Chapter Twelve
What Makes a Great Trail Great?

"Wow! That was fun!" What sets one trail apart from all the other trails and makes riders say this at the end of the day? Was it the setting and the landscape, the challenge, the recreation experience, or something else? Something about that trail evoked feelings and emotions. Managers must find the elements that made those riders say "WOW!"

Often, when riders are asked what makes a great trail great, the responses include:
• Fun
• Offers varying degrees of challenge
• Good signing and trail maps
• Variety
• Loops
• Enough length to meet the riders' needs
• Scenery, viewpoints, destinations
• Open areas
• Learner loops and places for kids to learn and ride
• Opportunities for camping
• Provides resource protection
• Good parking, kiosk, and restroom facilities
• Flowmentum

Did a wind storm create a mess or an opportunity? Is it an accident that this trail is sandwiched between the root wad and the tree? Does something like this even register as "cool" to a rider? Read on….

Note that all of these except for "fun" are physical features that are provided through good planning, location, and design. "Fun" is at the top of the list because it is often the first rider response, but what is "fun"? In reality, a fun experience is created by having all of the other bullets. Fun is actually a subjective assessment of the experience. It is an emotional response and the greater the trail experience, the higher the emotional response. Five factors come together to trigger that great trail emotion: capitalize on the physical elements, understand and design for the human elements, create trail flow, provide for the riders' needs, and create variety.

Tip, Trick or Trap?

Tip: Developing a WOW trail experience is similar to a painter creating a masterpiece

What makes a great trail great? Location, location, location. All five of the above factors center around trail location, which leads to emotions and experiences. The key to a great trail location is knowing what to look for and then finding it, so taking the time to do a thorough reconnaissance is essential.

Talk about picture perfect! This view has outstanding foreground, middleground, and background with a variety of colors, shapes and textures. WOW, what will be around the next turn in the trail?

Capitalize on the Physical Elements

The physical elements are the features of the landscape that the planners or designers have available to help mold the quality of the trail experience. These features can be grand or subtle.

First, planners and designers must find the WOW. Every region has its own WOW. Experiencing that variety of WOW is why groups of riders travel to different areas and regions. Whatever that feature is, good planners and designers will find it and showcase it.

Second, planners and designers must find the little wow, the subliminal absorption. The riders absorb the physical elements on two levels. The first level is the conscious level. The riders consciously see the big, showy elements above and think, "WOW, that is cool!" The second level is the subconscious level. The riders see the wow, but the riders don't remember seeing the smaller wows because those wows aren't registered at the same time as the larger wows. Instead, these smaller wows get recorded in the riders' subconscious minds as small but cumulative images. At the end of the day, the riders' minds add the subconscious images with the conscious images to create a subjective assessments: "WOW, that was really COOL!" But when asked what made the riders say that, the response is often a nebulous "stuff" because the riders don't consciously know.

If you ride by giant sequoias every day, this could be a ho-hum experience. For everyone else, it is a WOW. The contrasting black fire scar accents the shape of this feature and looks like an entrance to a cave and it sets this tree apart from the others.

The astute trail locator with creative vision will seek out these subliminal images and locate the trail so the riders' eyes see them, even though it is a subconscious recognition. This awareness of the little things can play a big part in making a great trail great.

This burn has a bunch of uprooted trees, but this is the only one with a peep-hole through it. Subtle, but uniquely different.

Great trail vision. The locator found this gap in the rocks and then figured out a way to get the trail there. Being nestled in the landscape produces the same feelings as panoramic views above the landscape.

When the trail locator finds a unique feature like this, it gets logged into the GPS as "must be here." Seeing and riding through an attraction like this is a WOW experience and a great photo opportunity.

Winding through the rock canyon is an incredible experience and a WOW moment. This will be talked about at the campfire for several years.

Creative location. How cool is this to ride through? Unique? Memorable? Yes. Depending on approach speeds, alignment, and sight distance, this may need a warning sign.

This could be an old log deck or old bridge stringers, but it is a feature that stands out in this sea of green. Why? It has more mass than everything else in the setting and it is a horizontal structure when everything else is vertical.

