Adventurous Spaces

A best practice guide for bringing roll and ride activities into public open space

Acknowledgment of Country

The Department of Planning, Housing and Infrastructure acknowledges the Traditional Custodians of the land and pays respect to Elders past, present and emerging.

We recognise Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to place and their rich contribution to society.

Artwork (above) by Nikita Ridgeway

Disclaimer:

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Cover image: Beaumont Hills Park, Beaumont Hills NSW, (NSW Government)

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Introduction

Embracing adventure enriches lives across all ages, but it holds particular significance for children and young people. Recall the exhilaration of riding a bike or skateboard – the rush of speed, the wind tousling your hair, the empowering sense of control, and the camaraderie that comes with mastering a skill.

However, in today's increasingly urbanised environments, finding safe spaces for these adventurous pursuits, is becoming more challenging.

Research underscores the many benefits of adventurous pursuits on our physical and mental wellbeing. These activities, not only cultivate balance, coordination, and risk assessment skills but also foster a deeper sense of community. The availability of safe, inclusive, and accessible spaces for such endeavours contributes to the collective health and happiness of society.

Adventurous Spaces has been prepared to assist those involved in shaping our public spaces – from urban planners and developers to landscape architects and the broader community. Its primary focus lies in cultivating environments conducive to skating, scooting, BMX, and mountain biking. While diverse in nature, these activities share a common thread: they ignite a spark of joy, excitement, and adventure in participants.

By implementing the principles and tools outlined in this guide, stakeholders can ensure that public spaces cater to the diverse needs and interests of their communities. Through thoughtful planning, design and management, we can create vibrant hubs where individuals of all ages can unleash their adventurous spirit safely and freely.

Together, let's pave the way where adventure knows no bounds and where every corner of our urban landscape invites exploration and discovery.

What are adventurous spaces

The guide focusses on wheeled activities defined as 'ride', including mountain biking and BMX on trails, pump tracks, and skills parks and 'roll' activities like skateboarding and scooting, which occur in skate parks and youth precincts. A

Top image: Federal skate park, Annandale, NSW (Matthew Duchesne © FancyBoy)

Pomingalarna Reserve, Moorong, Wagga Wagga, NSW, (Jack of Hearts Photography, Destination NSW)

parkour case study illustrates its integration within adventurous spaces. These adventurous activities are the focus of this guide as there is a high demand and are typically provided within public open spaces.

Other adventurous activities

The guide does not cover a range of activities such as abseiling, rock climbing, hiking, treetop walks, and zip lining, snow sports, motor sports or water-based activities. These activities require specialised equipment and guidance.

Public Open Space Strategy for NSW

Department of Planning, Housing and Infrastructure 2022

The Public Open Space Strategy for NSW aims to deliver more and better public open space. It sets out a collaborative, coordinated and evidence based approach to unify planning, investment and delivery.

Adventurous spaces are an important component of meeting the five key objectives within the NSW Public Open Space Strategy which include:

› Better recognition for public open space.
› Stronger First Nations involvement.
› Coordinated planning governance, policy and funding.
› Greater social, environmental and economic value.
› Better outcomes for regional NSW.

Adventurous Spaces can be seen as an extension of the broader landscape, which is considered a living entity for Aboriginal cultures. Respect for nature, sustainability and a harmonious relationship with the environment are important when creating an adventurous space.

Skate park, Narrabri, NSW
(NSW Government)

How to use this guide

This guide has been developed to advocate for and create exciting adventurous spaces, for people of all skill levels and abilities. This guide includes tools to support community engagement, technical information that assists in scoping a project and setting up a design brief, and tips for delivering successful adventurous spaces.

Developed in partnership with government and industry experts, the guide provides information, strategies and case studies to inspire the creation of adventurous spaces within public open space.

The structure of the document is set up to be used as a reference throughout a project from planning to management. The guide includes:

› Outline of the benefits of adventurous spaces.
› Guidance on the technical aspects of creating adventurous spaces and where specialist knowledge is required.
› Guidance on best practice when creating new adventurous spaces from planning to delivery.

Stakeholders

This guide has been created to help anyone involved in planning, designing, and delivering adventurous spaces. It involves a wide cross section of stakeholders, including:

› Councils and government agencies.
› Landscape architects and designers.
› Open space and recreation planners.
› Policy makers.
› Construction and asset managers.
› Community champions and sporting organisations.
› Non-government agencies.

Starting with Country

Public open space is an essential part of the cultural landscape, and provides Aboriginal people with important opportunities for connection, cultural practice and learning. Public open spaces are also important places for the 'Sharing of Country' between Aboriginal people, the Australian community and our visitors.

Country holds everything including spaces and places, even those in urban centres, are thus full of Country (Hromek 2018). Mountain bike trails, pump tracks and skate park facilities are no exception, therefore being located on Country should follow Starting with Country principles.

The Connecting with Country (Government Architect NSW 2023) offers a framework for developing connections with Country that can inform the planning, design and delivery of built environment projects in NSW. Improving the health and wellbeing of Country aims to help realise three long-term strategic goals:

› Reduce the impacts of natural events such as fire, drought and flooding through sustainable land and water use practices.
› Value and respect Aboriginal cultural knowledge, with Aboriginal people co-leading the design and development of all NSW infrastructure projects.
› Ensure Country is cared for appropriately and sensitive sites are protected by Aboriginal people having access to their homelands to continue their cultural practices.

Adventurous spaces are for everyone

Adventurous activities are mainstream

Adventurous spaces are for the whole community. Skateboarding or BMX were once considered fringe, now they're Olympic sports. This requires thinking beyond the stereotypes and perceptions about adventurous activities.

Some people see skate and BMX as high-risk, extreme and the domain of male adolescents. In recent years, we've seen participation increase, thanks to better quality facilities and the real desire to get active outdoors and in nature.

Up to 55% of people aged 12 years and over claim to have done adventurous activities in the past 3 years, with 74% of people stating they would like to participate more frequently. In Australia there are about 491,400 people who participate in mountain biking and 282,100 people in skating and more than 30% of them are in NSW (AusPlay 2022-2023). More than 13,500 people participate in mountain bike in NSW (Adventure Cycling Strategy, 2023). Riding and rolling are now mainstream.

Adventurous activities are as popular as traditional sports

According to AusPlay data (2022-2023), almost as many people participate in activities such as mountain biking (2.2%) and skating (1.2%) as Australian football (2.9%) and bowls (1.3%).

Almost half of participants skate or mountain bike weekly. By this measure, investment into quality adventurous spaces should be prioritised alongside what are considered more traditional sports.

Adventurous activities aren't as dangerous as it sounds

Research shows that adventure activities is not dangerous when carried out in well-designed spaces. Of all injury related hospitalisations for Australian children under 18 years, 8% are from team sports and 4% from wheeled non-motor sports such as skating, scooting, BMX and cycling.

When users know how to ride and roll, the risk of injury is reduced, while engaged users are less likely to take part in antisocial behaviour.

67% of people agreed the positive health benefits of adventurous activities outweigh the risks of injury. People indicated that while they know there could be the risk of minor injuries associated with adventurous activities:

› 46% would not change their behaviour.
› 39% would be more likely to personally participate and encourage others.
› Just 15% would be less likely to participate.

Adventurous spaces can be inclusive

Female participation in adventure activities is on the rise. According to AusPlay data (2022-2023), there are 1.3% of all males skate and 1% of all females skate. With the growing popularity of adaptive activities, more opportunities are being supported by the design of inclusive infrastructure.

Adaptive adventure cycling is a wonderful way for people with disability and limited mobility to experience outdoor adventure, have fun and challenge themselves.

Wheelchair users can enjoy the thrill of skating thanks to adaptive skating gear, which is designed to accommodate their mobility needs. In addition to the physical benefits such as improved strength, balance and coordination, wheelchair skating also offers social and emotional benefits such as social connection, increased self-confidence and sense of belonging.

Albury Skate and Active Recreation Precinct, Albury, NSW (Simon Dallinger)

Adventurous spaces Insights report

The Adventurous spaces insights report (2024) provides research into the benefits, barriers, myths, and best practices relating to adventurous spaces. It provides the insights needed to address the challenges in the delivery of high-quality public open spaces across NSW, including bridging the gap between local councils and community perceptions with regard to risk and play.

The insights presented in the report are based on:

› A literature review.
› A review of best practice NSW adventurous spaces case studies.
› The adventurous play survey of 1,450 NSW residents to provide insights into actual and desired participation in adventurous activities. The adventurous activities survey was conducted with people of all ages, abilities and cultural backgrounds across the state.
› Interviews with metropolitan and regional councils, industry stakeholders and academics relating to participation in adventurous activities.

Cred
Adventurous spaces
Insights report

The findings from the insights report have been integrated into this guide.

Meeting growing demand

People in NSW value public open spaces and demand for adventurous spaces is growing with increased participation in skate, scooting, BMX and mountain biking over the last five years. An increase in participation has created a strong demand for facilities such as skate parks, pump tracks and trails.

While people might think the main barrier to participation is fear of injury, this is not the case. The main barriers to participation are lack of time, feeling un-fit, and lack of facilities near to home (Adventurous Spaces Insights Report, 2024). Long travel times to adventurous spaces means less time to participate.

Where there is greater access to facilities, there are generally higher rates of participation. The survey found Sydney residents reported that recreation activities were not always accessible within a reasonable distance to home.

To meet growing demand of adventurous activities requires the planning, design and delivery of more welcoming and accessible adventurous spaces throughout NSW.

Greater Sydney Outdoor Study

NSW Department of Planning, Housing and Infrastructure

The Greater Sydney Outdoors Study (2019) was conducted to discover what Sydneysiders love to do during their recreation time. More than 6,800 survey responses were received to help understand what people like to do and how they use our great outdoors.

Benefits of adventurous activities

Connection with nature

Well designed sports facilities can be environmentally sensitive. Purpose-built and well-signposted adventure activities spaces can help to eliminate disruptive trail building. Participation in outdoor activities can also increases environmental awareness.

It can boost the economy

The development of ride and roll infrastructure has the potential to generate economic opportunities for nearby business through increased visitation. In some locations with particularly well designed facilities, visitors may stay longer or overnight to participate in riding or skating. This typically leads to increased spending contributing to local businesses or potentially new businesses emerging (such as new cafés, equipment hire, transport or coaching and guiding).

For example mountain biking activities alone support around 1,500 full time jobs in NSW, with $200 million of direct expenditure each year for the regional economy (Adventure Cycling Strategy, 2023).

It's good for you

Adventurous spaces provide an opportunity for physical activity with all the associated health and wellbeing benefits.

› It's good for skills development and creativity. Regular adventure activities builds risk-negotiation skills, problem-solving skills, cognitive development, resilience, self-esteem and social-emotional learning.

› It makes us happy. Adventure activities brings feelings of excitement, joy and freedom, which can have positive effects on mental health and wellbeing.

› It's social. Adventure activities is for all ages, genders, backgrounds and abilities. It encourages people to come together and share experiences, and builds social cohesion.

› It gets us outside. We live in an increasingly digital world, with only 35% of Australian children playing outside every day compared to 72% a generation ago. Adventure activities spaces can help to reverse this trend. (Adventurous Spaces Insights Report, 2024)

Risk and hazards

Adventurous activities have an inherent level of risk that appeals to those who seek a thrill and rush of adrenaline. By definition, a hazard is a situation that could potentially cause harm. A risk is the probability of the hazard being realised, considering the degree of harm caused and likelihood that an accident may happen.

The goal is not to remove risk from adventurous spaces which is what makes them appeal to their users. The goal is to manage hazards and reduce the severity and likelihood of risks to an acceptable level which can be achieved by preparing a Risk Management Plan with expert advice.

When people use adventurous spaces they are confronting and accepting an inherent level of risk of these activities. Incorporating a level of risk into play can lead to higher risk perception and risk management skills. This is important for learning and development, particularly in children and adolescents.

Managing risk

There are three main factors related to critical injury through adventure activities which include collisions and incidents with traffic, undertaking activities in inappropriate places (for example, near roads or water) and not wearing protective gear, particularly helmets (VISS & Monash University, 1997).

If an adventurous activity takes place in a well-designed space, free of hazards like cars and using protective gear, there's less potential for serious injury than in more mainstream sports and activities like football and soccer.

Accidents are also more likely when participants with lower skill levels attempt to use spaces designed for experienced users. (Sydney Children's Hospital Network, 2021).

Various ways of managing risk have been embedded in chapter 3 of the guide, through the planning, design, delivery and management steps for adventurous spaces.

Beaumont Hills Park, Beaumont Hills, NSW (NSW Government)

02
Adventurous spaces

This chapter provides information to assist designers, community groups and councils create exciting adventurous spaces. Information focusses on the technical aspects of roll and ride facilities which help in further defining the 'purpose' of the facility. For example, this information will help in understanding who the users are, what style of rolling and riding they prefer and the kind of features and obstacles they may use. This information will help in setting up a design brief.

Project case studies and practical examples are included to demonstrate lessons learnt. Successful adventurous spaces are beyond a 'kit of parts' and require careful planning and management, further detail on how to apply the principles are expanded in the next chapter in the guide.

Roll

Roll activities utilise a wheeled, non-motorised device within a skate park or the urban environment. This can include skateboards, scooters and bikes.

These roll activities are considered forms of recreation or transport; for some they are a career, an art form, a way of life or a channel for self expression. Different users have different identities and cultural needs, each also have different spatial needs.

Skateboarding and freestyle BMX are now globally recognised as legitimate sports by many governing bodies. With the key indicator being the inclusion of freestyle BMX and skateboarding in the 2020 Olympics.

To help demonstrate the difference between purpose built skate facilities and accompanying sports and activities, the following topics are covered in this chapter under 'roll':

› Different users, including skate, scooters, BMX, inline and quad skating
› Facility scales: small, medium and large
› Different styles: bowl and transition; street and urban; combination street and transition
› Features for each style

Ride

Mountain bikes first appear in the 1970's. In 1981, the first line of mass produced mountain bikes were sold to consumers.

It wasn't long after that mountain bikes began arriving on Australian hill sides. Today, mountain biking trails have been joined by pump tracks and skills parks that offer more diverse and inclusive riding choices. From tiny tots on their first balance bike or scooter through to seasoned professionals tackling the most challenging downhill run, biking trails and parks are much-loved adventurous spaces for a wide cross-section of the community.

