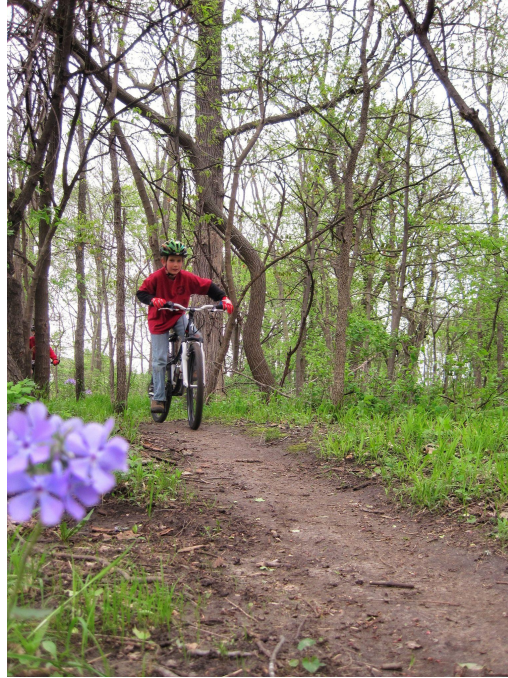
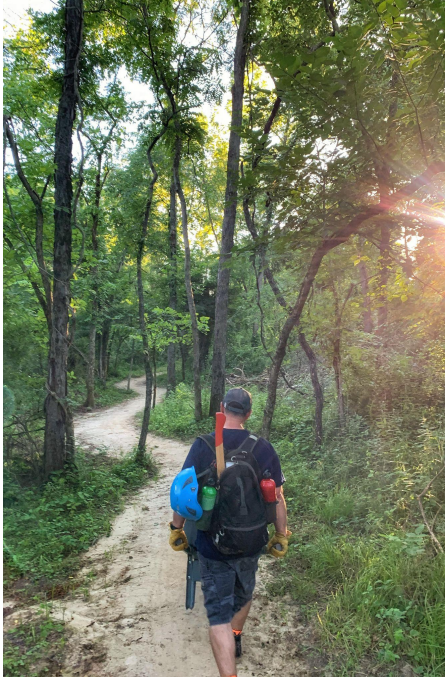


Developing Sustainable Trails



TRAIL DESIGN & DEVELOPMENT

IN YOUR COMMUNITY

Introduction Exercise

★ Please share aloud with the group:

- Your name ..
- Where you are from ..
- Who you are representing ..
- What does “sustainable trail(s)” mean to you?



Ken Barker

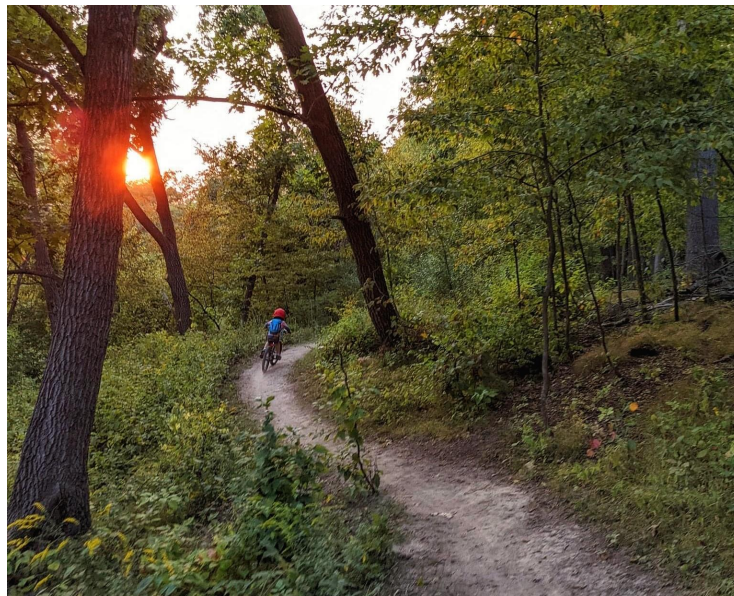
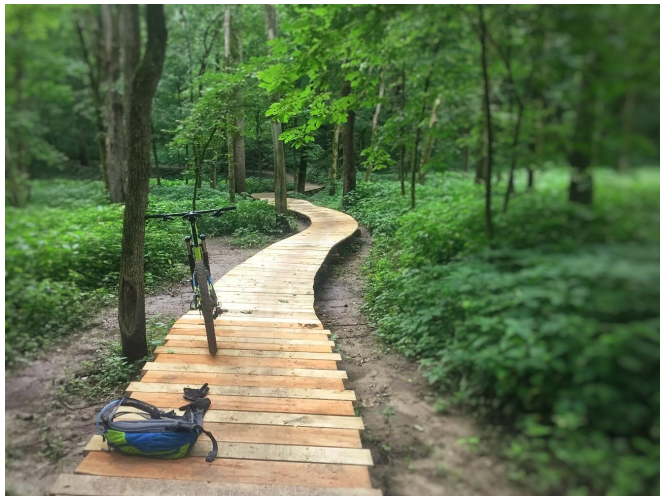