Suffer from vertigo? How can the ability to access a viewpoint like this not be a WOW experience? Will this moment be talked about at the end of the day?

Before the fire, these boulders may not have been visible or unique, but now they provide a stark contrast in color, form, and texture from the rest of the landscape. The trail locator needs to figure out the best view angle and direct the trail and the riders' eyes toward it.

Except for some outstanding vistas, this landscape had few WOWs. When the designer found this rock, the trail HAD to go under it. It offers a unique shape, the only shade, and the only water. The colorful lichen on the rock adds to the feature. Note the cobble rock to harden the spring crossing.

Obviously, this is a great view and the riders' eyes have been directed right at it, but equally striking are all of the contrasting shades of green. Other than the mountain top, all of the other shapes and textures are green.

This unique rock formation is pretty well hidden from view, but thorough reconnaissance discovered it. The rider will pass by it in one second but the shutter will have snapped and the image captured in the riders' minds.

Locals get used to seeing things that could be little wows to non-locals. This gnawed beaver tree is an interesting feature to non-locals. The size of the tree and the size of the gnawed chips set this tree apart from the other skinny ones. It would have been better if we could have located the trail between the log and the stump, but there wasn't room without disturbing the site.

This tree has had a tough life. These are called character trees because they are so different from all of the others. It is fire-scarred and has been hit by lightning at least twice.

Not grand in scale, but grand in shape. When all the other shapes are vertical, this heart stands out. Can you imagine having your family stop and pose for a shot through the heart? Neat.

This area is almost like traveling through a fairy-tale. Running the trail into the vegetative tunnel made the whole trail experience a WOW.

The colors, textures, and shapes in this overhanging rock make it a little wow.

The flowing shape of this trail harmonizes with the landscape. It fits, so the rider also feels like he fits into the landscape.

Every part of the country has a unique beauty. Find it and highlight it. When the desert is blooming, it is glorious, which transfers to the rider as a glorious day.

This charred stump is different and contrasts nicely with the fall grasses and shrubs.

Understand and Design for the Human Elements

The arrangement of the physical features on a trail can trigger an emotional response within the rider. There are two components of this element: human perception and feelings.

Human Perception. What riders see, the order in which they see it, and how they interpret what they see forms a perception of the trail that molds the judgment of the experience. That perception is formed by the arrangement of natural features to form shapes, anchors, gateways, and edges. A trail that capitalizes on these features is one that will trigger an emotional response.

Some ways planners and designers can capitalize on human perception include the following:

Shapes. Does the shape of the feature fit into the perception of what is natural?

Anchors. Use anchors to bond the trail to the landscape.

The trail following this linear seismic line does not have a natural shape and fights with the landscape. There is no opportunity to change the viewshed or the experience of the rider.

Even though this trail has been hardened, it still has an inviting shape that appears natural.

This huge rock with cool ferns growing out of the top firmly anchors this trail. The fact that the trail wraps around it rather than just passing by it makes this feature a stronger anchor.

An excellent example of great trail location. Being anchored by both the huge tree and the rock, the trail fits and flows with the landscape.

This landscape doesn't offer a lot of structure which is why the trail absolutely had to pass through and be anchored by these rocks.

Gateways. Use a gateway as a threshold that riders pass through. It confines the trail and frames it with the landscape. Two anchors side by side can become a gateway.
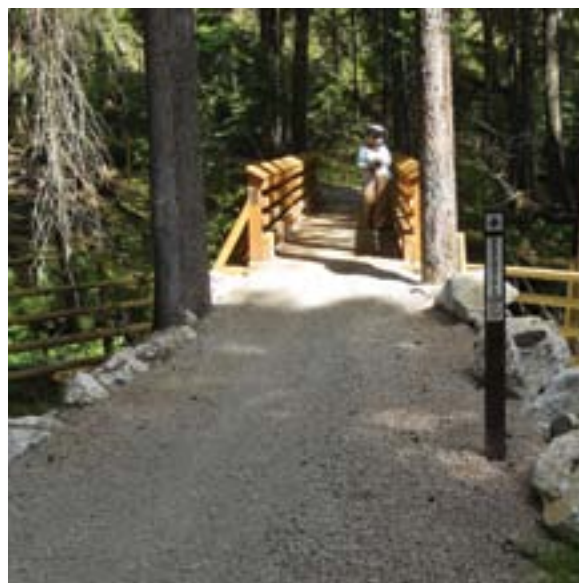

Talk about a dramatic gateway! This WOW will be etched in the riders' memories.