Different ride facilities are developed for a variety of users. The following topics are covered in this chapter under 'ride':

› Different settings: mountain biking trails, pump tracks and skill parks
› Different users, including mountain bike and BMX
› Mountain bike trails, styles and features
› Pump track styles and features
› Skills park styles and features.

Top image: Pomingalarna Reserve, Moorong, Riverina NSW (Jack of Hearts Photography, Destination NSW)

Carlingford Skate and Youth Space, Carlingford, NSW (Convic)

Adventurous spaces

There are a variety of settings typically used by those who roll and ride. In many instances users may visit multiple adventurous spaces depending on their skill level and preferences. For example BMX and scooters can use a skate park as well as pump track skills park. The following settings have been explored in this chapter under roll and ride:

Roll

Skate park

An outdoor area equipped with structures and surfaces for roll activities. Allowing enthusiasts to practice and showcase their skills. Skaters, scooters, BMX, inline and quad skating use skate parks.

Skate urban plaza

A facility integrated into urban environment, often featuring street style obstacles. Providing a more realistic and varied environment for skaters, scooters, quad and inline skating.

Youth precincts

An open space that is designed to cater to needs and interests of young people. It can be integrated with roll or ride facilities and provides a diverse range of activities.

Ride

Mountain bike park

Typically found within the bush and utilise the natural slope to provide a fun, challenging, and rewarding experience while also providing an opportunity to be in the natural environment.

Pump track park

A recreational facility where users travel through a closed circuit of rollers and berms that allow them to 'pump' through with very little pedalling.

Skills bike park

Typically designed in a loop with possible alignments for different ability levels, it may have engineered structures combined with natural features to create the desired riding experience.

Images clockwise from top left: Meadowbank Outdoor Youth Space, Meadowbank, NSW (Convic); Federal park, Glebe, NSW (Matthew Duchesne© FancyBoy); Beaumont Hills Park, Beaumont Hills, NSW (NSW Government); Auston Hill Bike Playground, Auston Hill, TAS (Trailscape); Boronia Bike Track, Hunters Hill, NSW (Matthew Duchesne © FancyBoy); Dungog Common MTB trails, Dungog, NSW, (NSW Government)

Roll

There are different skate facilities which allow for a variety of different users, experiences, styles and preferences. These facilities sometimes cater for local or large-scale events. The type and size of the facility is dependent on community needs, budget and site constraints.

Some of these spaces might focus purely on skate and others are designed to appeal to a more diverse range of interests allowing for the inclusion of activities, typically within youth precincts. These spaces could include features which cater for parkour, table tennis, half-court basketball, bouldering, climbing, freestyle dancing, play and hanging out. Skate facilities integrated with youth precincts tend to allow for a range of different riding styles.

Skate can also provide support facilities, especially for those who do not wish to participate but still want to watch or be a part of the social aspect, as well as encourage users to stay for longer. These facilities can include seating, picnic tables, barbecues, toilets, showers, accessible facilities, family facilities, kiosk, shade areas, water fountains and consider emergency services access.

Different users

There are many different types of users who seek out different rolling experiences.

Skateboarding

Skateboarding generally has 3 disciplines: street, park and transition, each providing different challenges and ways of riding. According to AusPlay 2022-2023, 179,300 of all Australians over 15 years participate in skate and 21,200 of Australian children participate in organised skate out-of-school annually.

Scooters

Scooters have taken on various shapes and configurations. The 'razor', introduced in the late 1990s, is often seen at skate parks. Some scooter riders from the 1990s have now become adult or even professional riders, with further demand placed on providing purpose built facilities.

Freestyle BMX

Freestyle BMX uses individual jumps and tricks in 5 disciplines: street, park, transition, dirt and flatland. These involve technical manoeuvres or 'tricks' with the bike over varied terrain. Most BMX use in skate parks is freestyle.

Inline skating

Freestyle inline skating or roller-blading sees users wearing shoes or boots with a line of 3 to 5 wheels in both the urban environment and skate parks.

Quad skating

Quad skating or roller-skating, particularly freestyle skating, has become popular in recent years. Freestyle skating is similar to skateboarding. Tricks are performed in the urban environment or within a skate space.

Case Study

Meadowbank Outdoor Youth Space
Ryde / Wallumedegal Country

The organic form of the pods within the Outdoor Youth Space take inspiration from the Parramatta River mangrove forests and the native animal species. The facility centres on a flowing skate area that includes a competition level kidney bowl, technical mini bowl with escalating level changes and a spacious open flow street area allowing users to define different paths through the space. Obstacles include granite ledges, jumps and garden gaps. A continuous organically

shaped asphalt pathway encloses the skate park, forming a track for beginners to connect between the recreation pods. These pods include activities such as parkour, bouldering, table tennis, informal play and BBQ/picnic facilities.

Achieving success in the project heavily relied on community consultation and having dedicated, supporters.

Supporting infrastructure

Site selection: Located adjacent to transport connections to maximise benefit of passive surveillance. Adequate consideration is given to proximity of surrounding residents with buffer planting.

Parking: Adjacent car parking to cater for increase in activation of the space.

Shade: Including shade structures and tree canopy can provide up to 75% protection from UV radiation from the sun and decreases the heat exposure for park users.

Lighting. To extend use throughout the year.

Toilet building. Located nearby to support family use and enable longer visitation times.

Supporting spaces: Area for spectators encourages families to use the space.

Signage. Clear and effective signage to encourage good user social etiquette.

(Photo: City of Ryde)

Meadowbank Outdoor Youth Space is a large scale facility with a total size of 2,500m2, in 2020 this park attracted up to 1,100 users per day.

Landscaping considers vegetation protection on the first day to allow plant establishment.

Bowl transitions and spines. Skate park features to cater to a variety of roll experience for different user skills and levels.

Youth spaces. Obstacles, parkour, climbing facilities allow people of different age groups and skills to participate in a variety of activities.

Loop path. Provides dual use with a children's cycle track to encourage a range of users.

Retain existing tree and buffer planting.

Roll facilities: size and scale

Skate parks can be large or small, and designed to cater to different skill levels and styles of skating. Not all skate parks will be able to cater to different styles and skill levels, small facilities may focus on one style while a large facility may have a range of styles for all skills levels. The objective of a network of roll facilities would be to provide access to a range of styles and skill levels.

Skateable elements are an emerging way of introducing skate into public spaces in a way that encourages diverse use. Temporary and pop up spaces are also a way to test the suitability of a space for skate users.

Small-scale facility

Rolling area of less than 800 m²

A small-scale facility usually caters to a local suburb or community with a smaller catchment area that can be accessible by walking, especially those who can't reach a larger facility easily. Ideally, a local facility is located near other recreation areas that offer different recreation opportunities. And often focus on specific user groups, targeted to beginner and intermediate

Glenwood Skate Park, NSW (Blacktown City Council)

Medium-scale facility

Rolling area of 800 - 1,200 m²

A medium-scale facility allows different users from several suburbs to participate in a select number of activities. There may be more than one mid-scale facility within a council area as part of a network of complementary facilities that provide a diversity of choice. And often cater for skills development and bigger catchment area.

Ballina Skatepark, Ballina, NSW
(NSW Government)

Large-scale facility

Rolling area of more than 1,500 m²

Large facilities provide ample space, a range of activities and places for those watching, relaxing and socialising and can spend their time for half or entire day. They are the key focus in a council area, provide a variety of activities and supporting infrastructure and amenities to attract people from a wider catchment area.

Meadowbank Outdoor Youth Space, Meadowbank, NSW
(Convic)

Different styles: bowl and transition

Bowls are made up of a series of vertical curved surfaces known as transitions. These transitions can vary in height and style to create different experiences for the user. For instance, a higher transition requires more speed and precision to manoeuvre from edge to edge, while a lower transition requires less speed and is better suited to those wanting to develop their skills.

Bowl skating provides the 'wow' factor for spectators as it is often fast-paced, involves a lot of air tricks, and are capable of holding competitions and events. Bowls in outdoor areas are generally made of concrete with steel, granite or concrete top edging.

Flowy transition

A flowy transition facility consists of open-ended bowls and skate obstacles that join together to allow users to flow between the separate zones without interruption. Typically it is a fast-paced facility that allows multiple users of varied skill level to share the space at the same time.

St Kilda Skate Park, St Kilda, VIC

Deep bowl

Deep bowls are designed as an enclosed space within a skate park. They are made up of steep walls and deep connected transitions often with vertical portions allowing high speeds for one or two users at a time. The top edge (or coping) provides a continual ribbon around the upper edge of the bowl where advanced tricks are focused. This style of facility originated from skating empty backyard swimming pools in California in 1960/70's.

Adelaide City Skate Park, Adelaide, SA

Mini bowl

Mini bowls can come in many shapes and forms and are often a smaller version of deep bowls. They are made up of low transitions with a variety of transition obstacles to encourage creativity within the space. Mini bowls typically cater to all skill levels from beginner to advanced and can facilitate multiple users at the same time.

Meadowbank Outdoor Youth Space,Meadowbank, NSW
(Images: Convic)

Bowl and transition features

There are many types of skate obstacles that can be used in your skate facility. Here are some features to think of and discuss with your community and a design specialist.
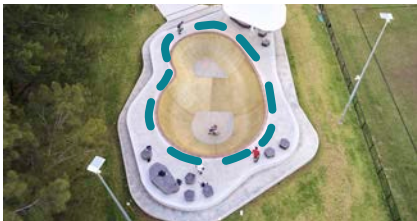
**Bowl.** A skate feature resembling an empty swimming pool.

Box jump. An obstacle consisting of two or more ramps placed parallel to each other, with a gap in-between them for riders to jump over.
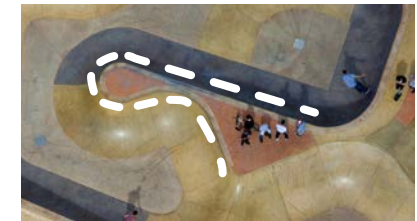

Columns. A vertical cylindrical structure to ride, grind or perform other tricks on. Typically made from concrete or steel.

Mini ramp. A feature similar to a halfpipe, but has a smaller overall size and less steep transitions.
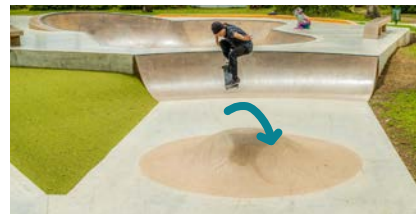
Mogul. A bump in the surface of a skate park that allows riders to ride, jump over or change direction.

Peninsulas. A feature that juts out into a skating area, often in the form of a raised platform or obstacle.

Coping. The top edge of a bowl or ramp, providing a smooth edge for riders to grind and slide along. They are usually made from metal, concrete or granite.
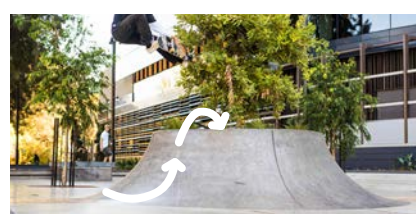

Cradle. A feature that resembles a circular bowl, with one end typically transitioning into a smaller bowl.

Doorway. An obstacle designed to resemble an opening or entrance to a building. Riders may use it for a variety of tricks including grinds, slides and airs.

Small quarter pipe. A ramp that is less steep than a regular quarter pipe.

Volcano. A type of obstacle that features a central hump or peak surrounded by steep walls on all sides, resembling a volcano shape.

Vert walls. A type of ramp that features a nearly vertical transition.

Extensions. Features that are added onto the edge of a ramp or bowl to increase the height and steepness of the transition.

High quarter pipe. A type of quarter pipe that has a steep ramp and high coping.

Hips. A hip is the corner of a bowl or ramp. Riders can use it to transition from one feature to another.

More features to consider:

Deep bowl. A bowl with steep walls and deep transitions.

Flow. The ability of a rider to smoothly and seamlessly transition between features and obstacles.

Halfpipe. A type of ramp that has two sides that are curved like a 'U'.

Mini bowl. A smaller version of a full-sized bowl that has a shallower depth and smaller radius.

Transition. Refers to the curved shape of a ramp or other feature that allows riders to generate speed and momentum.

Quarter pipe. A type of ramp that is similar to a halfpipe, but only has one side curved like a 'U'.

Spine. A feature that consists of two opposing quarter pipes or halfpipes that are connected by a central spine. The spine has a central flat section which allows riders to transfer back and forth between quarter pipes or halfpipes.

(Photos: Convic)

Different styles: street and urban

Street skating uses urban features like stairs, handrails, benches or kerbs combined with smooth, flat spacious concrete areas. Street style provides an opportunity to explore materials that reflects the urban realm such as paving, brick, granite and timber. Street skating is often a slower pace and more technical with multi-purpose obstacles for a range of users.

Urban plaza

Urban plazas are typically larger flat areas with a variety of street obstacles that are well spaced out and can often be skated as standalone features. Plazas designed for skating are influenced by features included within the urban realm. These spaces often use materials to differentiate them from other street skate typologies.

Skate drain

Skate drains can be designed into skate parks or found within the urban environment, influenced by historic trends of riding urban drainage infrastructure. Drains are generally banked linear spaces incorporating obstacles that line the edges. Users generate speed on banks and perform tricks as they criss-cross through the space. Skate drains are enjoyed by all skill levels.

Street skate park

Street skate parks typically include large flat areas with banks or quarter pipes at either end to allow the user to return in a back and forth direction. Between the two ends, riders can flow between obstacles while maintaining speed. These facilities can be set up for competition and often will have a variety of features that allow for skill progression.

There are different types of street skate facilities. Some can be found in the urban realm and some are destination facilities but do not consist of bowls or traditional typologies. Consider the styles below.

South Eveleigh Youth Space, Eveleigh, NSW (images: Convic)

Jurien Bay Skate Park, Jurien Bay, WA

Pizzey Park Skate Park, Miami, QLD

Skate in the urban landscape

Some users prefer to use unstructured features in the urban environment as opposed to skate parks.

