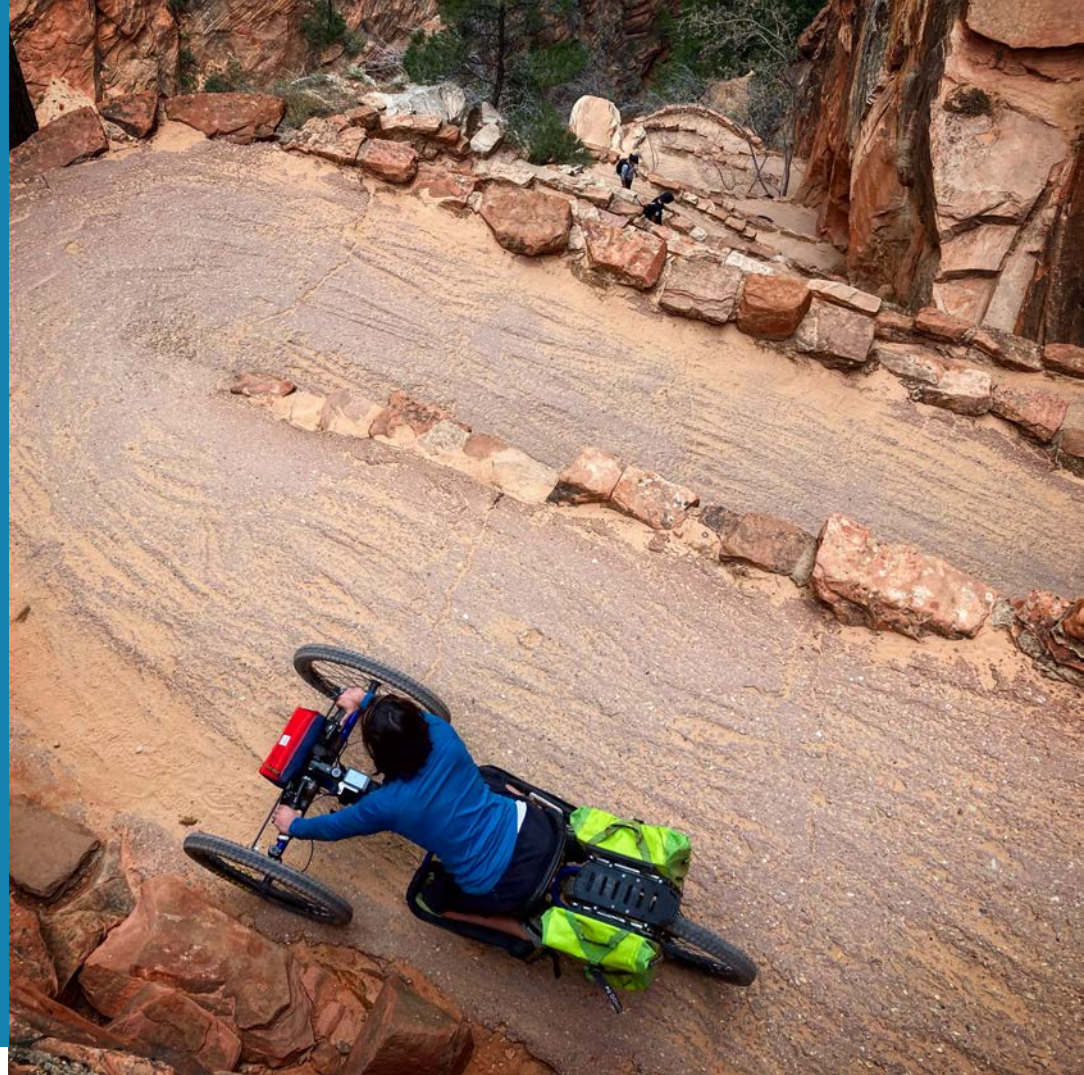


Quinn Brett  
US Fish and Wildlife

*Trail Information  
and  
Trail Usability*

March 2023



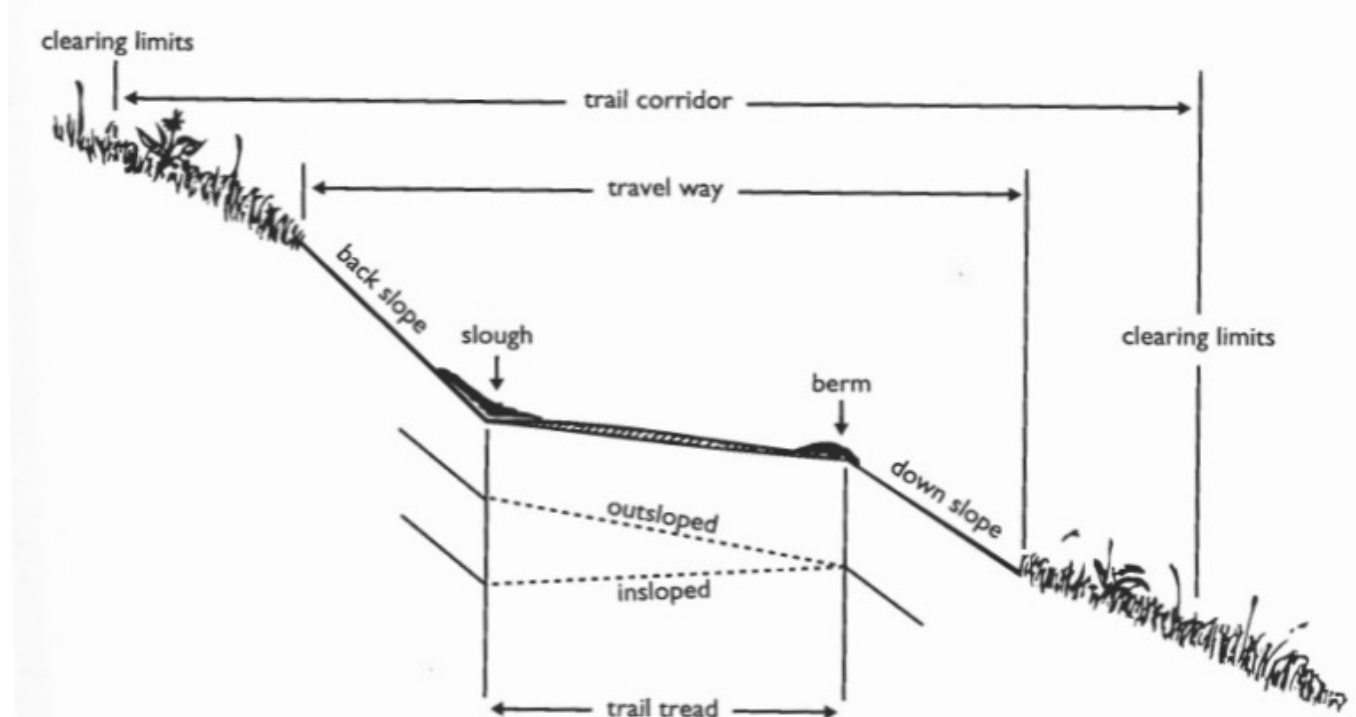
# ADAPTIVE RECREATION: HIKING AND BIKING FOR MOBILITY DEVICE USERS

# TRAIL INFORMATION AND USABILITY

Step 1- Conveying updated information on trails to users

Step 2- Awareness of trail fundamentals and common barriers.

Step 3- Use of trail sustainability/usability tactics when building or doing maintenance on existing trails.



# Usability

## Why not Accessibility?

Trails, particularly those providing solitude, primitive, unconfined recreation... qualities of wilderness character, rarely can be “accessible” in standard trail specifications.

These trails are still very usable given mobility device.



New technology for mobility devices has increased usability.

- Wheelchairs, off-road wheelchairs

**VS**

- Other Power Driven Mobility Devices (OPDMD's)

# DESIGNING TRAILS

## ➤ Trail Class

Provide full spectrum of experiences

## ➤ Managed Use

Usually a small subset of all the allowed uses on the trail.

## ➤ Designed Use

The Managed Use of a trail that requires the most demanding design, construction, and maintenance parameters and that, in conjunction with the applicable Trail Class.