All of the glory doesn't have to go to the designers. Here, the maintenance crew had the vision to turn this blowdown snag into an interesting gateway.

A couple of smaller rocks had to be pushed out of the way, but the designer had the vision of what would remain, a great gateway.

The bridge itself is a gateway, but the trail has been carefully located and designed to fit between these two trees which enhances the gateway effect.

In a landscape pretty much devoid of gateway structure, this cattleguard becomes the gateway and it frames the riders' eyes of the great background view.

Edges. Use edges such as cliffs, streams, fencelines, vegetative changes (either natural lines or ones formed by wildfires or logging), ridge tops, rimrock, etc. Part of human nature is that riders tend to gravitate toward edges, so when a trail follows an edge, it is satisfying one of the human needs. Like anchors and gateways, edges confine riders and the trail.

This Russell fence provides a scenic edge for this trail. Though artificial, the edge fits the landscape and enhances the rider experience.

Good trail location. This trail follows the edge of the vegetative change and it curves with the natural curve of the tree line. Had the trail gone through the middle of the meadow, it would not fit our perception of "natural."

This lava flow provides a dramatic and beautiful edge for this ROV trail.

Part of our human nature is to gravitate towards water, so the stream provides an edge for this trail. The sight and sound of a babbling brook makes a great photo or lunch opportunity.

Human Feelings. Shapes, anchors, gateways, and edges are all a spatial arrangement of natural features. Because they trigger an emotional response from the rider, they are powerful design tools. Those tools form the perception of the trail, but the trail's location and design also stimulate feelings. By having positive feelings about the trail, the trail experience and thus the recreation experience is likely to be positive also. Great trail planners and designers create feelings of safety, efficiency, playfulness, and harmony.

Safety. Am I within my comfort zone? Am I going to be able to make it back to the trailhead? Everyone has a different comfort zone, therefore it is imperative that the condition of the trail be effectively communicated to the public. It must be designed according to its TMO, maintained according to the TMO, and be signed accordingly. Riders can get out of their comfort zone when signs are missing, the tread does not appear stable or of adequate width, trees haven't been cut out, or the trail is so overgrown it is hard to distinguish the tread from a game trail. All of these make the riders question what they're getting into.

Comfort zone does not mean the trail is free of challenge. Comfort zone is how a rider feels on the trail on a given day. Individual riders will have differing levels of comfort on the same trail. Trails are not one size fits all. Challenge is part of the experience the trail provides. Riders make a conscious decision to seek out challenges and many riders are in their comfort zone doing so. If challenge is imposed on the rider by surprise, it then becomes a risk, and risk can lead to liability.

Above, the drivers on the rim chose safety for their comfort zone. The driver in the hot tub chose risk. As the recovery strap is attached, he risked his pride as well.

If design, construction, or maintenance forces the rider outside of his comfort zone, the agency is at risk.

This trail is totally overgrown with vegetation. When riders wonder, "are there hidden logs or rocks?" they are probably outside of their comfort zone.

Hmmm, what am I getting into? Will I need those after the next section of trail?

Efficiency. This is the use of the landscape and structures to efficiently meet the riders' needs.

With efficient design, the rider would rather be on the trail than off it because it is the path of least resistance, it's the fastest, and it is fun. Why is this important? When efficiency is lost, trail widening, braiding, and resource impacts can occur. Efficiency is lost when:
• Riders bypass soft, wet, heavily eroded or excessively rough areas.
• Riders bypass structures like waterbars or trail hardening.
• *Moguls* develop due to speed and straight alignment.