Principal, Backyard Trails LLC



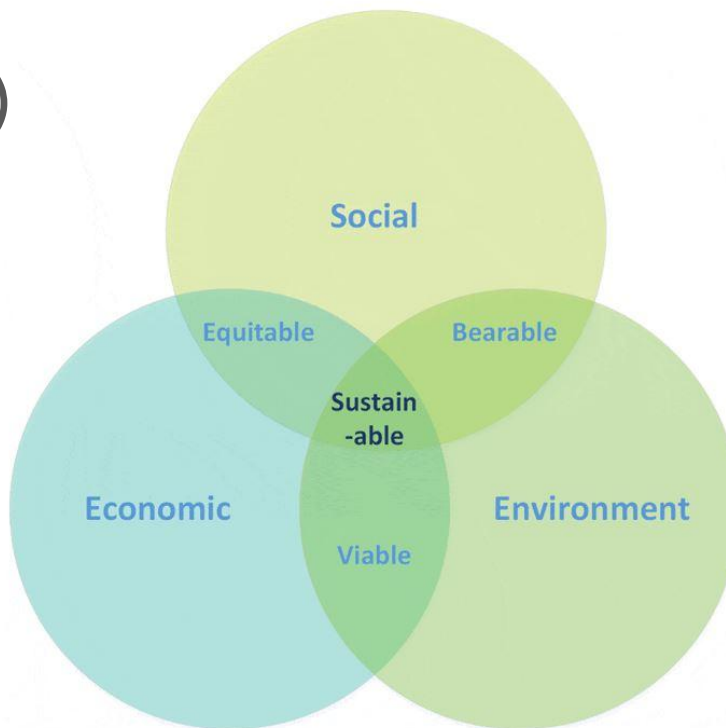
Sustainable Trails

- Supports current (and future) use with minimal impact to resources.



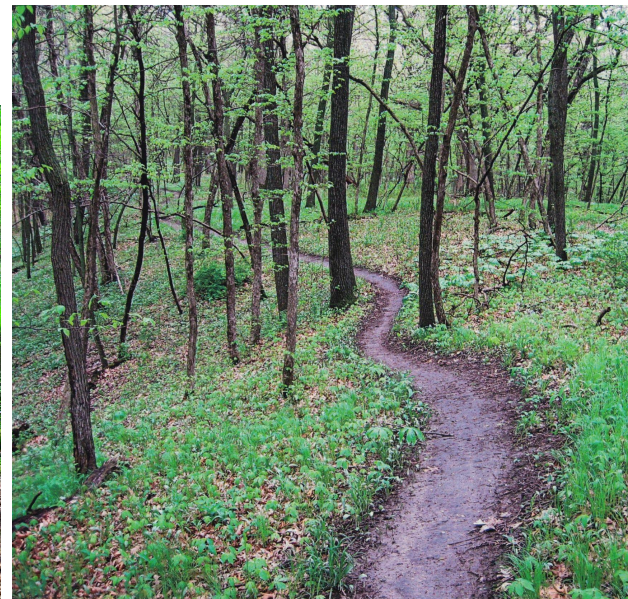
Sustainable Trails

- Physical (environment)
- Social
- Economic



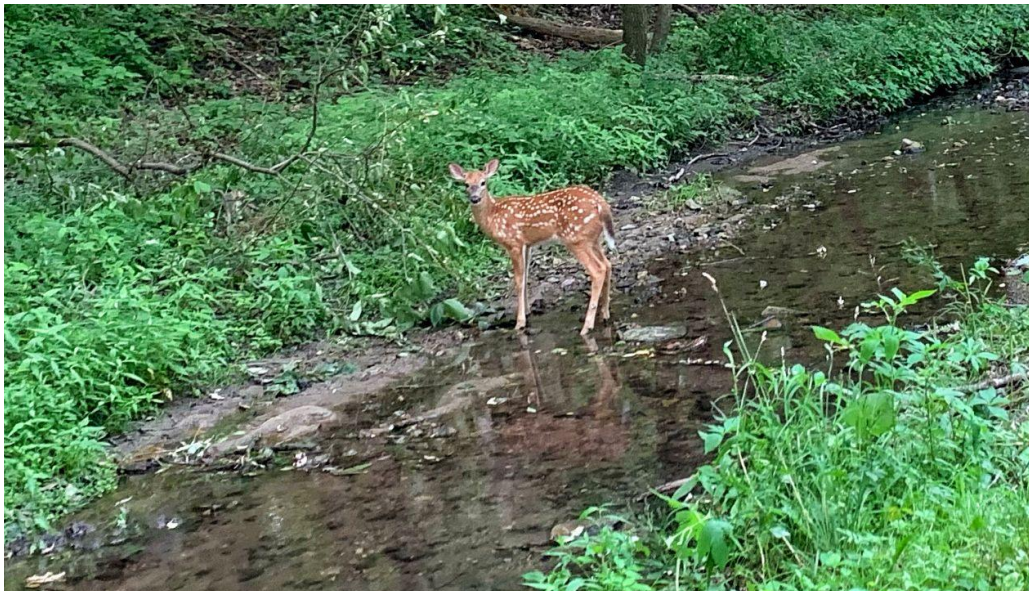
Physical Sustainability

- Property designed & built to have minimal impact
 - Resilient to erosion.