The urban landscape can be skate-friendly, using elements such as walls, seating, stairs or rails and open flat spaces instead of introducing skate deterrents. This is achieved through careful planning and design to allow multifunctional urban spaces. The urban landscape can then evolve into destination spaces that are popular, vibrant and active where skating can also be seen as a spectator sport, breaking stereotypes of skate being an underground culture.

Case Study

Federal Park Skate Park
Glebe / Eora Country

A unique inner-city skate plaza, Federal Skate Park is built to celebrate the heritage-listed light rail brick viaduct that dissects the site. It is now a highly activated and dynamic entrance for the broader redevelopment of Federal Park.

With a total size of approximately 2,000m², Federal Park is defined as a large-scale facility. In 2022 this skate park was attracting approximately 800 users per day.

Sense of place

Site-specific design: the skate features, textures, material palette and skate moments that weave under the railway bridge make for a one-of-a-kind experience while paying homage to the site's history.

Celebrate the heritage value: the site was designed and built to embrace the heritage listed light rail brick viaduct that dissects the site.

(Photo: City of Sydney)

Site analysis and contamination assessments: the site was contaminated due to historic land uses; as such the existing concrete slab was left to remain as a capping layer.

Supporting facilities: seating and lighting are provided, it is part of the significant urban renewal redevelopment of Federal Park.

Street and urban features

There are many types of skate obstacles that can be used in your skate facility. Here are some features to think of and discuss with your design specialist.

A-frame. An obstacle that resembles the letter 'A' and consists of two sloping surfaces that meet at a point, usually with a flat surface between them. They may have additional features like rails or ledges.
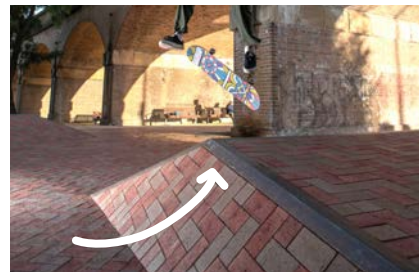
China banks. Banks that have steep, rounded or flat walls. The name comes from the fact that the first "China bank" was reportedly built in San Francisco's Chinatown district in the early 1990s.

Down/out rail. A combination of a down rail and an out rail. It consists of a straight rail that slopes downward with a flat section at the top parallel with the ground.
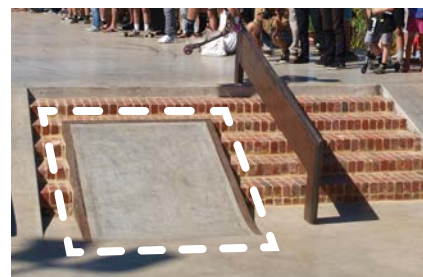

Euro gap. A gap or a void between two platforms, which are typically at different heights. Skaters can launch across the gap to the other side.

Garden gap. An obstacle that is designed to simulate the experience of jumping over a natural gap or void. Typically filled with rocks or plants.

Hubbas. An angled ledge that typically is located next to steps or banks.

Jersey barrier. Reflective of the Jersey Barrier invented in the US to divide vehicle lanes, the vertical feature has angled sides and is wider at the bottom than the top.

Flat banks. A sloping ramp with a flat surface at the top. The ramp is typically curved at the bottom and may be single or double-sided.

Flat bank hips. Similar to flat banks but have an additional angled section that extends off one or both sides of the ramp. The angled section creates a hip-like shape and allows riders to launch off the ramp and perform tricks, or change direction.

Kerb. A type of obstacle that simulates the edge of a street curb. It consists of a raised, rectangular platform.

Kerb rail. An obstacle that combines the features of a kerb and a rail. Made up of a metal rail that is mounted on top of a kerb.

Kicker to kicker. Two inclined ramps, or kickers, placed facing each other to launch the skateboarder into the air and perform tricks between the two ramps.

Ledges. An edge, or ledge, found on stairs or other elevated areas, and are used for grinding and sliding.

Manual pads. Flat or slightly curved platforms that are used for 'manual' tricks, like nose manuals and wheelies.

Pole jam. A small rail feature that protrudes from the ground at an angle.

Rails. Rails of different heights and shapes can be used for grinding and sliding.

Stairs. Skaters use stairs with varying number of steps to ride down and perform tricks.

Wall ride. An obstacle that involves riding up the face of a vertical wall, using it as surface to perform tricks.

Flat bars. A straight bar that is parallel with the ground. Can be a circular or square rail.

Pyramid. An elevated platform with ramps on all sides.

More features to consider:

Banks. A sloped transition that typically has a curved shape, similar to a quarter pipe, but with a flat surface.

Down rail. A straight rail that is inclined downward from one end to the other. Typically located on stairs or banks. Rail can be circular or square.

(Photos: Convic)

Different styles: combination street and transition

Combination skate parks contain street, bowl and transition obstacles and appeal to different riding styles. These facilities often require a larger footprint and budget. They typically cater to all skill levels and are the most common skate park, as they offer the community a bit of everything.

Traditional

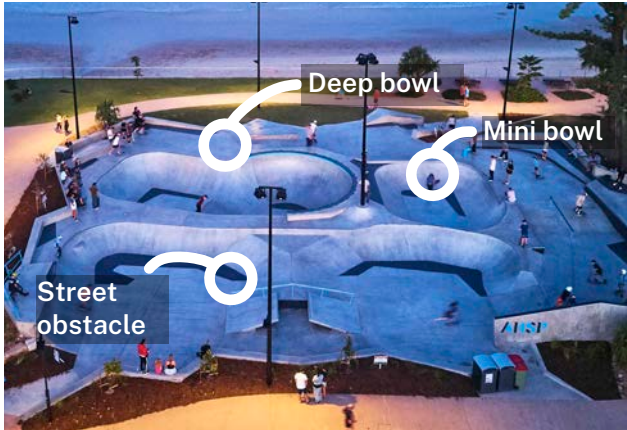Traditional parks are often large spaces of concrete and include obstacles from both street and transition or bowl styles. Users can ride the entire park as one and flow between all obstacles and spaces.

Deep bowl

Mini bowl

Street obstacle

Alexandra Headland Skate park, Alexandra Headland, QLD

Separated street and bowl

Separating the bowl and street areas within the one facility allows for the skate park to appeal to a range of riding styles. The bowl is often fast-paced and functions better as a standalone feature. The street area often forms a connection to the bowl platform by using the level change as a starting point. Hang out areas are centrally located to overlook both zones.

Street

Bowl

Saint Clair Youth Precinct, St Clair, SA

Flowy street

Flowy street facilities are typically skated at a higher speed than regular street skate parks, as obstacles are closer together and within a contained skate facility. Transition features are included within the design to encourage flow between street obstacles and offer a variety of ways to skate. These facilities are often skated as one open park and can result in conflicting skate lines during busier times of use.

Holborn Skate Plaza, Wollongong, NSW
(Images: Convic)

Case Study

Sydney Park Skate Park
Alexandria / Eora Country

As one of the largest skate parks in Australia, the design was developed through an extensive community consultation process that helped shape a contemporary design that forms a key youth activation component within the wider Sydney Park master plan.

Meet competition standard

Sydney skate park caters to all skill levels and includes an Olympic specification competition bowl, mini bowl, multifunctional 'skate drain' and a surrounding street path to provide a 150 metre run. Sydney Park Skate Park is a large scale facility with a total size of 3,000m^2, attracting over 1,512 users per day in 2022.

(Photo: City of Sydney)

Supporting infrastructure. Shade, seating and lighting are provided for users and spectators.

Stairs Skate park features can also be user access points.

Multiple skate features Park provides a variety of features that allow more experienced users to perform tricks.

Carpark Adjacent parking provides ease of access and passive surveillance.

Site analysis and contamination assessments: built on an old tip, ground remediation works were undertaken to mitigate any contamination.

Ride

There are different settings for ride facilities which allow for different styles and preferences, such as mountain biking trails; pump tracks and skills park. These activities are open to everyone in the community and typically attract a range of users and abilities.

Supporting facilities are often required to support the facility, especially for those who do not wish to participate but still want to watch or be a part of the social aspect, as well as encourage users to stay for longer. Supporting facilities can include: parking and toilets, picnic shelters, drinking water stations, kiosk, bike repair or rental services and emergency services access. Clear signage is also useful for bike trail users.

Different users

Both mountain bikes and BMX riders use ride facilities. Scooters and skaters can also use pump tracks and skills parks.

Mountain bike

Mountain biking is cycling off-road on a variety of unsealed terrains and natural settings. Users look for an intimate connection with nature through purpose-built trails with natural obstacles such as trees, rocks or even man-made structures to offer greater challenges.

Modern mountain bikes are robust, with wide tyres, suspension and an upright riding position. There has been a huge uptake in recent years of E-bikes which are motorised, pedal assisted bikes usually used as an alternative for those seeking longer distance trails.

BMX

BMX bikes are generally not used on trails but are better suited to specialised facilities like skate facilities, pump tracks, skills tracks and competition spaces. BMX bikes have smaller wheels and lighter frames than mountain bikes to allow the user to perform stunts and tricks.

Glenrock mountain biking trails,
Glenrock State Conservation Area, NSW
(Destination NSW)

Case Study

Eden Mountain Bike Hub
Eden / Yuin Country

In 2019 bushfires severely damaged the NSW South Coast, with Eden being no exception. Before the fires, local volunteer group 'Eden Trail Committee' had been working on a plan to bring mountain bikers to Eden. World Trails and Eden Trails partnered with Lucid Economics to develop a business plan and seek funding. They received funding through the Bushfire Local Recovery Fund; $25k for analysis and $4.2m for planning and construction. Stage 1 included 56km of new trails, and stage 2 is proposed to have another 50km+.

Economic benefits

New facilities can increase tourism and boost the local economy. An economic impact study by Lucid Economics found that, once fully developed, the Eden MTB Hub will attract 22,500 visitors, 60,000 visitor nights and generate $9.9m in new visitor expenditure.

Trails can revitalise unused spaces, its worthwhile to undertake analysis and a business plan for a new large facility.

Adventurous biking has high tourism potential

Adventure tourism allows people to travel and explore a new area while having unique and challenging experiences.

An AusCycling analysis of the Australian adventure tourism market size indicated it was valued at $22.37 billion in 2019 and is estimated to reach the market value of $33.519 billion by 2027.

› On average, mountain bike riders spend $2,282.90 annually (approx. $27.10 per person) when they go mountain biking on local trails.
› Based on AusPlay participation rates (341,900 participants), mountain biking participants directly spend $630.8 million and support a total of 6,095 full-time equivalent employees annually through riding at local trails.
› Mountain bikers contribute significantly to their local and Australian economy through larger annual purchases such as new bikes and equipment, as well as supporting the tourism industry through intra and inter-state mountain biking travel.

AusCycling, GHD Advisory, 'Mountain Biking in Australia: An Economic and Participation Analysis', March (2021)

(Photo: Contour Works)

Mountain biking trails

Mountain bike trails are purpose-built unsealed tracks for mountain biking. Trails can be designed to pass through existing natural settings or as fit for purpose new facilities. Trails offer an opportunity for off-road adventure that can involve thrilling descents and challenging obstacles, as well as provide the rider with an immersive experience in the natural environment.

Trail network scales

Trail difficulty can be increased or decreased to adapt to challenges and experiences sought by riders. Differences of scale each present unique opportunities, a network of trails should consider providing a range of types of trails and allow for skill progression from beginner to more advanced.

› **Local.** Riding length is between 15 km and 40 km. These networks are usually close to residential areas and are used regularly throughout the week, with higher use on weekends. They are often maintained by volunteer groups or clubs and may be used to host race events, skills clinics or other fundraising activities.

› **Destination.** Riding length is more than 80 km. This larger network of trails encourages multi day visitation and tourism, day visitation and tourism. These trails are sometimes linked to other attractions such as historic or cultural places. They require surrounding infrastructure and services to accommodate overnight visitors. A trail destination sometimes has other facilities such as pump tracks and trail head amenities for junior riders and spectators. The site could accommodate national or international-level trail events with the possibility for expansion.

Trail difficulty rating systems:
An international standard

The International Mountain Bicycling Association (IMBA) has developed an internationally recognised Trail Difficulty Rating System (TDRS) which classifies a trail across 7 categories based on its physical attributes and challenges, not on the level of exertion or fitness required.

Manly Dam, Manly Vale, NSW
(Destination NSW)

Mountain bike trail styles

There are different types of mountain bike trails that offer different experiences for mountain bike users.

› **Cross country.** Primarily a single-track that mostly uses the natural slopes of the landscape for climbs and descents. They can have varying levels of difficulty and can hold competitive events. Riders use lightweight bikes.

› **All mountain.** Primarily a single-track with greater emphasis on technical descents and non-technical climbs. They can hold competitive events. Riders use lightweight bikes.

› **Downhill.** Descent-only trails that generate high speeds and require high-skill level riders to achieve challenging technical skills. There are also green (easy) level downhill trails for less experienced riders. Downhill trails usually require a chairlift or vehicle shuttle to the top.

› **Flow.** Flow trails contain banked turns, rollers and various types of jumps on consistent and predictable surfaces. There are no abrupt corners or unforeseen obstacles. Suitable for light-medium weight bikes.

› **Gravity/Enduro.** A focus on steep, fast and technical descents. Suitable for timed events. These trails appeal to experienced riders who enjoy technical descents and are happy to ride back to the top of the trail. Suitable for medium weight and long travel bikes that are built for strength.

› **Freeride.** Descent trails focused on technical skills on both built and natural terrain with technical features including drops and jumps. They appeal to experienced riders and caters for competitions that judge a rider's maneuvers and skills. Suitable for medium weight and long travel bikes that are built for strength.

› **Touring.** Long distance riding on reasonably consistent surface conditions and lower grades. Touring trails are dual direction linear trails or long-distance circuits where riders are aiming to reach a destination.

› **Four cross.** A competition circuit that consists of a start line sprint, jumps, berms, and constructed features on a down slope. This style of trail is for timed races that consist of four competitors shoulder-to-shoulder. A spectating area is required.

› **Cyclo-cross.** A mix between road cycling and mountain biking and is typically a competition style trail. A high percentage of trail should be visible to spectators with obstacles such as logs and staircases.