Above and left, well-designed and constructed structures increase the efficiency of the trail which increases resource protection.

Right, these pavers have been lined with logs placed in a herringbone pattern. The logs not only encourage riders to stay on the structure but also deflect runoff water into vegetation before entering a stream.

Left, the original trail on the right became soft and rutted, so it was more efficient for riders to cut through the trees. Some riders will choose to ride the rutted route because that is the experience they want and the efficient route they want to take. But most riders will choose the shorter and drier route as the most efficient path, thus widening the trail and damaging vegetation.

Riders will usually ride as fast as their machines and their skills will allow them. That is part of the challenge and the experience. Because of that, speed limits do not work. Control speed through tight alignment and narrow clearing.

The end of this paver installation was improperly constructed resulting in a poor approach to the structure. It is no longer the efficient line and riders are choosing to go around it.

Playfulness. A trail that is playful moves with the landscape and uses the landscape to create flow and a fun factor. The creative use of anchors, gateways, and edges is playfulness. A continual change in horizontal and vertical alignment is playfulness. Continually changing the viewshed of the rider is playfulness. Constantly changing the experience of the rider is playfulness. Playfulness is one reason that roads do not make good trails. Roads tend to be straight and predictable. Trails are curvilinear with a sense of wonder around each curve. Roads cut through trees, trails go around them. Roads blast through rocks, trails go around them or over them.

Harmony. Harmony is a riders' feeling about how well the trail fits the landscape. A harmonious trail utilizes shapes, edges, anchors, and gateways and is designed to be playful and efficient while keeping the riders in their comfort zone. Harmony puts it all together. Harmony has rhythm and flow. A highly engineered trail with multiple structures and trail hardening is less harmonious than a primitive natural surface trail. A newly constructed trail isn't as harmonious as an established trail. A machine-built trail may not be as harmonious as a hand-built trail.

This trail is both playful and efficient. The rider wants to stay on it and can't wait for the next corner.

Use whatever topography is available to play with the landscape. The location of this trail fits the landscape, adds flowmentum and fun factor, and improves drainage.

This is a great example of playful location. Criss-crossing this dry draw creates a rollercoaster effect that is fun and sustainable.

Though an open landscape, this trail with two climbing turns blends into and harmonizes with the setting. The key to that is to minimize cuts and fills and to use whatever vegetation is available to screen the trail.

This ridgeline trail bisects the landscape and doesn't fit the natural shapes and contours. It doesn't vary the viewshed of the rider and it's boring because it is so predictable. Ridgetop trails are fall line trails and generally don't drain well. This trail definitely fits into the category of too long and too steep.

These trees twist and turn and so does the trail. Everything fits and flows together. Harmony is a perception that everything is right. As a perception, what is harmonious for one rider may not be harmonious for another.

This is a much better example of how a trail that follows the ridgeline can harmonize with the landscape. The serpentine alignment switches from one side of the ridge to the other. This creates drainage and varies the rider viewshed. Very little of it is on the actual ridgetop except for the last rise. When the rider tops that crest, he is presented with a panoramic and totally WOW view of several mountain ranges.

The riders will tell you when the trail is not in harmony. Placing the trail in the flat portion of this area caused water to pool on the trail. Riders tried to keep out of the water and trail braiding occurred.