# BROADENING TRAIL INFORMATION

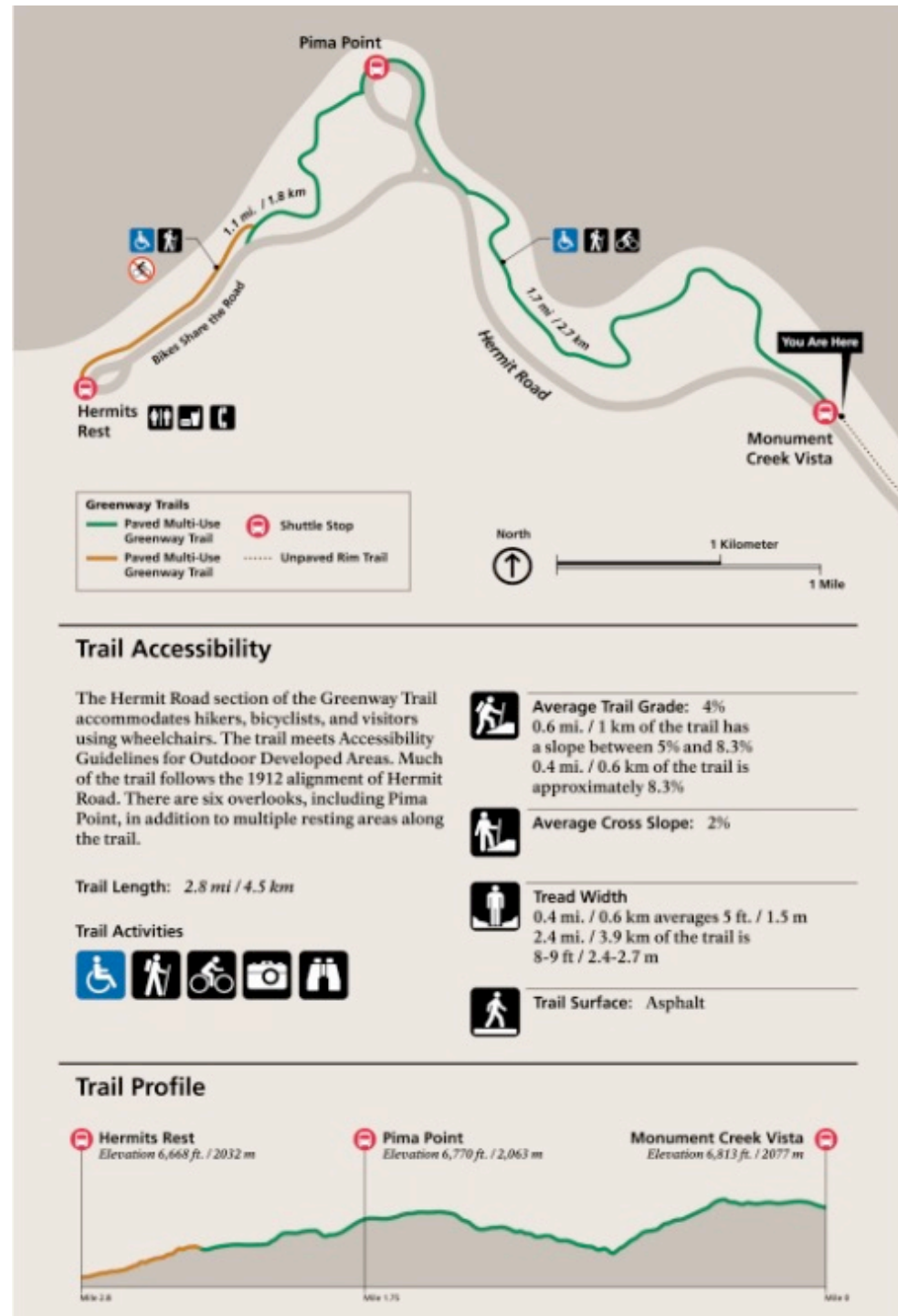
## Requirements for Trailhead Signage:

1. Length of the trail or trail segment
2. Surface type
3. Typical and minimum tread width
4. Typical and maximum running slope
5. Typical and maximum cross slope.

Architectural Barriers Act Accessibility Standards; Outdoor Developed Areas  
: **F216.13 TRAILHEAD STANDARDS.**

# TRAIL SIGN INFORMATION

This requirement applies to new trailhead information signs regardless of whether the newly constructed or altered trail complies with the technical requirements for trails.



# AMERICAN WITH DISABILITIES ACT (ADA) VS. ARCHITECTURAL BARRIERS ACT (ABA)

Title II – covers state and local government programs -protects qualified individuals with disabilities from discrimination on the basis of disability in services, programs, and activities

Title III -- prohibits discrimination on the basis of disability in the activities of places of public accommodations. Requires newly constructed or altered places of public accommodation to comply.