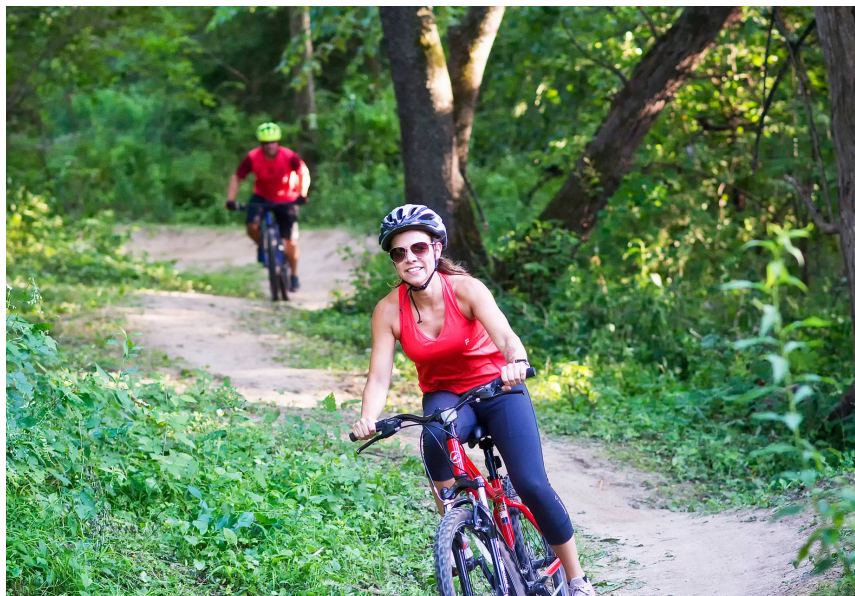
Physical Sustainability

- Minimal impact impact to flora & fauna.



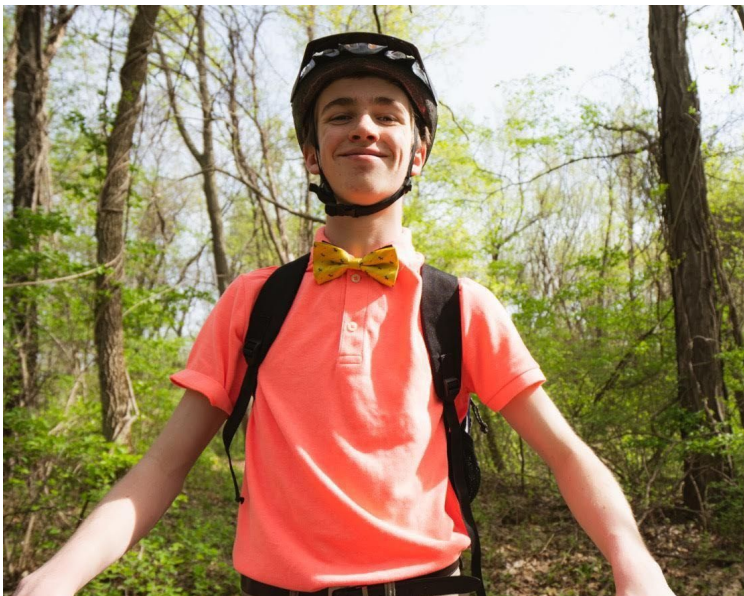
Social Sustainability

- Properly designed & built to meet user needs ..



Social Sustainability

- Provides desired experience for intended user ..



Economic Sustainability

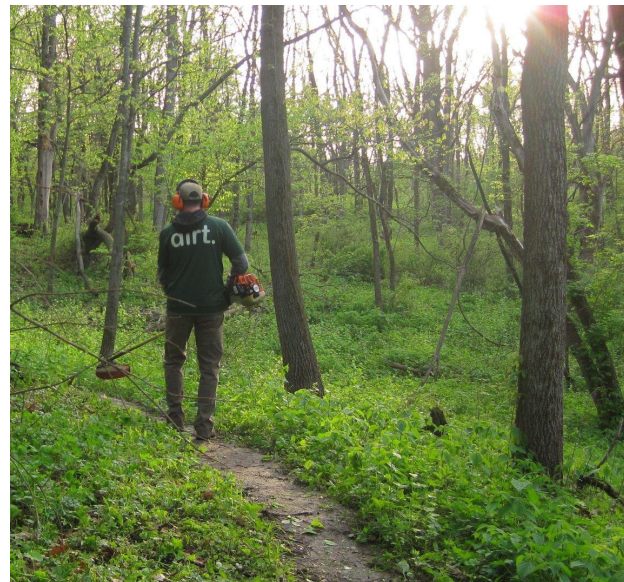
- Properly designed & built to leverage resources ..



\$\$\$

Economic Sustainability

- Reasonable & appropriate budgets for development & operations ..



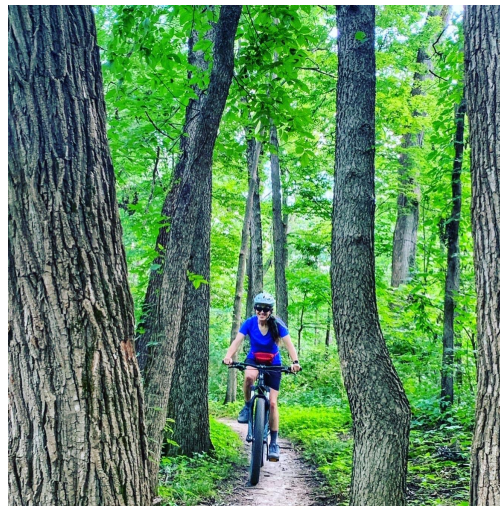
Economic Sustainability

- Benefits of the trail outweigh the costs ..
 - Trail can be built & and maintained.
 - Outdoor recreation economy.
 - Community health & wellness.
 - Opportunity for urban renewal.