The trail will tell you when it is not in harmony with the landscape.
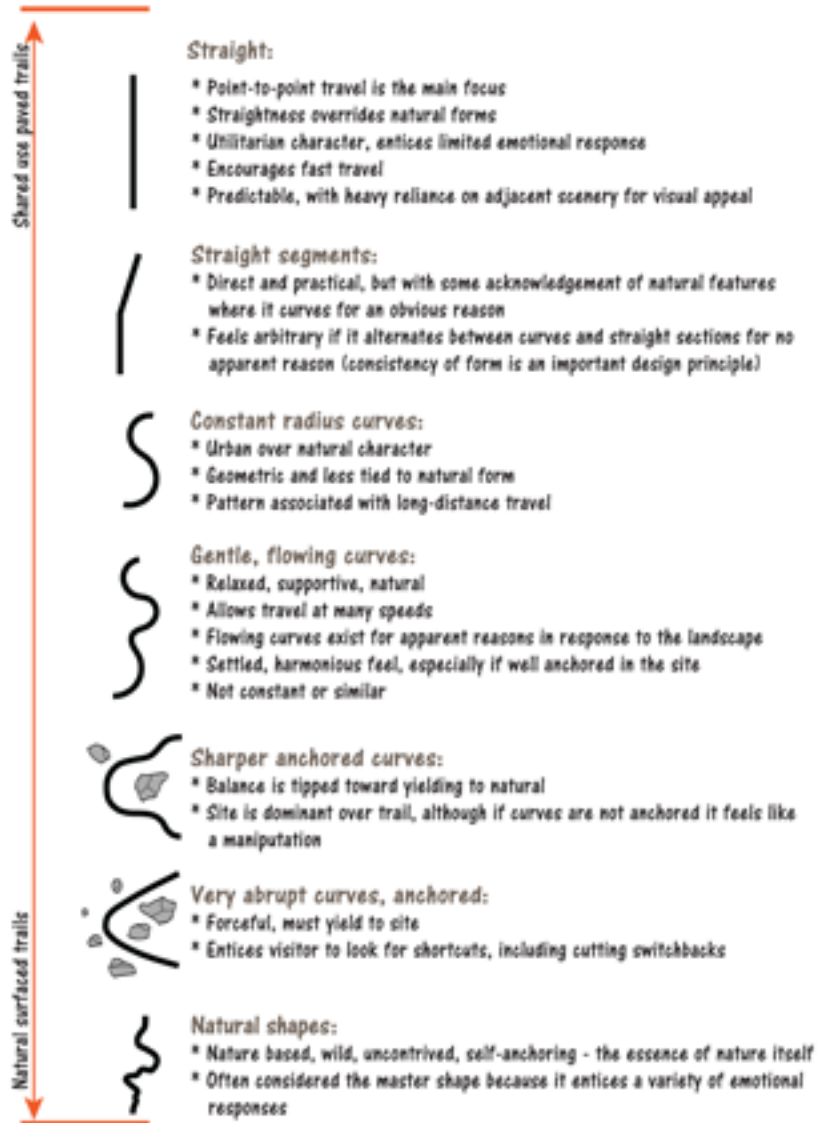
How the Human Elements Affect Design

The riders' perception and reaction to the four factors of the human feeling is what makes a great trail great. The physical trail laying on the ground may be sustainable but it doesn't become a great trail until the combination of the human elements stimulate the riders' emotions and cause the rider to exclaim: "WOW, that was a great trail!"

It is important for the designer to understand this relationship between physical shapes and emotional responses and then to creatively seek and arrange those shapes, anchors, edges, gateways, the big WOW, and the little wow into a sequence that will create an image in the riders' minds and stimulate the riders' emotional responses. The trail is the connecting link between each one of those elements.