› **Park.** Built spaces where riders can develop their skills and perform stunts. They can cater to a wider range of skill levels and also be used to hold competitions and events. Park spaces include pump tracks, skills tracks, parks, etc.

› **Rail Trail.** They are tracks that are mainly used for walking or cycling and are either partly or entirely built on a disused rail corridor. A Rail Trail is preferably developed on – or closely follows – the path of a former railway line for most of its length. Further information can be found at NSW Rail Trails Framework by Department of Regional NSW (2022)

Case Study

Bantry Bay Mountain Bike Trails Garigal National Park / Garigal Country

This was the first purpose-built trail exclusively for mountain bikes in a national park in NSW. It has 2 trails at maximum 600 mm wide. The aim was to provide sustainable, fun and technical trails that would help reduce illegal riding in the national park. This MTB-only trails are desirable to MTB enthusiasts.

The area is home to many plant and animal species and is also a significant Aboriginal site. Several thousand-year-old engravings have been found in the vicinity.

Sustainable materials

The trails were built by hand through sandstone country and the stonework, using solid and crushed sandstone maintained a natural look.

Natural features were used along the trail. No mature trees were removed, and all locally sourced materials were dropped off by helicopter during construction.

Minimise environmental impacts. FRP (fiber reinforced polymer) bridging and stone armoured sections used where the gradient was deemed too steep.

(Photos: TrailScapes)

Mountain bike trail features

There are many types of trail features that can be used in your mountain bike trails. They are often dependent on site conditions and take advantage of existing natural features. Here are some of the trail features to think of and discuss with your community and design specialist.

Berm corner. A bermed corner has a banked outer edge that runs the entire length of the corner to support the rider as they turn.

Drop. A trail feature with a change in elevation that allows the rider to drop off a ledge or platform.

Flat corner. A turn on the trail without any support.

Jump. A ramped portion of the trail that allows the rider to lift off the trail and 'jump'.

Rock garden. A section of the trail that is covered in rocks of varying shapes and sizes.

Rock slab. An exposed rock face that covers the whole trail and requires the user to ride over it.

Rolling grade knicks. A knick is a semicircular, shaved down section of the trail, that is sloped to drain water.

Rut. A narrow eroded trench caused by wheels rolling and braking down the trail.

Trail armouring. Armouring is a method of using large rocks to pave a trail and prevent erosion.

Trail corridor. The full dimensions of the trail including the area on either side of the trail and the space overhead that needs to be cleared of bush and obstacles.

Trail flow. The riders 'flow' or momentum through a trail that requires little pedalling or breaking.

Skinny's. A raised board walk or log with a flat top that is very narrow and requires a lot of balance to ride across.

More features to consider:

Climbs. The up-hill section of a trail.

Climbing turns. A climbing turn should be used on shallow slopes that are free flowing and gentle. Grade reversals before the turn will help divert water away and avoid erosion.

Descents. The down-hill section of a trail.

Fall zone. The area on either side of the trail or below a trail feature that provides a clear landing for riders who fail to negotiate an obstacle.

Log overs. Obstacles made of logs that require riders to lift the front wheel and then the back to ride over them.

North shore. A narrow wooden bridge or platform built above the ground or water.

Rollable. An obstacle that allows a bike wheel to simply roll over without lifting off the ground.

Rollers. A series of bumps made of compressed dirt that allows the rider to 'pump' through.

Trail grade. The grade of slope on a trail. A typical trail will have a slope of 10% or less for sustainable momentum. This can be adjusted according to site conditions and desired difficulty of the trail.

Single trail. A narrow trail that requires riders to travel in single file.

Slope. The natural or man-made pitch of the land. Generally referring to a hill.

Step-ups. A jump where the rider jumps up onto a higher surface.

Switchback. A tight hairpin turn in the trail that requires riders to slow down and change direction quickly.

Unavoidable obstacles. Obstacles in the trail that must be navigated or attempted without leaving the trail corridor.

Wall ride. A vertical wall structure that extends off the trail and allows advanced riders to jump on and ride along.

(Photos: TrailScapes)

Pump tracks

A pump track is a looped sequence of 'rollers' (bumps in the track) and 'berms' (banked corners) that allow the user to 'pump' through the circuit and generate enough momentum to ride with minimal pedaling.

Pump tracks deliver a fun and challenging riding experience for everyone of all abilities, from small children on balance bikes to teenagers and adults of all skills levels. Pump tracks build bike handling skills, confidence and encourage positive social interaction.

Pump tracks are man-made facilities that generally take up little space and require low maintenance. They were originally designed for mountain bikes and BMX bikes. They can be made from sealed surfaces, such as concrete or asphalt, or can be unsealed dirt or gravel tracks which cater for other users apart from mountain bikes and BMX bikes including:

› **Skateboard, scooters, inline skaters or quad skaters.** The riders can ride on pump tracks made from concrete, asphalt or any other smooth surface.

› **Wheelchair.** Wheelchair users can use pump tracks that are made from a smooth surface. They will require certain accessibility standards to ensure the track is usable.

Beginner and advanced tracks

Pump tracks come in all sizes, from miniature tracks suitable for toddlers on balance bikes, through to large scale parks with multiple intersecting loops catering for professionals in training. It is also common for beginner tracks to be positioned near advanced tracks.

› **Beginner.** A 'beginner' rider may prefer a track with a definite start and finish point, to reduce rider conflicts and collisions and to ensure everyone is moving in the same direction. A basic loop style track is beneficial with lower rollers and wider berms to maintain speeds that are easier to manage.

› **Advanced.** A more experienced rider can practice their skills on a more challenging track that has higher rollers, sharper berms and generates higher speeds. These tracks are typically longer and may have intersecting loops and no definite start point. They can also cater for competitive events.

Pump track styles

There are different types of pump track styles that cater to different users and provide a variety of experiences.

› **Free form.** A free form track is a skate park inspired design where all areas of the pump track space are ridable surfaces, similar to a concrete skate park. There is no set loop, direction or definite start point. Riders may choose their own path and must have awareness of other riders.

› **BMX loop.** A BMX style tack is the most common style where users ride in one direction through a loop circuit. This style is best for accommodating multiple users of different skill levels.

› **Competition.** Competition tracks typically use a BMX style design that consists of two mirrored loops. This allows for two riders to compete against each other in timed events. These tracks can be temporary or permanent. Some are built specifically for an event and removed afterwards.

Pump track features

There are many types of features that make up a pump track. The features used may vary depending on the desired user skill level and pump track style. Here are some features and terms to think of and discuss with your design specialist.

Berm. A berm is a banked corner in the track. They have an outer edge that runs the entire length of the corner to support the rider as they turn.

Hip/Jump. A feature where riders build speed and launch from the front of one roller and land on the back of the next.

Rollers. A series of bumps that allows the rider to 'pump' through the track.

More features to consider:

Trail flow. A flow is a predictable rhythm that riders should find when travelling through a pump track.

Pump. The action of pushing down and pulling up performed by riders as they move forward over rollers. Riders increase their speed by pushing and pulling and require little pedalling.

Pump track. A circuit designed for wheeled users made up of rollers, berms and features that allow the rider to 'pump' through the track.

(Photos: TrailScapes)

Feature specifications

Different pump track levels require different heights and specifications. Here are some specifications to use as a general guide.

	Rollers	Berms	Features
Beginner.	0.3-0.5	0.6-0.8	0.4-0.6
Intermediate.	0.4-0.8	0.7-0.9	0.5-0.9
Advanced.	0.5-0.9	0.8-1.2	0.8-1.5
	[m]	[m]	[m]

Rollers

Berm

Features

Hip / jump

MTB trails

BMX racetrack

Pump track

Toilet block

BBQ and picnic shelters

Bike cleaning station

Case Study

Wylde Mountain Bike and BMX Precinct
Western Sydney Parklands / Gandangara and Darug Country

Wylde was designed to wind through scenic Cumberland Plain bushland allowing riders to experience the natural beauty of Western Sydney Parklands while minimising the impact on the environment. Wylde caters for all ages and abilities, offering beginner to advanced mountain bike and BMX trails, featuring:

› Mountain bike trails of over 15km catering to various skill levels including a beginner, 3km, 6km, 12km loops.

› A BMX racetrack which can also host race meets and competitions.

› Pump track with asphalt surface, the largest pump track in the Southern Hemisphere featuring a junior loop and jump runs. Co located with the trails, the pump track also presents an opportunity to warm up for trail rides.

Diverse functions and supporting amenities

With 17 mountain bike trails, a BMX racetrack and pump track, spread over an 86-hectare site, the precinct is the largest combined mountain biking and BMX hub in Australia.

Supporting facilities were provided and include free parking facilities, BBQ's and picnic shelters, toilets, bike cleaning stations allowing riders and spectators to stay all day or just drop in for an hour.

Skills park

Skills parks are purpose-built training grounds that allow riders to develop and refine their skills while providing a fun and engaging riding experience.

They are open to all abilities, and their design is more versatile than a pump track, allowing for effective use of space in areas restricted by environmental factors or property boundaries in urban settings.

From an open plan park with defined start mounds to a single-track loop weaving through trees, skills tracks can suit an urban playground or nature strip through to trail head infrastructure and local urban trail networks. Alignments and features are sign posted and can include 'how to' instructions or QR code videos. Features should be comparable to industry standards.

Skills tracks are typically used by mountain bike riders and BMX riders to practice and improve their technical skills.

Beginner and advanced tracks

Skills park can cater to a variety of skill levels from beginner to advanced. Some tracks may have more than one 'line' for riders to follow with varying levels of difficulty. For instance, a rider may have the choice of riding along a high jump or a low jump.

› **Beginner.** A 'beginner' rider may prefer smaller jumps and longer run-ups between obstacles. As well as wider tracks that require less balance. This allows them to travel slower and easily ride along the different features.

› **Advanced.** An 'advanced' rider will be able to use larger jumps and ride along more technical skills park features.

Skills park styles

Skills park can be very unique and specific to the site they are in built in. There are no defined styles like other adventurous activities, but they are generally recognised as one of the following.

› **Stand alone.** Some skills park are built as stand alone spaces and can be within the urban environment. Those parks may cater to children and less experienced riders.

› **Additional to existing bike park.** Skills parks are often built in addition to existing parks such as mountain bike trails or pump tracks and provide riders with an opportunity to practice skills.

Aston Hills Mountain Bike Playground, Mount Barker, SA (Trailscape)

Skills park features

There are many types of features that make up a skills park. These features are typically made from timber, though they can also utilise natural elements such as rocks, logs, tree roots. Here are some features to think about.

Bridge. A raised board walk that users ride across.

Berm. A berm is a banked corner in the track. They have an outer edge that runs the entire length of the corner to support the rider as they turn.

Double roller. A timber feature that consists of two rollers and allows the rider to 'pump' across.

Drop. A feature with loss of elevation that allows the rider to lift off the track.

Jump. A gap in the track which allows the rider to leap off the end of one feature and onto the next.

Log ride. A log with a flat surface for users to ride over.

Rock roll overs. A rocky portion of the track that users ride over with caution to not damage a tyre.

Skinny. A raised board walk or log with a flat top that is very narrow and requires a lot of balance to ride across.

Wall ride. A curved extension to a berm that allows riders to ride up on the wall and jump off the end or flow back onto the track.

More features to consider:

Jump ramps. A ramped section of the track which allows the rider to leap off the end and onto the next section of the track.

Mid height ramps. Lower in height than jump ramps and can be used for tracks that cater for less advanced skill levels.

Zig-zag balance ramp. A raised board walk that varies, or zig-zags, in width and requires a lot of balance to ride across.

(Photos: TrailScapes)

Case Study

Jubes Bike Park
North Wahroonga / Darramuragal Country

The purpose-built facility includes an off-road skills development area, a pump track, and four jump trails ranging from easy to difficult in skill level.

First constructed in 2011, its original design did not meet community needs and the site was left to degrade. Council resolved to revitalise Jubes Mountain Bike Park in 2021 to direct local riders away from informal trails in bushland which impacted biodiversity, Aboriginal heritage and created a public safety concern – with community input, the revitalisation process has empowered local riders to take ownership.

Community engagement

Jubes Mountain Bike Park is a community-run facility managed by volunteers under the guidance and support of Ku-ring-gai Council.

Collaborative partnerships between local government and community can help to build facilities that better meet community needs.

Community-management models can empower the community to take ownership and maintain the facility.

(Photos: Matthew Duchesne © FancyBoy)

High-quality adventurous spaces

With the growth of participation in adventurous activities brings increased demand for infrastructure. Within NSW we have an opportunity to create adventurous roll and ride experiences that will attract visitors from near and far, strengthen local economies and provide communities with quality places to be active and take managed risks.

Adventurous spaces need to consider the user, where they are located, the site as well as the context of the surrounding area and network of other adventurous spaces.

The following considerations should inform the development of each project:

› **People**: Who you are designing for? Think about the local community.

› **Place**: What are the unique qualities of the site and surrounds?

› **Purpose**: What type of facility is needed? What level of skill will the space cater to? Are there any particular features to be included into the design?

All three considerations are interdependent and need to be addressed to deliver outstanding adventurous spaces for the community.