Economic Sustainability

- Community Health Benefits ..
 - Every \$1 in trails \approx \$3 medical cost savings.
 - Moving and being in nature ..
 - Reduced stress/anxiety
 - Cardiovascular health



*Wang G, et al. A cost-benefit analysis of physical activity using bike/pedestrian trails. Health Promotion Practice: 2005; 6(2): 174-9

Sustainable Trails

- Proper Planning, Design, & Construction ..



Physical Sustainability

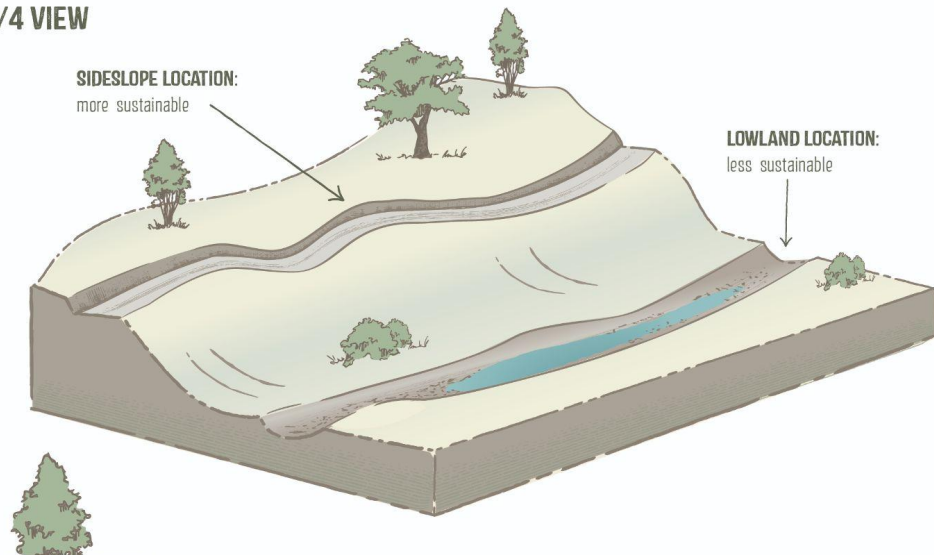
- Proper planning, design/layout from the get go ..



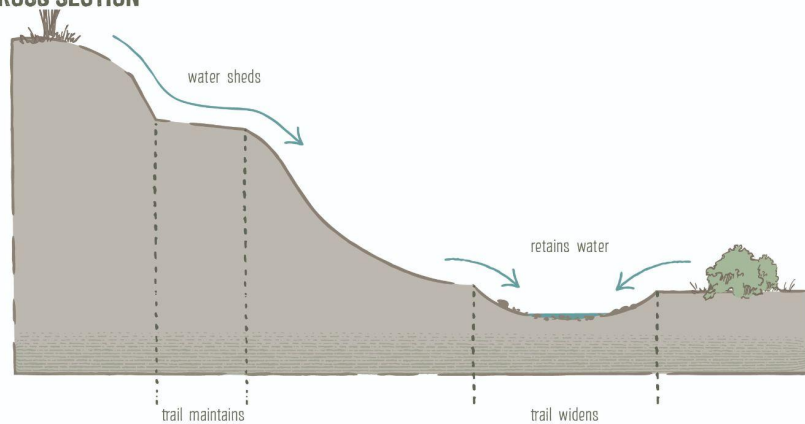
Physical Sustainability

- Side hill vs. low lying trail location ..