Triggering the positive emotional response also includes the riders' perception of the trail as part of the environment. The more that the trail fits the landscape, the more the trail will be perceived by the riders as being natural and the more likely that the trail will stimulate those emotional responses within the riders. The level of that response can be controlled by the physical relationship between the trail and the feature. Altering
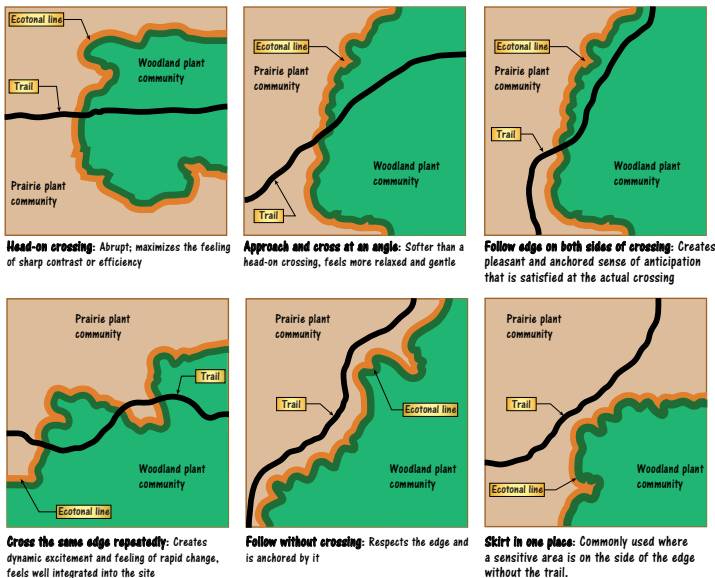
Emotional responses to trail shapes
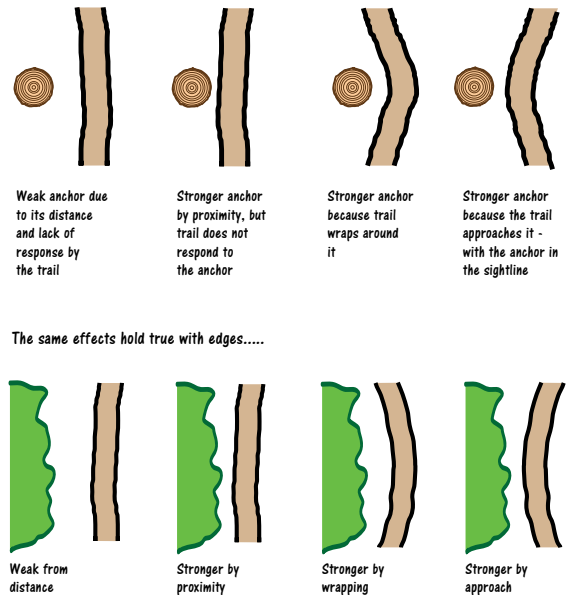The following shapes may induce predictable emotional responses

(left axis, top to bottom: Shared use paved trails → Natural surfaced trails)

Straight:
* Point-to-point travel is the main focus
* Straightness overrides natural forms
* Utilitarian character, entices limited emotional response
* Encourages fast travel
* Predictable, with heavy reliance on adjacent scenery for visual appeal

Straight segments:
* Direct and practical, but with some acknowledgement of natural features where it curves for an obvious reason
* Feels arbitrary if it alternates between curves and straight sections for no apparent reason (consistency of form is an important design principle)

Constant radius curves:
* Urban over natural character
* Geometric and less tied to natural form
* Pattern associated with long-distance travel

Gentle, flowing curves:
* Relaxed, supportive, natural
* Allows travel at many speeds
* Flowing curves exist for apparent reasons in response to the landscape
* Settled, harmonious feel, especially if well anchored in the site
* Not constant or similar

Sharper anchored curves:
* Balance is tipped toward yielding to natural
* Site is dominant over trail, although if curves are not anchored it feels like a manipulation

Very abrupt curves, anchored:
* Forceful, must yield to site
* Entices visitor to look for shortcuts, including cutting switchbacks

Natural shapes:
* Nature based, wild, uncontrived, self-anchoring - the essence of nature itself
* Often considered the master shape because it entices a variety of emotional responses

Following, approaching, and crossing edges
These examples show various ways a trail can interact with a woodland or grassland edge. Note that ecological impacts need to be considered anytime an ecotonal area is impacted by a trail, either running along it or crossing through it.

Head-on crossing: Abrupt; maximizes the feeling of sharp contrast or efficiency

Approach and cross at an angle: Softer than a head-on crossing, feels more relaxed and gentle

Follow edge on both sides of crossing: Creates pleasant and anchored sense of anticipation that is satisfied at the actual crossing

Cross the same edge repeatedly: Creates dynamic excitement and feeling of rapid change, feels well integrated into the site

Follow without crossing: Respects the edge and is anchored by it

Skirt in one place: Commonly used where a sensitive area is on the side of the edge without the trail.