Thredbo Valley Track, Kosciuszko National Park, NSW
(Destination NSW)

Right page images:
Bondi Skate Park, Bondi Beach, NSW
(Dick Sweeney, Destination NSW)

Blue Mountains National Park, NSW
(Destination NSW)

03
Guide
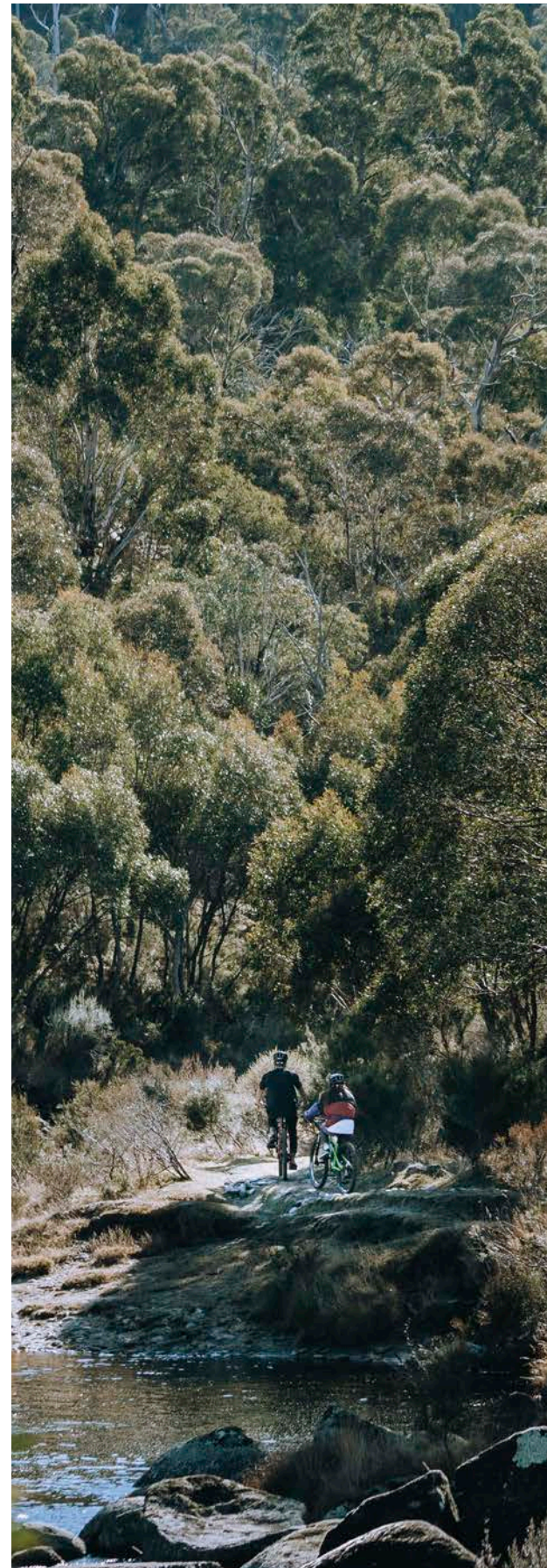
The process of planning, designing, delivering, and managing a public open space is dependent on the size, scale, and complexity of the project. It's often iterative, and should always be collaborative, taking into account a broad range of ideas and perspectives. This guide has been developed to assist you through these four important steps that can be reviewed and referenced at anytime through the journey.

Good planning ensures that our public open spaces meet current and future needs of communities. Some projects can be complicated and require significant time and resources. Taking the time to plan and design can ensure your project is delivered within budget and time constraints, to a high quality so that it is able to function effectively and efficiently throughout its life cycle. Engaging stakeholders early and often promotes transparency, accountability, collaboration, and cooperation.

There are many things to consider when creating adventurous spaces that can have a direct impact on the safety of the community. Proper planning and management principles can mitigate risk and ensure the safety of the public. The following section provides guidance through all project stages for developing open space, and will assist you in creating great adventurous spaces for your community to enjoy.

Plan

Think about the bigger picture; facility type, location, use, the project team and their responsibilities. Speak with the community to find out their needs.

Design

Engage in specialist consultants and involve the community and potential users throughout the process.

Deliver

Set yourself up for success with a good project brief, management practices, communication and evaluation processes.

Manage

Maintain and manage the site post-delivery to ensure longevity and uphold quality.

Plan Design Deliver Manage

This is the stage to consider the wider network of adventurous spaces and begin engaging with the community and experts.

It is important when embarking on an adventurous space project, to understand the complex steps that will need to occur across the project lifespan. This can include:

› Starting with Country
› Inclusion
› Community engagement
› Sense of place
› Vision
› Strategic planning
› Facility type and supporting facilities
› Project planning and pathways

It is critical to recognise that creating a quality adventurous space requires long-term commitment to collaborating with different stakeholders.

Engage with the community and stakeholders, and review existing strategies to identify opportunities, shortfalls and gaps for what the community demands of an adventurous space for your local area.

Planning stage deliverables:

› Strategic review of legislation and planning pathways.
› Plan of management and review of open space and recreation strategies.
› Business case, establish a budget and identify potential funding sources.
› Preliminary site assessment and due diligence studies.
› Communication and engagement plan.

Who's involved at this stage:

› Local Aboriginal land council or community representatives and landowners.
› Council including planners, open space and recreation planners or consultant planners.
› Design specialists.
› Environmental planners and ecologists.
› Risk managers.
› Community groups, clubs, local Member of Parliament and other key stakeholders.

Starting with Country

Every adventurous spaces project should embody the Starting with Country principles. Before beginning a detailed site plan, reach out to Indigenous representatives in the local area. Engaging with First Nations stakeholders will ensure identifying site values can be incorporated into the planning, design, and management of the adventurous spaces project.

- Prioritise local, place specific identity of the Country on which the open space is located and ensure cultural materials, customs and knowledge are clarified by the local Aboriginal community.

- Embed and interpret local stories and truth telling into design elements such as public art, wayfinding and materials.

- Prioritise the use of local Aboriginal language, place names and symbols in the identification and design of the open space.

- Support local opportunities for cultural and creative expression in the space.

- Provide space for Aboriginal cultures to be practiced and shared, helping people feel more connected to Country and place.

Available framework

Connecting with Country

Government Architect NSW, 2023

This is a framework for understanding the value of Aboriginal knowledge in the planning, design and delivery of places. It is intended to help advocating ways people can respond to changes and new directions in planning policy relating to Aboriginal culture and heritage, as well as place-led design approaches. It also aims to help project teams gain a better understanding of, and to better support, a strong and vibrant Aboriginal culture in our built environment.

Community engagement

Understand the community need. If community engagement has been undertaken previously, determine what types of facilities they want and their skill level. It is important to engage community through the plan and design process.

- Prepare a community engagement strategy for the project life cycle, from early ideas-gathering to feedback on design proposals.

- Set up a project information page on councils or community groups' website to keep the local community informed of project progress.

Community consultation

- Identify key stakeholders, both end users and non-users, particularly hesitant or concerned groups, and local residents. For example, sports or community organisations, clubs and associations, volunteer groups, schools and local skate or cycle businesses.

- Include them in the engagement process, discuss needs, challenges and potential involvement in designing, delivering, managing and maintaining the facility.

Education and evaluation

- Consider how to explain appropriate use and etiquette, including the potential for signage.

- Identify potential environmental issues specific to the site and describe how these can be prevented or protected through the design.

- Create targeted education and evaluation materials to inform the community of the many benefits of the facility. This can be achieved through community workshops, one-to-one discussions and case studies.

Inclusion

Adventure activities can be fantastic way to meet new people, make friends, keep fit, and set personal challenges. Adventurous spaces are for everybody.

Providing inclusive skate and cycling opportunities and reducing barriers to these experiences should be a primary consideration during the planning process. Information, communication, and dignified access are crucial.

- Talk to local advocates to identify the community needs, user skill levels and what the gaps are.

- Provide opportunities for progression and inclusion for people of all ages, genders, backgrounds and abilities.

- **Physical accessibility**: Design and construct facilities and activities to accommodate a range of abilities, including modifications to equipment and creating accessible routes and facilities.

- **Social accessibility**: Create an inclusive environment that welcomes everyone, regardless of ability. This may include hiring trained staff, ensuring clear communication, and fostering a culture that values diversity and inclusivity.

- **Attitudinal accessibility**: Change perceptions and assumptions about people with disabilities by educating staff, participants, and the wider community about the benefits of inclusivity, as well as promoting positive attitudes towards individuals with disabilities.

No one should feel excluded from adventurous spaces so considering those in the community with limited mobility, neurodiversity or sensory impairment is an important step in the planning process. Overcoming these challenges are crucial to ensure that everyone has an equal opportunity to participate in and benefit from the physical and emotional benefits of outdoor activities.

Sense of place

It is important to plan an adventurous space so that natural, cultural, Aboriginal and non-Aboriginal heritage attributes are incorporated harmoniously.

Cultural, Aboriginal and non Aboriginal heritage

- Embed and interpret local identity in the project. This could be through public art, material selection, planting and landscaping, the design of furniture, fixtures and signage.

- Ensure the adventurous space has a public presence and positively contributes to the quality of the adjoining public domain.

- Consider the use of materials and program activities to complement and respond the natural, cultural and heritage values of the local area.

Natural Environment

- Acknowledge the potential impact on the environment; respect and respond to its local natural character.

- For work in natural areas, consider biosecurity risks during the planning process, and adopt reasonably practical measures to eliminate or minimise potential impacts of the development on the environment, economy and community.

Available guide

Managing Biosecurity Risks in Land Use Planning and Development Guide

NSW Department of Primary Industries, 2020

The Guide seeks to help understand the relevance of biosecurity risk management in land use planning and development, and specifically its importance in mitigating potential impacts of a development proposal on the environment, economy and community.

Vision

Successful public open spaces often exist in central, comfortable and beautiful locations that inspire pride and appreciation from the broader community, not just participants.

Consider the technical challenge and experience you wish to provide for your community. Consider your organisation's risk tolerance to understand the most appropriate adventurous space for your area. Consider if the site may be decommissioned or re-purposed, particularly existing spaces that have poor environmental performance, safety concerns and/or low relevance.

☐ Set a vision and aspiration for the project in order to develop project milestones and goals.

☐ Identify the types, setting and scale of your adventurous spaces, locate them to take advantage of existing topography, shade, infrastructure and co-location with other complimentary public facilities.

☐ Consider what are the challenges and experiences you wish to provide for your community.

☐ Undertake risk assessment at the planning stage to understand what the appropriate adventurous space is for your local area.

☐ Identify the project scale that caters to the community needs.

Available strategies

NSW National Parks and Wildlife Service Cycling Strategy

NSW National Parks and Wildlife Service, 2022

The strategy outlines the vision, objectives and priority actions for the future provision of cycling opportunities in NSW national parks to ensure the conservation of their natural and cultural heritage values.

Strategic planning

Strategic framework

Review any existing strategic frameworks or policy documents such as strategies for open spaces and play spaces that can help guide decision-making. If required, develop a strategic framework to analyse:

› Existing facilities or gaps within and neighbouring your local government area considering the types of facility and skill level to ensure a range of experiences are on offer.

› Classification (small, medium or larger scale) of required facilities. Scale of available sites, locations, protection from hazards, suitable uses and suitable land use and zoning.

› Any other adventurous or recreation facilities for co-location opportunities. Interface with existing infrastructure.

› Active and public transport connections, with consideration of the end user and their access to private transport.

› Site access and car parking requirements.

› Community demographics.

› Asset management

Due diligence studies

Consider the following site impacts when working through the planning framework, not limited to the below:

› Remediation, geotechnical and site investigation.

› Site survey and access to service utilities.

› Ecology, flora and fauna assessments, biodiversity management.

› Bushfire zones and assessments.

› Culture and heritage impact, Aboriginal and non-Aboriginal.

› Flood compatibility, waterway impact, waste management.

› Noise control

› Traffic and public access.

› Arboricultural impact assessments.

Project brief

Develop a brief to include clear and concise information including:

› Project introduction – why is this project important, what is the vision, who is involved.

› Background information where available, for example, work that has already been done in the initiation and planning phase and any engagement outcomes.

› Site information such as location, size etc.

› Project budget (where available) to assist consultants and contractors understand the opportunities and constraints and guide their response for professional fees.

› Scope of services required.

› Develop achievable project time frames including council procurement processes.

› Benchmark projects, (examples of similar projects and their successful attributes).

Project budget

Ensure appropriate resources are available at the design stage and identify external design consultants required.

☐ Ensure budget is available alongside community consultation to ensure expectations are managed and ongoing asset management and maintenance to ensure long-term success of facilities.

☐ Identify grant funding availability and requirements.

☐ Ensure funding time frames are achievable within the project program.

☐ Build a business case that includes a cost benefit analysis if needed.

Note that indicative project costs are not included in this guide due to cost becoming outdated.

Business case

Developing a robust business case may help to inform an investment and/or policy decision and secure funding needed for the proposed project. Ensure resource allocation decisions are well timed, offer value for money, consider and mitigate risks and are consistent with Government priorities and objectives.

Include costs benefit analysis for green infrastructure and public spaces such as adventurous spaces to demonstrate the highest net social benefit and economical benefit, and understand the long-term impacts and benefits of a new public open space.

Facility type and supporting facilities

In many adventurous spaces, there will be opportunities to co-locate, or layer in, complementary recreation opportunities.

Co-locating activities such as basketball hoops, parkour, furniture, BBQ facilities, a tennis hit-up wall or simply line markings on concrete to facilitate games will increase visitation and passive surveillance within the space. Clustering other public recreation facilities around adventure spaces can also increase their success, such as play spaces, picnic facilities, tennis courts and exercise equipment.

☐ Evaluate any existing facilities within the community to understand what type of facility they provide and where those assets are in their life cycle.

☐ Analyse or collect data on community participation rates in adventure activities.

☐ Consider opportunities to co-locate, or layer in, complementary recreation opportunities.

☐ Identify other public recreation facilities to locate near your adventure space, such as BBQs, play spaces, picnic facilities, tennis courts and exercise equipment, basketball hoops, parkour and park furniture.

☐ Ensure that bike and car-parking, cycling networks and footpaths are connected and thoughtfully designed.

☐ Plan for the provision of drinking stations, shade structures and provide sufficient tree canopy to ensure comfort for users.

☐ Consider sufficient public amenities for users and non-users including spectators.

Available resources

Framework for Valuing Green Infrastructure and Public Spaces

NSW Department of Planning, Housing and Infrastructure (2023)

The framework provides a standardised, robust and comprehensive way to identify and quantify costs and benefits associated with green infrastructure and public spaces.

Project planning and pathways

Adventurous activities require appropriate infrastructure to provide an enjoyable experience. The design and construction of adventurous spaces will need to consider the planning framework and environmental impact.

The planning pathway will depend on the authority that has care and control of the land, who is the consent authority and where the development is located. Other contributing factors include the land zoning and if the site has heritage or environmental significance.

Approval for an adventurous space might require a development application (DA) or state significant development application (SSDA) depending on the size and scale of the project. Development undertaken by government agencies might be applicable for Part 5 of the Environmental Planning and Assessment Act by preparing a review of environmental factors (REF).