3/4 VIEW

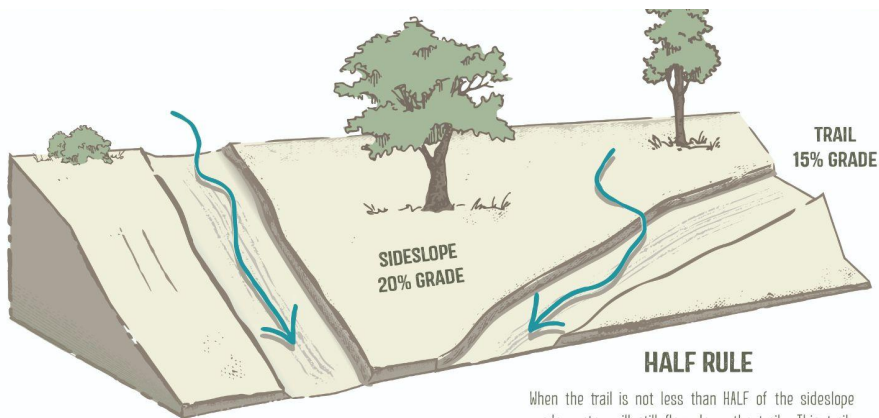


CROSS SECTION



Physical Sustainability

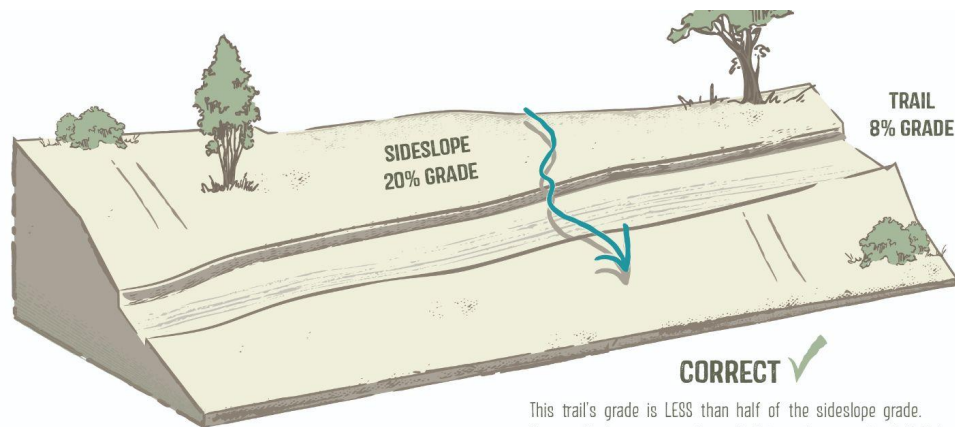
- Fall line alignment & the half rule (guideline) ..



FALL LINE TRAIL

When the trail grade follows the grade of the slope, gravity will ensure water will flow down the trail, washing it out and causing damage.

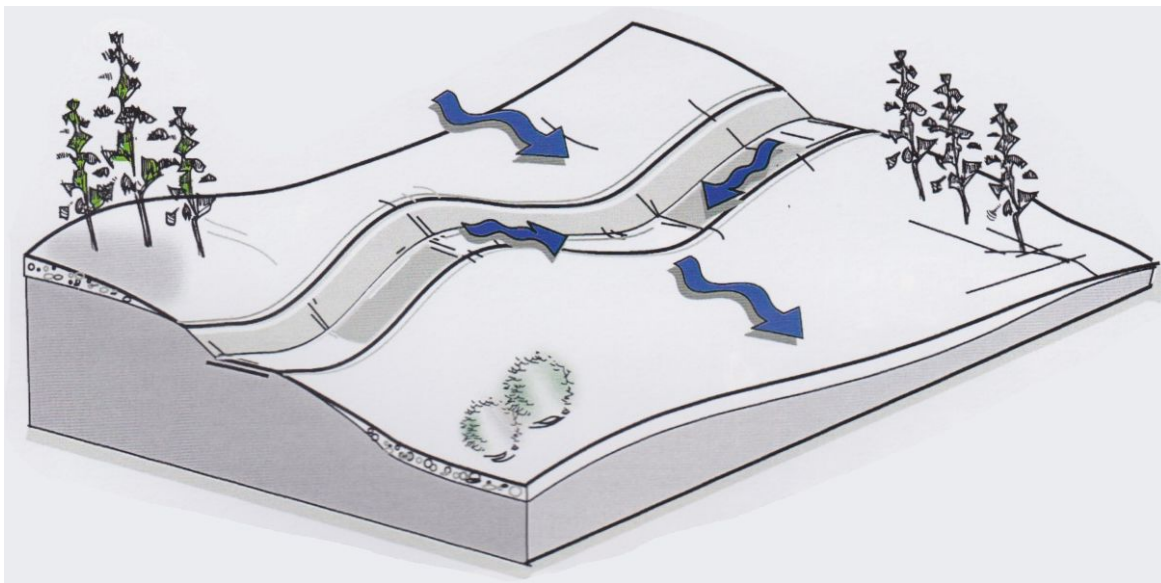
When the trail is not less than HALF of the sideslope grade, water will still flow down the trail. This trail breaks the Half Rule.



This trail's grade is LESS than half of the sideslope grade. Water will sheet across the trail. This trail meets the Half Rule, making for a longer lasting, sustainable trail.