Effects of anchor placement

Anchors have different effects with different layouts...

Weak anchor due to its distance and lack of response by the trail

Stronger anchor by proximity, but trail does not respond to the anchor

Stronger anchor because trail wraps around it

Stronger anchor because the trail approaches it - with the anchor in the sightline

The same effects hold true with edges.....

Weak from distance

Stronger by proximity
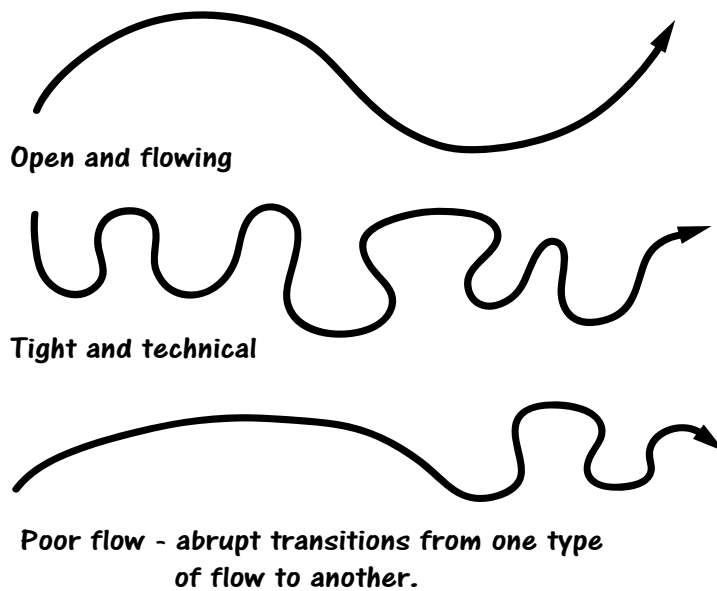
Stronger by wrapping

Stronger by approach

the approach, proximity, or length of time in the proximity of a feature can create a stronger or weaker response.

Create Trail Flow

Flow is the continual horizontal and vertical movement of the trail on the landscape without conflicting with the landscape. Flow is the rhythm of the trail and the riders feel that rhythm as the riders flow with the trail. That flow and rhythm stimulates emotional responses within the riders which is why it helps make a great trail great.

Designers purposefully create flow, rarely does it happen by accident. As designers flag in a trail, they should be riding the trail in their mind and tracking the experience they are creating. Sure, they must keep track of the grade, alignment, and drainage points, but they also must seek out anchors, gateways, edges, and viewpoints. Those experiences need to be mixed up so the riders are encountering variety and cannot wait to see what is around the next curve. Designers control the viewshed of the riders. On a trail with good flow

Open and flowing

Tight and technical

Poor flow - abrupt transitions from one type of flow to another.

