

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.

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?

Photo: © Nature Play WA

- Evaluation data. Accurate data is required to ensure effective and appropriate project evaluation. Data is likely to be from both quantitative (for example: trail counters, visitor counts, and admission fees) and qualitative (for example: questionnaires, surveys, forums) sources. The framework should set out arrangements for data collection, record keeping, analysis and interpretation
- Evaluation timescales. When will evaluation take place? A project is likely to have a mix of shorter- and longer-term effects. Some will be evident during delivery or upon completion while others may only become evident over time e.g. after one month, six months, one year, five years etc. Ongoing monitoring is likely to be required to enable the project to be evaluated in perpetuity
- Evaluation roles. Who will evaluate the project? Evaluation which involves both the Steering Group and the project's users is likely to be the most effective. The framework should set out roles and responsibilities for undertaking data collection, record keeping, analysis and interpretation.

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

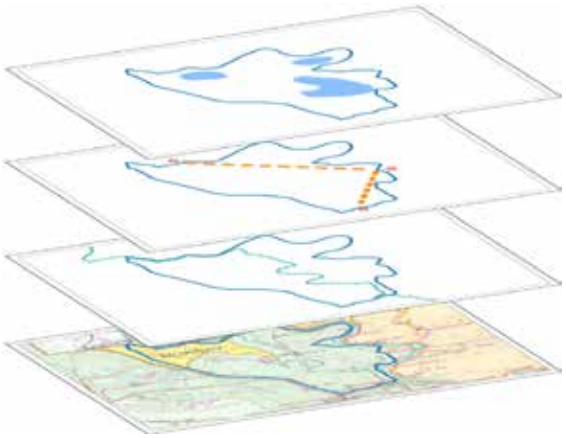
The purpose of the site assessment is to identify positive (opportunities) and negative (constraints) attributes within the project area. The site assessment builds on previous stages and is vital to ensure the land owner/manager complies with any legislative requirements and to ensure the project area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

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.



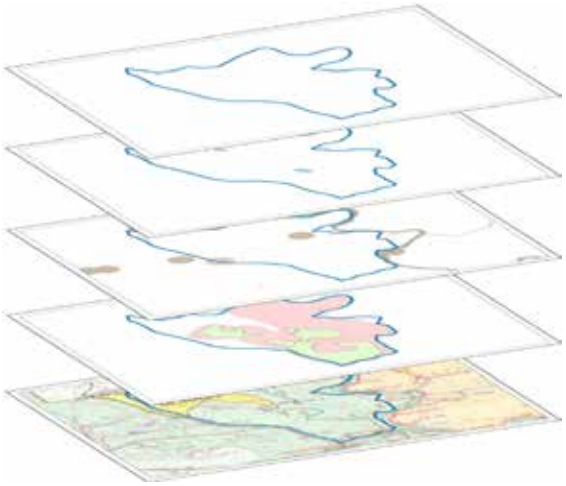
Opportunities

Positive attributes

Existing recreation sites

Existing trails

Base map



Constraints

Other Constraints

Flora/Fauna

Heritage

Hygiene

Base map

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)
- Seek approval from the Minister for Aboriginal Affairs via Section 18 of the Act or from the Registrar of Aboriginal Sites under Section 16 of the Act. In some cases, approval can take up to 12 months and there may be costs associated with archaeological and/or ethnographic surveys, reports and potential requirement of Aboriginal monitors.

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.

Photo: © Common Ground Trails, Photographer Eerik Sandstrom

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.

Photo: © Recreational Trailbike Riders Association

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.

Photo: © Lawrence Greed

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, ie. 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.

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

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.

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.

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.

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.

Photo: © Common Ground Trails, Photographer Eerik Sandstrom

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?

Photo: © Common Ground Trails, Photographer Eerik Sandstrom

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.

Notes

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GOVERNMENT OF WESTERN AUSTRALIA

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