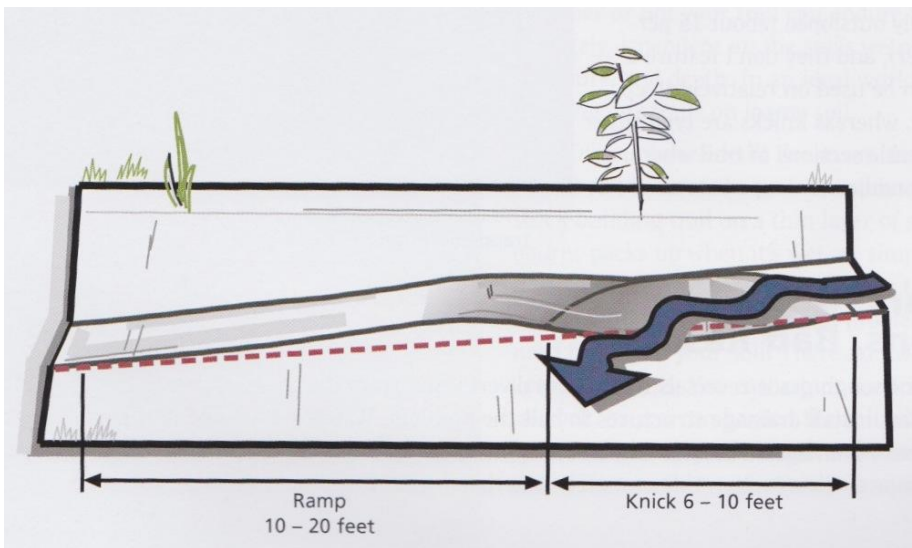
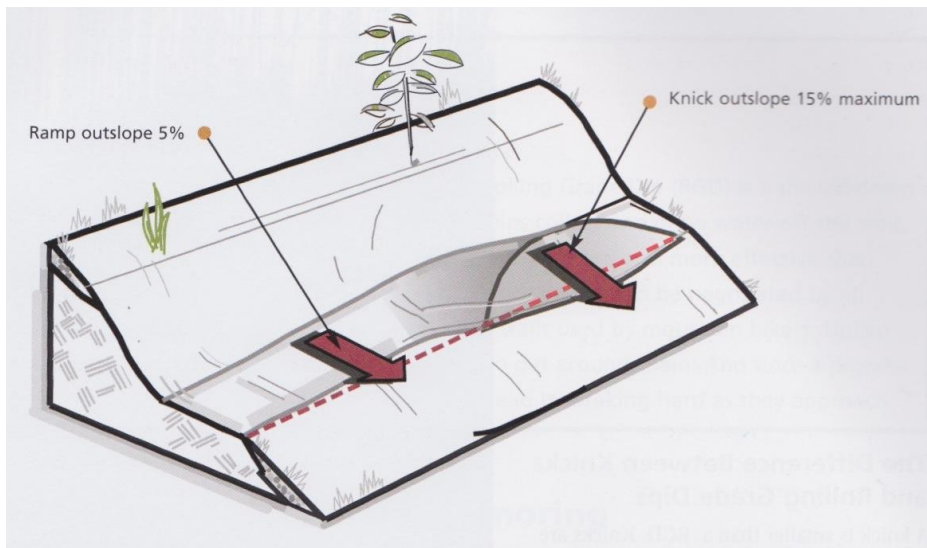
Physical Sustainability

- Grade reversals & drainage features ..



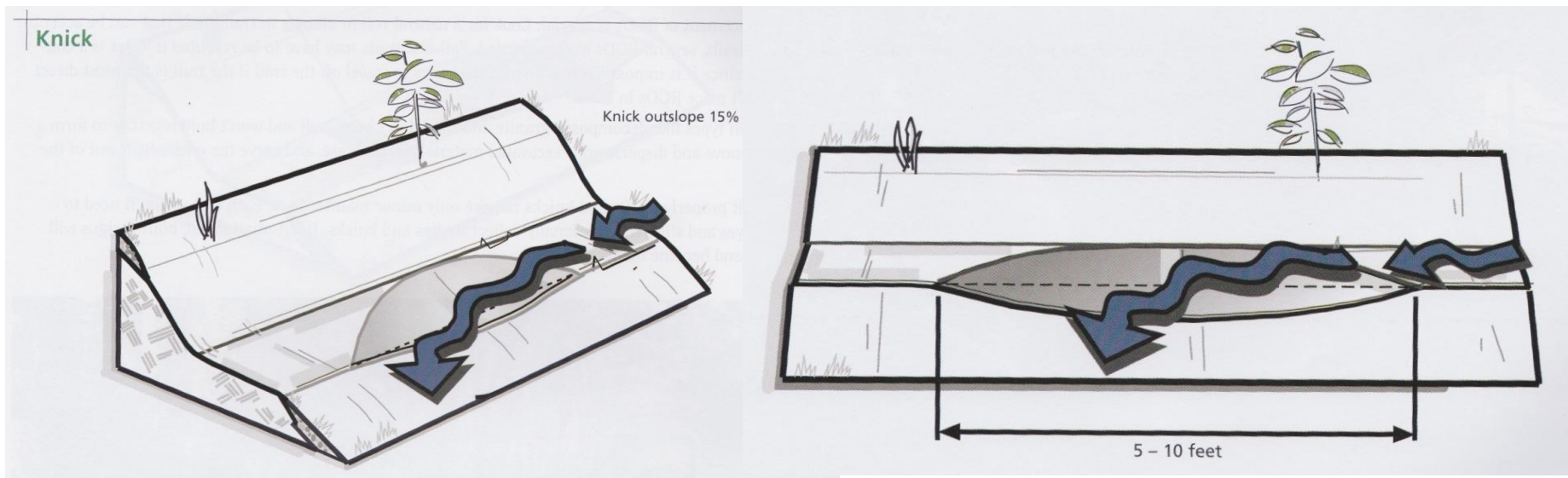
Physical Sustainability

- Grade reversals & drainage features ..