that view should be constantly changing. Flow can be open and gentle or tight and technical. A trail that carefully transitions from one to another adds variety and increases the recreation experience.
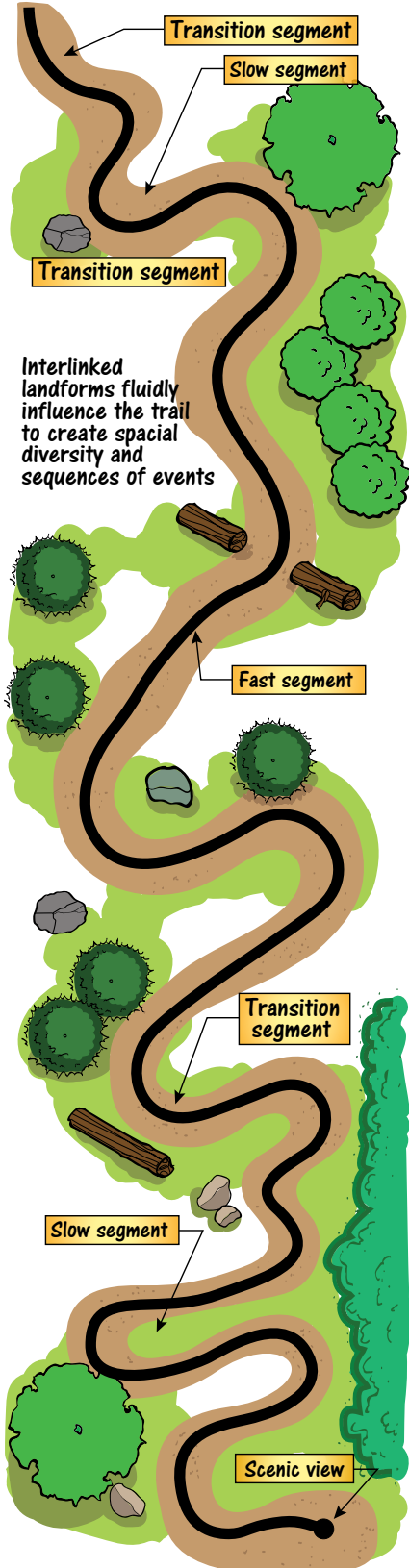
A trail with flow has the following:
- Rhythm, but this does not mean speed. Rhythm is the ability to throw a machine back and forth from corner to corner.
- High fun factor.
- Good control of the riders' view scape. The trail goes where the riders' eye thinks it's going to go. If it doesn't, that creates an awkward moment that can result in tread impacts and risk to rider safety.
- Feels "natural," not artificial or contrived.
- Natural transitions between trail conditions.
- Allows the riders to carry momentum which reduces the need for hard braking or acceleration and therefore reduces tread impacts and maintenance. This is often called "flowmentum."

Trail Flow

Trail flow is a function of thoughtful design and should not be left to chance. The most successful designs are those that respond to landforms and create a sequence of events using anchors, edges, gateways, terminus points, and destinations.

Transition segment

Slow segment

Transition segment

Interlinked landforms fluidly influence the trail to create spacial diversity and sequences of events

Fast segment

Transition segment

Slow segment

Scenic view

Provide for the Riders' Needs

If at all possible, take the riders where they want to go and provide a variety of experiences while doing it.

Create Variety

Edges, shapes, gateways, and anchors need to be creatively mixed up and have short duration. The fenceline makes a cool edge, but not for mile after mile. A great trail will utilize the fenceline briefly, leave it to offer the rider some other features or experiences, and then maybe come back to the fenceline.

This snag is a character tree that is silhouetted by a dramatic panoramic view. The trail has been consciously located to frame the picture and direct the riders' eyes at the best possible angle.

A Closer Look...

Artists have their color palette, but the landscape is the palette for the trail designer. The artist has seven elements with which to create art: line, color, value (contrast), shape (2D), form (3D), texture, and space (scale or depth). Most of these terms have been used to describe the illustrations in this chapter because the trail designers use these same elements to create the images that will mold the riders' perception. Is creating a great trail art or science? It is both.

A Look Back…

Here are some of the elements discussed in this chapter:
- A great trail is actually an emotional response to the trail. Five factors come together to trigger a great trail emotion: physical elements, human elements, flow, provide for the riders' needs, and create variety.
- Capitalize on the physical elements
- Find the WOW
- Find the little wow (subliminal absorption)
- Understand and design for the human elements: perception and feelings
- Human perception is formed by:
    Shapes
    Anchors
    Gateways
    Edges
- Human feelings are how riders feel about a trail's:
    Safety
    Efficiency
    Playfulness
    Harmony
- Designers and planners should creatively and frequently use shapes, anchors, edges, and gateways to form the riders' perception and feelings about the trail
- Manage and maintain the trail to perpetuate those qualities
- Create trail flow. Flow is the rhythm of the trail. Momentum + Rhythm = Flowmentum.
- Provide for the riders' needs by taking them where they want to go and provide the experiences they are looking for. The key is variety
- What makes a great trail great is the riders' perception of it. That perception is controlled by the designer
- The landscape is the designers' palette and like an artist they use the elements of line, color, value, texture, shape, form, and space to create the images that will mold the riders' perception of a great trail