There may also be other requirements from other agencies specific to the application, such as National Parks and Wildlife Service and consideration of the National Parks and Wildlife Act 1974, if the project is located in national parks or other protected areas; Transport for NSW or the Rural Fire Service.

☐ Ensure the development is consistent with the relevant environmental planning instruments and state environmental planning policies.

☐ Seek planning advice to confirm the suitable consent authority and appropriate assessment pathway for the project.

Available resources

NSW Planning approval pathways
Further detail can be found at Department of Planning, Housing and Infrastructure website.

Dungog Common MTB trails, Dungog, NSW, (NSW Government)

(Photos: NSW Government)

Case Study

Beaumont Hills Park

Dharug Country

Beaumont Hills Park, located under the Sydney Metro Skytrain is a pioneering urban space with a strong focus on skate elements and adventurous activities. Part of the NSW Government's Parks for People program, this park showcases how to transform underutilised areas into It is the first public open space in NSW built beneath the Metro Lines much loved community spaces.

The design of the park reflects extensive community engagement, with over 200 local residents contributing ideas through written submissions and consultations during the pandemic. This inclusive approach ensured the park meets the diverse needs of its users, fostering a sense of ownership and pride.

The park features a compact pump track for BMX and biking skills, seamlessly integrated into the landscape. This dynamic track encourages active play and skill development, offering an exciting alternative to traditional skate bowls. The street-style skating plaza caters to skaters of all levels, from beginners to advanced, with various obstacles and features designed to challenge and engage skaters. The plaza benefits from partial shading provided by the viaduct and newly planted trees, creating a cool and inviting environment.

Public art by local artist Beastman adds vibrant and thought-provoking elements to the park, enhancing its visual appeal. Solar-powered lighting ensures the skatepark remains usable into the evening, providing a safe and inviting atmosphere.

Beaumont Hills Park exemplifies innovative urban park design, emphasising skate elements and adventurous activities while promoting environmental sustainability and authentic community engagement.

Plan **Design** Deliver Manage

This stage focusses on developing a creative design that both meet the community need and reflects the local culture, environment and heritage. Detailed consideration of these elements will make the space meaningful for the local community and give them a sense of ownership.

The way adventurous spaces function and are used will constantly change, as skills adapt and new users start using the space.

The design process needs to incorporate flexibility and involve the community including passive users like parents, carers and spectators including older people. The design process can include:

› Universal design
› Designing with risk
› Risk management
› Sustainability
› Site understanding
› Site design
› Designing roll
› Designing ride
› Designing youth spaces

Engage with expert advisers and work across council to consider the full project life cycle, including operations and maintenance costs, to ensure the facility remains safe and operational once constructed.

To design a great adventurous space, ask:

› Does it respond to people's needs?

› Does it respond to the place?
› Is it fit for purpose?

With the right design features, an adventurous space can become a hub for the community, promoting fitness, connection and an active lifestyle.

Design stage deliverables:

› Detailed site analysis.
› Engagement outcomes.
› Review of environmental factors.
› Concept design.
› Design development.
› Costing.
› Design risk assessment and management plans.

Who's involved at this stage:

› Local Aboriginal land council or community representatives and landowners.
› Council including planners, open space and recreation planners or consultant planners.
› Landscape architects or roll or ride design specialists.
› Project and design managers.
› Civil and structural engineers.
› Environmental planners and ecologists.
› Quantity surveyor.
› Communications specialist.
› Risk managers.
› Community, groups, clubs and stakeholders.

Universal design

Designing an inclusive adventurous space allows for greater participation and enjoyment for everyone regardless of ability. Adventure spaces should adopt universal design principles, use adaptive equipment and techniques, and promote an inclusive and welcoming culture to provide equal access to adventure activities for everyone.

Gender inclusive

Female participation in adventurous play is on the rise, however barriers still exist that result in women and girls feeling less welcome to participate in sports and recreation activities compared to males.

Consider co-design adventurous spaces with young girls and women, such as female-led design discussions and workshops, and broader opportunities for girls to contribute throughout the process in a safe, non-intimidating environment, leading to welcoming and inclusive spaces.

Roll: wheelchair accessible skate

Designing a wheelchair accessible skate park requires a unique approach that takes into account the specific needs of people with a disability while maintaining the core elements of a traditional skate park. The design should:

☐ Consider equal access to the facility as well as the obstacles within the skate park such as connecting skate elements by ramps and the use of smooth surfaces. Also consider the width of ramps for wheelchair users, in consultation with the community it maybe preferable to provide non-compliant ramps than none at all to enable more able users to participate or participate with assistance.

☐ Consider skate for beginner skill level which is also an opportunity for kids with disability to build their confidence.

☐ People with disabilities such as low vision could make use of these spaces with a good colour contrast and wayfinding signage.

☐ Consider site maps to orientate users and demonstrate where the accessible path of travel is and where the path may require assistance, if it's a non-compliant ramp access.

☐ Refer to council's disability inclusion action plan and seek endorsement and support from council disability advisory panel to justify the use of non-compliant pathways. Consult with specialists such as WCMX (Wheelchair motocross) group to ensure a safe and inclusive design.

Ride: adaptive adventure cycling

Adaptive adventure cycling is a great way for people with disability and limited mobility to experience outdoor adventure across a range of environments. An adaptive cycling facility should consider:

☐ Ensure accessible path of travel for start and finish points and viewing areas. Provide accessible facilities such as car parking, accessible seating area and toilets, avoiding a reliance on stairs or steep ramps.

☐ Encourage adaptive circuit and trails, and for hand cycling users, ensure sufficient width and turning circles. The recommended trail range is from a minimum of 10 km to 20 km to a maximum of 40 km to 50 km.

☐ Encourage delineated pump and skills tracks to provide sufficient safety drop zone for adaptive users. This is also suitable for beginners.

☐ Offer wheelchair-accessible platforms, clear and accessible signage, and activities for a range of users.

Available guide

Australian Adaptive Mountain Biking Guidelines

Break the Boundary Inc, 2018

A guide to help land managers, trail builders, event directors, mountain bike clubs, charities and associations develop inclusive mountain bike trails, events and programs for people with disabilities in Australia.

Designing with risk

Everyone will have a different comfort level and understanding of 'risk' based on their own personal experiences.

Strong commitment to listening, learning, advocacy and education will likely be required to bring these projects to life. Breaking down stereotypes and sharing the opinions of those advocating for these spaces within the community can be a powerful tool to steer opinion, as can the many resources, studies and research documents available that demonstrate the immense benefits of 'risk' and adventurous activities.

It is important to seek out the voices in the community you may not hear from in the traditional forums. This may include walking the streets or trails, conversing with skaters or trail users and building an appreciation of the site.

Safety in design

Through the design process, consider:

☐ Prioritise safety, with features such as smooth transitions, lighting, if night time use is appropriate and non-slip surfaces.

☐ Develop a clear pedestrian circulation and access strategy to allow for safe movement of active and passive users.

☐ Establish clear sight lines into and across the site to maintain passive surveillance.

☐ Provide sufficient shade for active and passive users to protect from UV exposure.

☐ Identify potential hazards, such as rough or uneven surfaces, sharp edges, or gaps between obstacles. Consider the risks associated with each feature and take steps to minimize those risks.

☐ Set clear signage indicating rules and safety guidelines for users to reduce risk associated with injury.

☐ Ensure a safety-in-design assessment is undertaken.

Risk management

The design of the adventurous space should prioritize safety. Identify potential hazards and consider the risks associated with each feature and manage risks to an acceptable level.

Implement a safety and risk management strategy/plan to ensure a safe and enjoyable adventurous space for all users with advice from risk managers and insurance agencies as appropriate.

Consult with Emergency Services in the design phase to identify where site access might be best located.

Available standards

Risk management Principles and guidelines
AZ/NZS ISO 31000: 2018

This document provides a common approach to managing any types of risk and is a good resource for risk management of adventurous spaces.

Benefit-risk assessment for sports and recreational facilities, activities and equipment
ISO 4980: 2023

This document specifies methods for a benefit-risk assessment and provides guidance and requirements on benefit and risk assessment within this field.

Site understanding

During the design, it is critical to understand the site and its constraints. Undertake analysis and assessments where required to gain site knowledge for preparing a design that is appropriate to the place.

☐ Undertake an Aboriginal and non-Aboriginal heritage study to identify any heritage items, native title claims or items of cultural significance.

☐ Within areas of biodiversity value, undertake an ecological assessment to identify any protected or endangered flora and fauna species or sensitive vegetation.

☐ Undertake an arborist assessment to identify protected existing trees and confirm actions required to suit the development.

☐ Undertake a detailed site survey to identify all site features, topography, existing trees, movement of water in and around the site, underground services and easements.

☐ Undertake geotechnical and remediation investigations to confirm limitations, suitability of the site (for example, site contamination and ground water levels) to inform structural design.

☐ In low lying areas undertake flooding compatibility investigation to confirm site constraints and inform stormwater and drainage design.

☐ If required, undertake bushfire assessment to identify site limitations, and understand design requirements.

☐ Undertake specific investigation to ensure site limitation are considered through the design process. For example, Koala assessment within Koala conservation area, noise impact assessment, traffic and access, waste

Sustainability

Encourage the approach of ecologically sustainable design to minimise environmental impacts, and balances economic, social and environmental outcomes to provide long term community benefits.

Material selection

☐ Choose materials that are durable, non-toxic, and sustainable.

☐ Consider materials that are recycled or locally sourced to reduce the carbon footprint of the construction process wherever possible.

Energy efficiency

Embodied energy refers to the sum impact of all greenhouse gas emissions attributed to a material during its life cycle. Durable materials last longer and reduce the overall embodied energy used over the lifetime of the product.

☐ Consider embodied energy in material selections.

Water Sensitive Urban Design

These features help to reduce the amount of pollutants that enter waterways and help to replenish groundwater.

☐ Consider water-sensitive urban design (WSUD) features such as rain gardens. Porous pavements are particularly effective next to garden beds or tree planting areas to absorb storm water runoff while watering plants.

☐ Maximise permeable surfaces that allow water to drain and evaporate through the surface and minimise water discharged into the storm water system.

Vegetation and greenery

☐ Follow natural topography to minimise environmental impact and avoid damaging sensitive ecosystems.

☐ Incorporate native plants to reduce the amount of heat absorbed by hard surfaces, improve air quality and biodiversity.

Site design

There are a number of design aspects to be considered to deliver a great adventurous space, some of these include:

Access and circulation

- Consider universal access (gender, ability, age, skill level, spectators as well as users) for entries and circulation as well as for furniture and amenity's suitable to the facility's hierarchy.

- Identify public transport connections (bus, train, light rail, ferry) and consider appropriate connections; and active transport connections (walking and cycling paths) and consider appropriate end-of-trip facilities such as bike racks or lockers.

- Consider the provision of safe drop-off areas and/or car parking for small, medium and large facilities.

- Provide emergency and maintenance access points.

- Consider the entry experience to the space and how it addresses adjacent streets or buildings.

Location of the facility

- Position the facility to take advantage of the site's topography, shade or views. This includes balancing cut and fill on site to manage project costs while minimising environment impacts.

- Ensure design is part of a network that provides for a variety of skill levels when designing smaller facilities.

- Ensure adequate distance from surrounding residential areas and properties and consider using screened barriers to minimise noise.

Supporting facilities

- Consider lighting for safe use at night and to deter anti-social behaviour (150 lux minimum), and consider impacts on neighbouring properties.

- Provide sufficient built shade or natural shade from large trees. Identify opportunities to increase urban tree canopy coverage.

- Provide adequate seating, viewing areas, shelters, water bubblers, BBQs and toilets for passive users, as appropriate to the hierarchy of facility.

- Consider incorporating public art in accordance with local government strategies, policies or plans.

- Integrate site features, public art or built shade infrastructure in the design including existing vegetation and any necessary tree protection measures.

Wayfinding and signage strategy

Signage is an important point of communication and contributes to a visitors first impression. Signage should be welcoming and engaging, consistent with the local character and also provide a sufficient level of information and safety guidance considering:

- **Site information:** displays general information about the area, including historic and cultural messages. Information on site orientation and directions for moving through the site including accessible pathways.

- **Safety and risk:** ensure clear messaging indicating technical information, rules and safety guidelines to reduce risk associated with injury. Provide site location and contact information for emergency services.

- **Education:** provide information on etiquette, considering safety equipment such as helmets, turn taking, appropriate use of equipment and techniques such as how to fall. Information on the most appropriate skill levels for the facilities provided and warning information for beginners when using more advanced facilities.

- **Caution and regulations**: to communicate any restrictions or activities which may be prohibited to protect both visitors, equipment and the natural environment.

Designing roll: Scooters, skateboarding, freestyle BMX, inline skating and quad skating

The roll spaces should be designed to provide a unique and enjoyable rolling experience which allows users to develop and refine their skills while providing a fun and engaging experience.

People

Engage the community to understand their preferences and skill level.

- Design for 'skill progression' to ensure beginner can advance to more technical obstacles in a safe environment by providing both beginner and more advanced obstacles and designated beginner space away from close observation or conflict with advanced skaters.

- Ensure access to adjacent grassed or hard-stand areas for temporary services, generators, toilet facilities, retail areas or food and beverage marquees.

- Provide equal access to viewing areas – aim to locate them to the north or west of the facility to maximise shade and to face spectators away from afternoon sun.

Place

Attention to detail is fundamental, materials, sizing and placement of individual elements, edge treatments, surface finishing all contribute to a quality, robust and sustainable space.

- Consider landscaping opportunities that integrate the facility with the local and site character.

- Use the topography to determine the fall and arrangement of the facility or as a sculptural form for viewing. Design the facility to feel unobtrusive and to maintain views, level changes can be used for elevated refuge or viewing areas and split-level skate areas.

- Consider orientation and location to help control noise and direct movement. Consider proximity to neighbours, with a 50m buffer considered the minimum. Consider how the design can be integrated with low walls, screens and tall planting to reduce noise.

- Co-location with other facilities, like art and performance spaces, basketball, bouldering (climbing) walls, parkour elements or kick-about nets – to encourage broader use of the area, lawn areas, decks, hang out spaces, edges with shade to accommodate spectators.