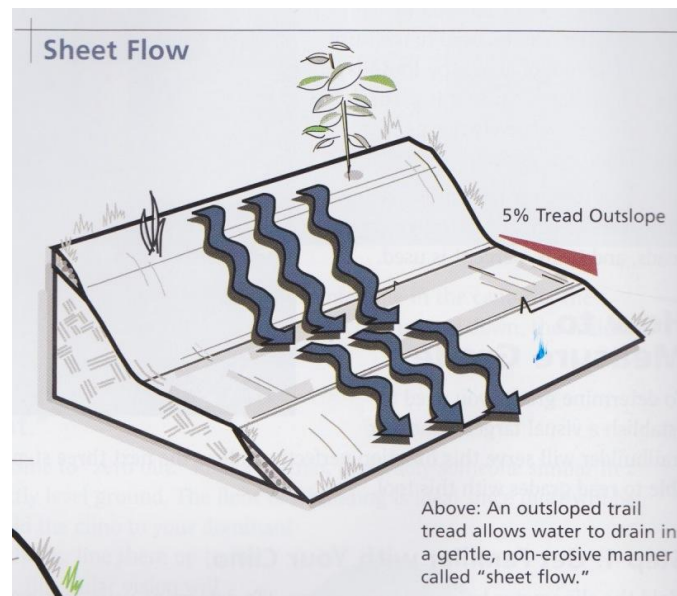
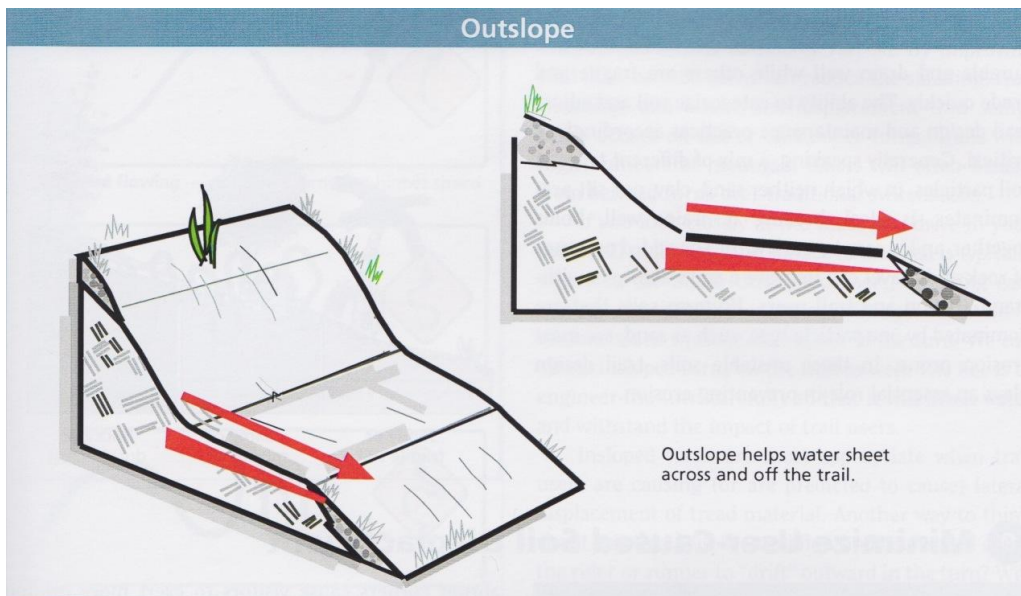
Physical Sustainability

- Grade reversals & drainage features ..



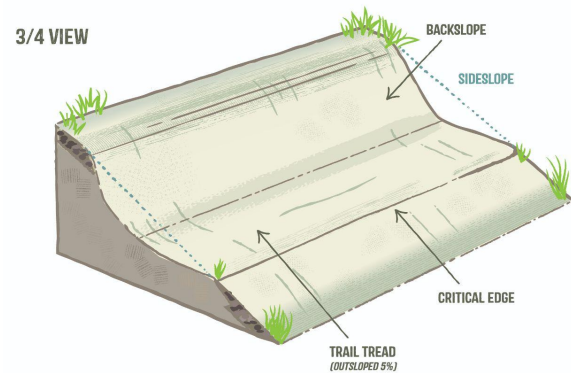
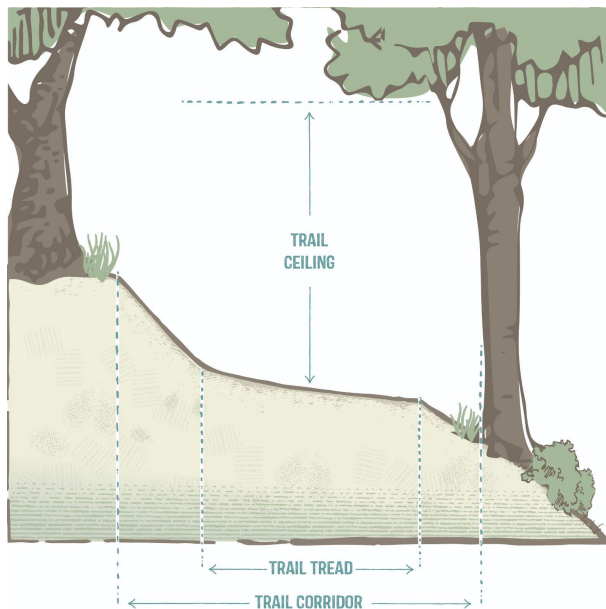
Physical Sustainability

- Trail tread (surface) outslope ..

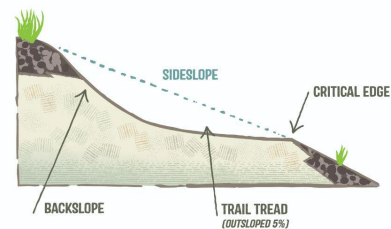


Physical Sustainability

- Trail tread (surface) outslope ..



CROSS SECTION



Social Sustainability

- Properly designed & built to meet user needs ..



Social Sustainability

- Provides desired experience for intended user ..



Social Sustainability

- Planning & design .. understanding the User ..
 - What are their interests and objectives?



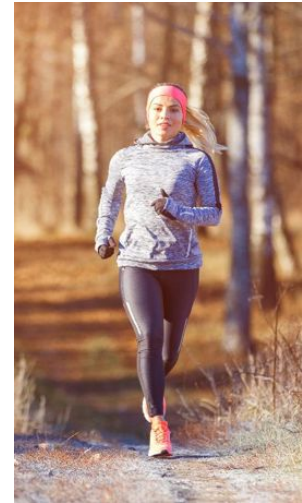
Views, destinations, and aesthetics



Play

Social Sustainability

- Planning & design .. understand the User ..
 - What do they want, why are they there?
 - ★ Hikers .. efficiency, nature, escape
 - ★ Runners .. exercise, challenge, solitude
 - ★ Mt. Bikers .. exercise, challenge, fun
 - ★ Equestrians .. loops, solitude, escape
 - ★ Climbers .. efficiency, destination



Social Sustainability

- Trails designed and managed with intention ..
 - Designed to reduce user conflict.
 - Prevents unauthorized trails.
 - Variety of engaged users.
 - Builds trail stewardship.
 - Quality of life.



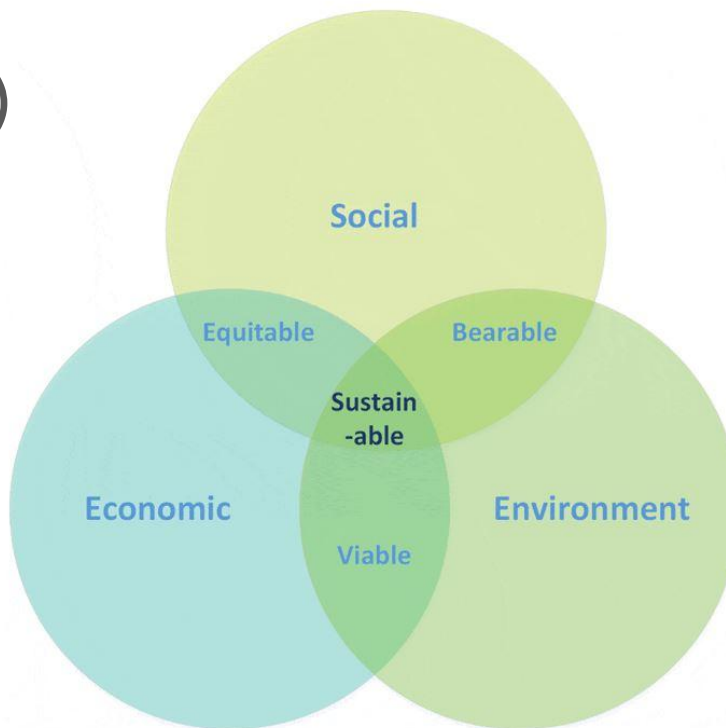
Sustainable Trails

- Proper Planning/Design & Construction ..



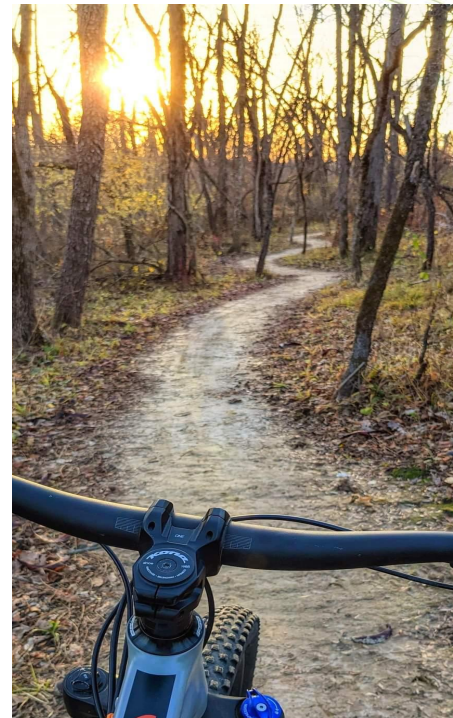
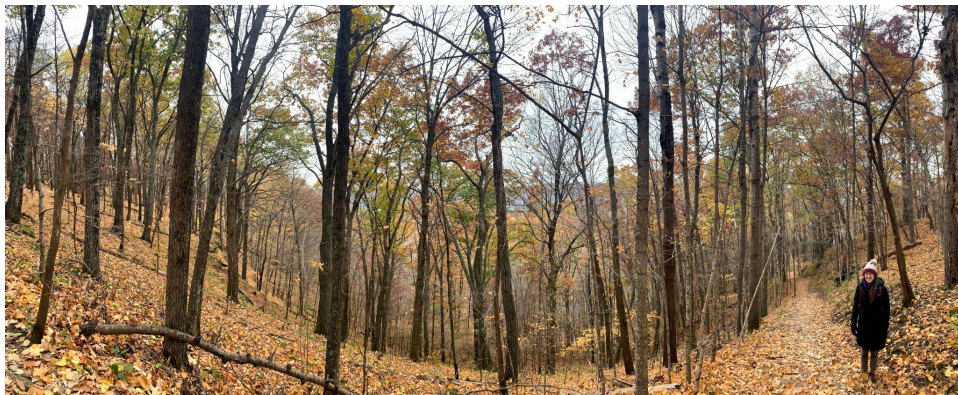
Sustainable Trails

- Physical (environment)
- Social
- Economic



Sustainable Trails

- Plan for it
- Build it
- Use it



Sustainable Trails

- Q & A