- For larger facilities consider allowing for events to encourage non-users to come along. Consider opportunities for built-in audio and projected media. Services and infrastructure for events such as 3-phase power, cable trenches, footings to receive poles and frames for rigging and exhibitions or temporary fencing.

Purpose

Understand the community needs and provide site specific design.

- Identify the types of elements being proposed. These should be based on feedback from the end-users in the community.

- Create balance, low rails, ledges, quarter pipes and banks and the correct run up and landing space for each feature.

- Provide sufficient space between obstacles to encourage flow.

- Consider capacity and overcrowding in peak periods, and what this could mean in terms of collisions. Aim to separate beginner and advanced areas or slower and higher speed zones.

Available standards

Skateparks - Safety requirements and test methods

AS EN 14974:2021
This document specifies safety requirements and requirements for testing and marking, information for users, as well as for inspection and maintenance to protect users from hazards. This document applies to skateparks for public use intended for the use of skateboards, other roller sports equipment and BMX bikes.

Case Study

Bathers Way Skate Park
Newcastle / Awabakal and Worimi Country

Bathers Way Skate Park is part of City of Newcastle's Coastal Revitalisation Program which is funded by NSW Government. The project is designed to cater for a broad range of users, providing a wide accessible shared path, carpark, toilet, new kiosk and exercise equipment,

and a wheelchair user friendly skate park and bowl. Improved beach access provides places to sit, spectate and enjoy the beach-side views. Designed using materials to compliment the coastal environment.

Inclusion and accessibility

New café/kiosk, accessible facilities and showers: accessible car park, toilet and link to the lower concourse is provided for all users.

Accessible exit tunnel and ramp connects top and bottom of the skate bowl: formed by experimental design workshopping, allowing both

wheelchair skaters, beginners and children to exit the bowl safely, enable the spaces can cater for everyone of varies ages and abilities to use.

Due to topographical constraints, some wheelchair ramps could not meet accessibility compliant grades, these non-compliant access ramps were reviewed by access consultants and accepted by council.

(Photos: City of Newcastle)

A ramp connects the tunnel back to the top of the bowl.

Bathers Way connects the street level and lower concourse which increases the level of access for users with a disability, younger kids and an opportunity for the surf lifesaving club to transport large equipment.

Ramp links are created throughout the upper and lower skate facilities to provide a path of travel for wheelchair users.

Exit tunnel to be built into the wall of the skate bowl.

Supporting facilities: Shade, seating and lighting are provided for users and spectators.

Designing ride: Mountain bike and BMX

Designing a mountain bike trail, pump track or skills park requires a mix of creativity and technical expertise and a deep understanding of the landscape, topography and user to create a challenging and rewarding riding experience.

Tracks and trails are designed to provide a unique, fun and exhilarating riding experience allowing riders to develop and refine their skills.

People

Consider the skill level and riding style of intended users, this includes the type of experience they are seeking. Provide access for people with a variety of ages and abilities.

☐ Access to the facility should be provided in a safe and sustainable manner, considering the potential impact on the environment and the surrounding community.

☐ A well-designed ride facility should be accessible to all riders, regardless of their skill level or the type of equipment they use.

☐ Ensure a buffer between facilities and neighbours to minimise noise.

Place

The location of the track or trail is a important design consideration. Existing facilities and trails should be considered when planning new developments to ensure connectivity and integration with the broader trail network.

Ride facilities should be suitable for their environment while providing an exciting and enjoyable experience for users. The overall plan should consider the impact on vegetation and minimize water runoff to manage erosion. Different terrains, slopes, vegetation, and soil types offer unique challenges and opportunities for designers and builders.

Continual impact on vegetation should be considered, particularly in mapped areas where the Biodiversity Conservation Act 2016 apply.

It's essential to balance the needs and desires of the riders with the impact on the natural environment, incorporating features such as drainage infrastructure, durable materials, and native vegetation.

☐ Utilise the natural terrain, such as hills, rocks, waterways, vegetation and enhance the existing features of the landscape to create an exciting and challenging experience for riders.

☐ Consider materiality of the trails, minimising the need for imported materials such as rock, boulders, gravel, timber. Sensitively reuse existing or local material wherever possible.

Purpose

The ride facility should provide a fun, challenging, and rewarding experience for riders while also being safe and sustainable. A well-designed ride facility will encourage riders of all levels to improve their riding skills, helping them to progress to more challenging trails.

For mountain biking trails, the International Mountain Bicycling Association (IMBA) principles should be considered during the design and construction process. Such as rolling contours concept, outslope, the 10% average guideline, and frequent grade reversals. (Guidelines for a Quality Trail Experience)

A larger pump track, offers many interconnecting options much like a skate park. While there is generally one main path of travel, many tracks have a main loop with crossover options. These tracks can handle a lot of riders safely because everyone travels in the same direction.

Ensure budget allows for unknown site conditions found during construction such as underground rock, underground springs, or cultural heritage discoveries.

Shared tracks with e-bikes:

Consider the use of electronic bikes (e-bikes) on tracks and trails. If designing for the dual use of manual and e-bikes it is important to consider path width, rider etiquette with signage to differentiate between trails and shared zones.

The use of privately owned e-scooters is limited and e-skateboards are illegal unless being used as a mobility aid within NSW. Check NSW Government guidelines.

Mountain bike trails

☐ Consider the experience of potential users and the level of difficulty provided in your trail network.

☐ Consider the location of trailheads and any supporting infrastructure such as power, water or parking areas. Aim to locate trailheads close to access roads or active transport networks to minimise service runs and keep vehicles out of the site.

☐ Consider the natural features of the landscape, such as hills, rocks, waterways, and vegetation, minimize erosion, ensure trail sustainability and how they can be incorporated into the trail design.

The average trail width disturbance during construction is approximately 2.5 meters wide, with the trail itself normally being around 1m wide. To minimise impact for the adjacent environment:

☐ Review the width of the corridor (20m recommended) to avoid significant features during construction or retention of rocks and trees.

☐ Disturbed areas should be revegetated post-construction.

Pump tracks

Beginner tracks will have a gentler slope and smaller features, while one designed for experienced riders will have larger rollers and tighter berms to challenge their skills.

☐ Identify user experience level.

☐ Consider how storm water drainage will be managed. Unavoidable trapped low points could be turned into rain gardens.

☐ Consider temporary and prefabricated pump tracks if wanting to trial community demand before committing to a permanent facility.

While there is generally one main path of travel, many tracks have a main loop with crossover options. These tracks can handle a lot of riders safely as everyone travels in the same direction.

☐ Investigate the benefit of a larger scale pump track, which offers interconnecting track options.

Skills parks

A skills park in an urban area may feature more engineered elements like concrete, steel and timber, whereas a park in a more remote or natural area may use natural materials such as boulders, logs or site soil.

☐ Consider the setting of the skills park, the type and variety of features you should provide to develop skill sets such as balance, agility, jumping, dropping or cornering.

☐ Create areas for kids and beginners to practise and their skills.

☐ Consider whether the project can be located at the start of a larger trail network so that riders can practice their skills or warm up before starting the full trail. Co-location with other types of adventurous activities will encourage a wider range of users into a space.

☐ Consider a variety of features which utilizes the natural terrain, enhancing the existing features of the landscape to create an exciting and challenging experience for riders.

Available guides

Australian Mountain Bike Trail Guidelines
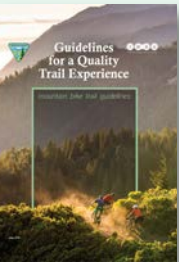
AUSCycling (2024)

A guideline for a varies of ride experience including mountain bike, BMX etc in Australia.

Guidelines for a Quality Trail Experience

(IMBA) International Mountain Bicycling Association

This guideline aims to help improve the design and delivery of mountain bike trails, it sets forth a process for ensuring that targeted experiences and beneficial outcomes are realised.

(Photos: Destination NSW)

Case Study

Thredbo Mountain Bike Trails

Kosciuszko / Walgalu Country

Thredbo is a year round resort – skiing in Winter, with mountain biking and walking trails utilised throughout the remainder of the year, which includes chairlift access to a walking trail to access Mount Kosciuszko.

The Snowy Mountains are NSW's premier adventure cycling destination and includes:

› Thredbo Valley track
› Thredbo MTB park
› Mount Gladstone MTB Park (Cooma)
› Snowy Region Gravel and Cross-Country
› Tumbarumba Rail Trail
(Adventurous Cycling Strategy, Department of Regional NSW)

The Thredbo Valley Track extension funded by NSW Government has been constructed and commissioned. A variety of experiences are provided such as down hill, cross country trails, skills and jumps parks and all mountain disciplines as well as all ability levels from family-friendly rides, low and high intermediate to advanced adventure rides. It also incorporates new and existing trails, walking tracks, ski trails or 4WD trails.

The best results have been obtained through a multi tenure approach, where experiences are spread across the landscape and the experiences can be focused in the most appropriate location. For example, the Thredbo Valley Track runs

through a remote section of Kosciuszko National Park, whereas a mountain bike park is more suited to a location near a population centre, such as Jindabyne.

The unique facilities are appealing and accessible to mountain bikers of a range of skill levels, as well as their family and friends, creates a year-round tourism hub that improves the visitor economy and meets the growing needs of residents and seasonal visitors.

Mountain bikers in Thredbo can use the chairlifts to gain access to the top of the mountain for those eager for thrills and pure gravity experience.

Biodiversity in design

The review of existing vegetation and Biodiversity value map during initial phases were essential to help minimize vegetation impacts and erosion from runoff while providing an exciting and enjoyable experience.

Consideration of design and construction principles such as IMBA (Internal Mountain Biking Association) through out the process helped to achieve environment stability while providing exciting and enjoyable experiences.

Designing youth spaces : Parkour, obstacle courses and free running

While parkour and obstacle courses are not covered by this guide, it's recognised that many of these elements are commonly provided alongside skate parks in youth recreation areas. Like other adventurous spaces creating, parkour, obstacle or free running elements could follow the plan, design, deliver and manage process outlined in this guide.

As with all adventurous spaces its best to consult with specialist designers, engineers or users to design these spaces. If incorporating elements of parkour or obstacle courses into youth recreation spaces:

☐ Consider a range of abilities and ages, providing options by varying heights and distances between obstacles.

☐ Create space for spectators and overflow spaces, or to leave belongings while participating.

☐ Ensure attention to detail; materials, sizing, edge treatments and surface finishing.

☐ Ensure adequate impact attenuation surface treatments to manage risk. Mulch, sand or turf may be alternatives to softfall rubber.

☐ Design obstacles to enable jumping, vaulting, swinging and climbing. Consider variation in obstacles through different angles, heights, orientation and cut outs.

☐ Ensure space for adequate run-up and run-out to obstacles and spacing between bars to dismount.

☐ Consider adding games for extra value and challenge such as 'Easter egg hunts', 'the floor is lava' or touch points within the course.

Available standards

Sports and recreational equipment - Parkour equipment - Safety requirements and test methods
AS EN 16899: 2020

This document specifies safety requirements for parkour equipment for the installation and maintenance of parkour equipment, including area, height, flow, location and separation from other facilities

Albury Skate and Active Recreation Precinct, Albury, NSW
(Simon Dallinger)

Case Study

Central Park Youth Space

Bourke / Ngemba Country

Through community consultation, young people in Bourke requested more adventure type activities, specifically obstacle and parkour. Bourke Shire Council with the Department of Planning, Housing and Infrastructure, partnered to design a parkour and obstacle course in Central Park.

The core function of the 400 m² design is to deliver an obstacle style course – to be completed in a sequence from start to finish. The design is also multi-functional providing parkour style obstacles alongside social gathering spaces to encourage repeated use through multiple sequences as well as an appealing space to hang out. There was also an opportunity for the design to use the equipment in a sculptural way, repeating the use of materials in the park also helped to reinforce the sense of place.

Parkour integration

Engagement with school and youth groups helped to understand which elements of this style of adventure activities was most appealing. The focus age group for the space is from 8 to 15-year-olds with the intent to create a facility to explore physical limits and develop self-awareness of risk.

The design integrates blocks, seating and bike racks for parkour or free running which created a multifunctional space and allowed users to come up with their own ways of combining elements in different directions (called lines) creating continual interest and challenge.

Providing ramp access to elements like the monkey bars allowed for both younger people and people in wheelchairs to be able to access this equipment.

Understanding the flow of the course element ensured good pairing and sequencing of obstacles with suitable run ups and landings.

Providing a well-considered range of different height, size or distance between blocks or bars allows for a range of different skill levels.

Considers functional aspects such as shade, sight lines, lighting to enable management of anti-social behaviour.

(Photos: Bourke Shire Council)

Plan   Design   **Deliver**   Manage

'If you build it, they will come.' Nowhere is this more true than at the skate park, track or trail.

The procurement process requires clear briefs and expert advice. You will also require a broader understanding of environmental benefits by implementing durable, robust and functional materials.

A well-planned and designed space will make the delivery process easier. A robust design and construction process is needed to guarantee a high quality, sustainable space. The delivery process can include:

› Communication
› Procurement
› Quality control
› Construction

This will ensure project delivery aligns with broader project objectives while meeting user needs.

Delivery stage deliverables:

› Detailed design.
› Cost review and budget monitoring.
› Risk assessment.
› Tender and construction documentation.
› Construction.
› Construction management plan
› Defects inspection report.
› Communication with community clubs and stakeholders.

Who's involved at this stage:

› Landscape architect or roll or ride design specialist.
› Civil and structural engineer.
› Environmental planner/ecologist.
› Project manager.
› Council procurement officer.
› Council open space planner, project and design manager.
› Construction contractor.

Communication

Communication is essential to the delivery process for creating a quality adventurous space. It helps to overcome any barriers or issues that might occur during the delivery and ensure the outcome aligns with the project objectives.

☐ Confirm that all necessary permits and approvals have been received to allow the construction works to begin. For example, build over permits, clearances and safety requirements.

☐ Develop a Communications Plan that outlines how neighbouring properties, businesses, stakeholders and the community will be communicated to, including construction timeframes.

☐ Ongoing communication with the designers, community and contractors throughout the construction of the adventure space.

☐ Share information across project managers and contractors about design timeframes, procurement and construction timeframes, review periods, hold points etc.

Procurement

The types and timeframes for procurement varies, depending on the scale of the project. Larger, more complex project will take longer.

☐ Undertake appropriate procurement process, ensure a fair and equitable construction contracting outcome.

☐ Engage experienced designers and qualified contractors to construct adventurous spaces.

☐ Program the project accurately including design time frames, review periods, hold points, construction and procurement time frames.

Quality control

Quality control is key to delivering a successful adventurous space. Below are the recommended processes to help achieve a high quality space:

☐ Agree on health, safety, environment and quality (HSEQ) requirements with the contractor before works begin, for example traffic management, site setup, environmental controls, quality assurance (QA) documentation.

☐ Ensure contractor quality control documentation is received as necessary to council's requirement and to meet the design specification.

☐ Ensure a safety-in-design register is established and maintained, highlighting any potential risks.

☐ Ensure project manager and designers are frequently onsite and communicating with contractors regarding quality of service delivery.

☐ Undertake regular site visits, ensure hold points are inspected, any identified defects are rectified prior practical completion inspection.

Available resources

NSW Building and construction resources

NSW Government has a range of resources to help industry adapt to our reforms and deliver quality building work.

NATSPEC NSW Class 2 Reference Specification: providing information on minimum standards for class 2 buildings, and supporting practitioners to identify the products and techniques that are fit for purpose.

Guide for design practitioners and engineers: on the Design and Building Practitioners Act.

Construction

A well-planned and designed space will help to manage construction process to ensure a high quality and successful adventurous space is delivered.

☐ Ensure selected materials are robust, sustainable, appropriate and available.

☐ Ensure construction detailing and specifications meet current trends and tolerances in construction methodologies for the anticipated uses and level of use.

☐ Ensure construction is built as designed and documented with any changes proposed by the contractor approved by the designer, to eliminate potential risks once the facility is open for use.

☐ Undertake a practical completion walk to determine defects or non-compliant works are detected early, rectified and completed that the site is fit for purpose.

☐ Ensure the contractor provides as-built drawings of the facility to council's requirements.

Bike Trails at Sandy Point Beach Reserve, Hay, NSW, (Destination NSW)

Plan   Design   Deliver   **Manage**

Develop comprehensive management plans and once you've opened the new facility, regularly audit the site to capture issues early and understand the reasons behind any defects. Often it's the users themselves that discover management issues so a direct line of communication between site users and management is advantageous to reduce hazards and keep on top of potential management issues.

Training and education are important. Users should receive messaging about on how to safely use the facility, encourage broad usage of the site, take responsibility for using the space responsibly and uphold the rules and guidelines.

Regular maintenance and management is crucial to keep adventurous spaces safe. Users should be encouraged to look after the site and report any concerns to the site manager.

Evaluate completed projects consider the aspects of safety, user experience, sustainability, community impact, maintenance, social and economical influence for future lessons leant.

A well managed and activated adventurous space should be sustainable into the long term and provide enjoyable experiences to a range of users. This can include:

› Education
› Risk management
› Activation
› Evaluation and improvement
› Maintenance

Manage stage deliverables:

› Management plan
› Liability management plan
› Risk management plan/operations risk plan
› Space activation and promotion plan
› Emergency response plan
› Maintenance plan
› Asset management plan
› Evaluation framework

Who's involved at this stage:

› Open space and asset planner and manager
› Risk manager
› Maintenance team
› Rangers and outdoor assets staff
› Community clubs and stakeholders

Education

Encourage and reach out to local skate and BMX schools to workshop interest in using these adventurous spaces for training and education.

☐ Educate users on the potential risks and how to minimize those risks through signage, social media, community workshops, advertisements or posters.

☐ Include groups of people with limited mobility and CALD (cultural and linguistic diverse) groups to ensure the facility is accessible for everyone.

Safety equipment

Reinforce the importance of wearing protective equipment may include not limited to:

› Helmets - ensure it meets Australian standards (AS/NZS2063) that passed stringent safety tests.

› Protective gear - wrists guards, knee and elbow pads, mouth guards, slider gloves, impact protection shorts and more.

› Right cloth - increase visibility and comfort, stay cool, prepare for bad weather.

› Check your equipment - such as brakes that work effectively and tyres are at appropriate pressure.

› First aid kit - consider carrying a bandage, band aids, sun cream and more.

› Bike working warning device (such as bell, horn) and lights (flashing or steady) that can be seen in poor visibility weather conditions.

Available guide

A handbook for bicycle riders

NSW Transport Roads & Maritime Services

The handbook is a useful guide to riding bicycle safely in NSW. It includes valuable tips on safety gear, bicycle maintenance and the legal aspects of riding bicycle.

Activation

The strategic activation of these sites is critical step. Uptake of usage is likely to be strong by the groups that advocated for their development, however these same stakeholders could reach out to local skate and BMX businesses and schools to promote interest in using these spaces for training, skill development and education.

To manage improper use of new facilities, considering observing user behaviour for a short period after opening and manage if required.

It is important to generate broad community ownership of the space for a range of purposes and long term outcomes. The space should be used by a broad cross section of community;

☐ Consider arranging an opening event to celebrate the delivery of the space, allowing users and community members the opportunity to be involved, visit the site and connect with the space.

☐ Consider creating an annual activation plan for large facilities, with opportunities for community events which are open to a broad range of users.

☐ Engage local user groups and collaborate to host local, state, national event. Advocate for tourist opportunities.

☐ Encourage users to promote access to the space by people of different ages, skill level, ability and from culturally and linguistically diverse backgrounds.

Risk management

In addition to reducing risk and hazards on site through ongoing management and maintenance, the risk management plans can:

- The site manager and regular users could form an emergency response plan to provide adequate support in case of any incident at the adventure space.

- Outline procedures for identifying potential hazards and responding in the event of an actual incident.

- Explain how site users can contact emergency services and identify the location of the incident to emergency services. Advise how to provide first aid.

- Creation of unplanned or unauthorised tracks can raise concerns of environmental impact and risk of injury. Consider scheduling regular inspections to assess unauthorised track building to assess risk and manage with track users.

Evaluation and improvement

Celebrate the success and identify any areas that require further attention and lessons learnt for refinement of the existing facility or to apply in future projects.

- Establish an evaluation framework to review the facility regularly over the first 12 months of operation, then at least every 12 months thereafter, to understand usage trends and any issues with construction.

Maintenance

Set an annual maintenance budget with the understanding that repairs may need the use of specialist contractors if Council does not have the capacity. Consider training programs to equip council officers, local clubs and community with the capability to do minor repair works or engage external experts to assist in regular maintenance.

- Prepare an audit schedule for regular inspections to identify issues early and do repairs before they become a major problem.

- Undertake extra reviews following major weather events (high winds, flooding, storms or heavy rain) to ensure trails, drainage and facilities are safe to use and hazard free. Protruding branches or fallen tree limbs can prove particularly hazardous on trails when traveling at speed.

- Ensure the contractor provides product specification sheets.

- Establish a volunteer support and induction program if the facility is maintained by the community.

Maintenance manual

- Ensure the contractor provides a maintenance manual that considers:

  › Who does maintenance – general cleaning, specialised inspections and repairs.
  › Frequency of general cleaning – mud, dirt, debris from facility.
  › Frequency of rubbish collection.
  › Frequency of specialised inspections for damage/vandalism of surfaces and elements.
  › Frequency of lighting inspections, if required.
  › Methods of damage repair.
  › Methods of graffiti removal that will not damage surfaces.
  › Review of surrounding tree safety by trained arborist if required.

Dungog Common MTB trails, Dungog, NSW, (NSW Government)
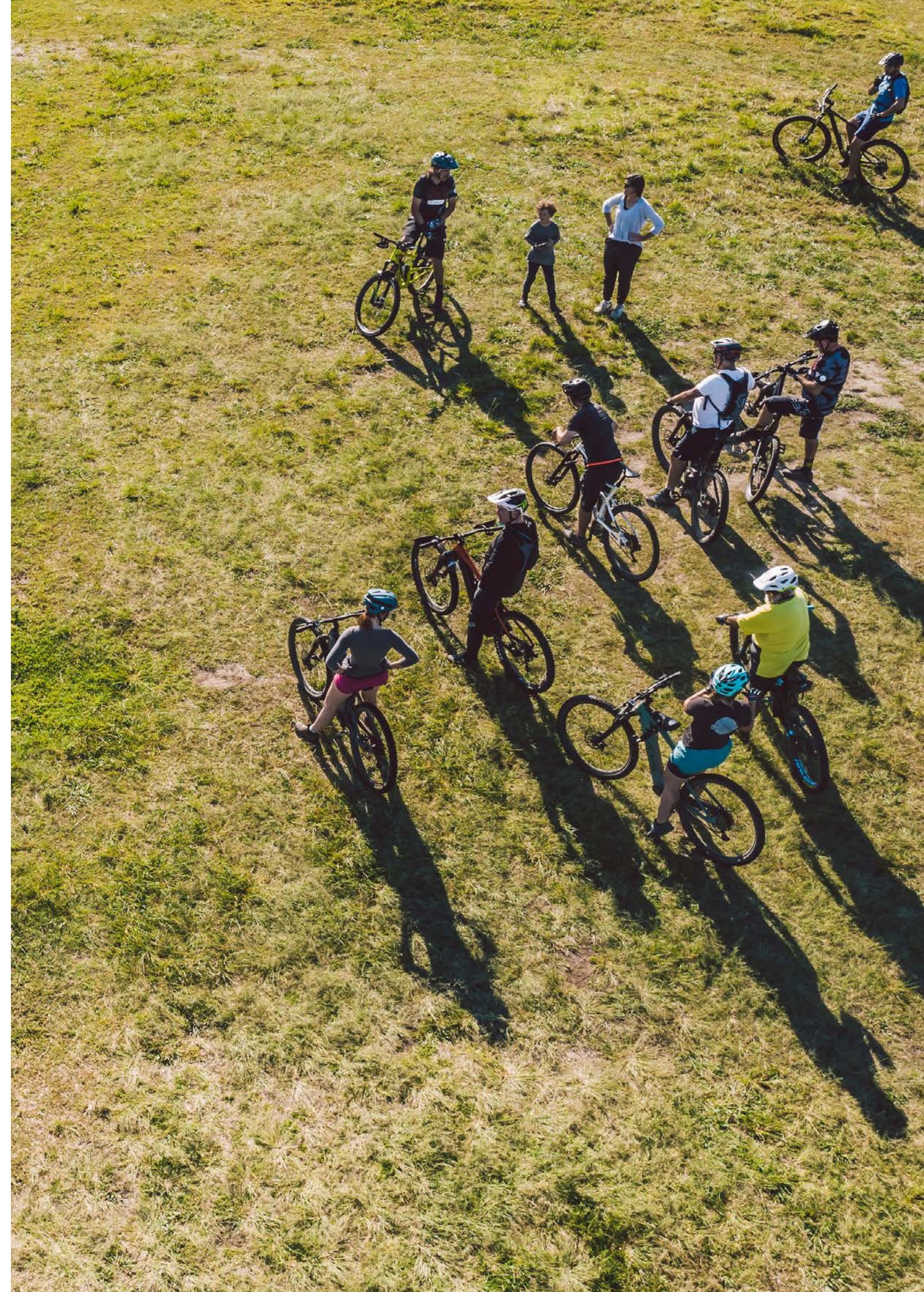
Glossary

Active users. A user actively participating in an activity or utilising a space in the way it was intended for.

Adaptive cycling. Modification of bicycles to make them more accessible for people with disabilities.

Adventurous activities. Refers to unstructured, non-competitive and free outdoor physical play activities that push boundaries and involve an element of risk.

Airs. A skate trick where the rider launches themselves into the air off a ramp or other obstacle and performs tricks before landing back on the ground.

Circuit. A closed course with multiple turns and track features.

Circulation. The movement of people or users through a space.

Co-locate. Locating more than one type of facility on the same site.

Country. Country is the term often used by Aboriginal peoples to describe the lands, waterways and seas to which they are connected. It contains complex ideas about law, place, custom, language, spiritual belief, cultural practice, material sustenance, family and identity.

Embodied energy. A calculation of all the energy that is used to produce a material or product, including mining, manufacture and transport.

Extreme sports. Activities perceived as involving a high degree of risk.

Facility. A physical location or built structure that is designed and equipped for a specific purpose or activity.

Fit for purpose. Something that is designed for a specific function or intended use.

Grinds. A skate trick that involves sliding, or grinding, on the edge of an obstacle.

Line/s. The path or route that riders take as they navigate through obstacles and features. There may be more than one line a rider can take of varying difficulty.

MTB. Mountain bike.

Obstacles. A physical structure or feature that is intentionally placed and provides riders with a variety of challenges and opportunities for creativity.

Passive users. People using a space or facility in a non-formal way or in a way that is secondary to the primary purpose of the space.

Parkour. The activity or sport of moving rapidly through an area, typically in an urban environment, negotiating obstacles by running, jumping, vaulting and climbing.

Purpose-built. Built or made for a particular purpose.

Pump. The action of pushing down and pulling up performed by riders as they move forward over rollers in a track or trail. Riders increase their speed by pushing and pulling and require little pedalling.

Ride. Recreation and travel primarily using mountain bikes and BMX.

Roll. Recreation and travel using scooters, skateboards, roller-skates, roller blades and Freestyle BMX.

Scale. The varying size of a place or object in relation to its surroundings.

Sealed. A surface that sealed with a hard material such as tar, bitumen or concrete.

Skate deterrent. Devices that are installed in public spaces to prevent people from skateboard, roller-blading, on street furniture or surfaces.

Slides. A skate trick that involves sliding along a surface in a stylish manner.

Styles. A classification according to general type.

Track. A course that is designed for riding and often has obstacles and features.

Trail. Designed for riders to ride along.

Trailhead. The point at which a trail begins.

Tricks. Manoeuvres or stunts performed on a skateboard, bike or other equipment.

Unsealed. A surface that is not sealed with a hard material such as tar, bitumen or concrete.

Urban realm. The physical environment of urban areas, including streets, public spaces, buildings and other urban infrastructure.

References

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Risk management Principles and guidelines (AZ/NZS ISO 31000: 2018)

Benefit-risk assessment for sports and recreational facilities, activities and equipment (ISO 4980: 2023)