## Federal agencies –

The Architectural Barriers Act (ABA) requires access to facilities that are designed, built, altered, or leased with Federal funds. The Access Board is the federal agency responsible for enforcing the ABA.



## POLICIES, GUIDELINES AND STANDARDS

**ADA Facts** = 1990. Partially informed by the ABA and its access to facilities but expansive to employment, transportation, public accommodations, communications and access to state and local government' programs and services.

**ABA FACTS** = 1968. Federal lands. Addresses the built environment.



# LEGAL REQUIREMENTS

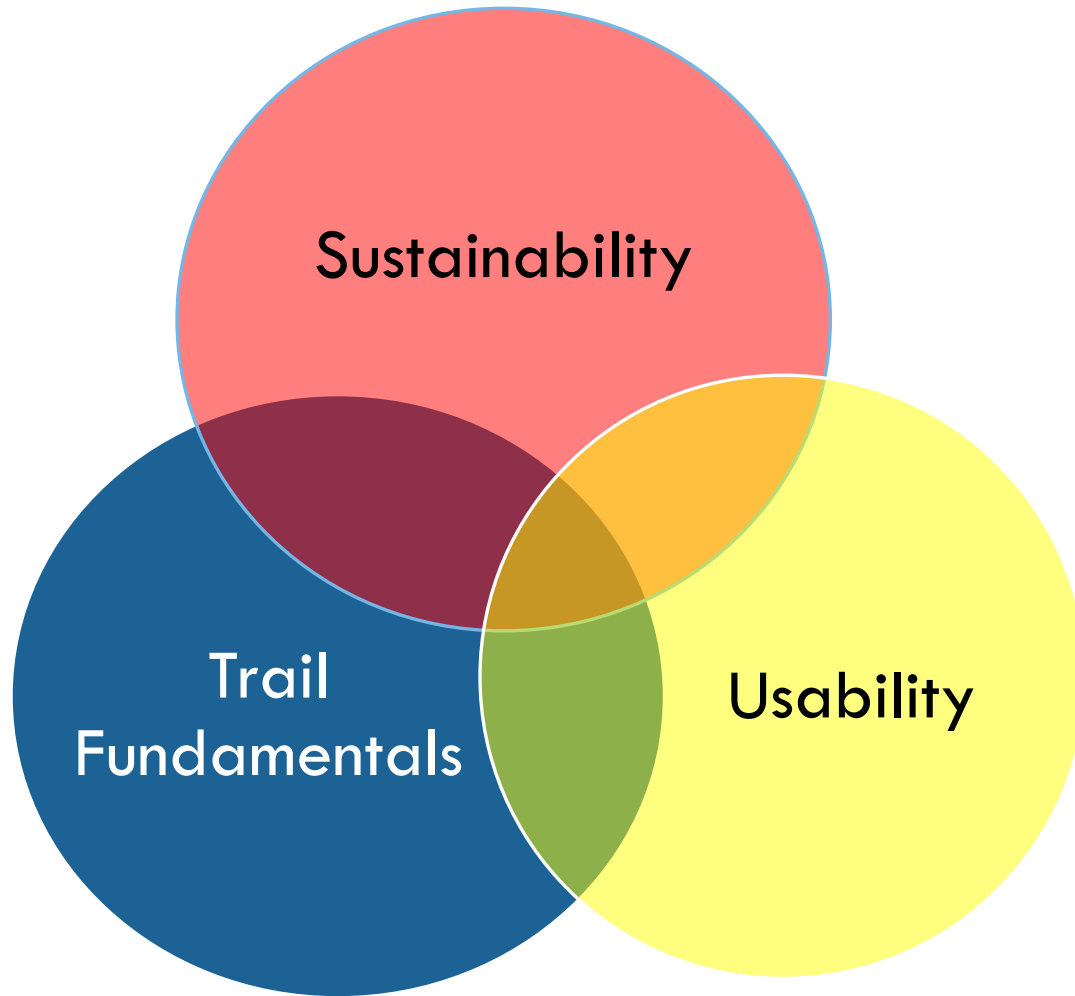
Federal Agency's have legal obligations to make available equal opportunities for people with disabilities in all programs and activities

## **The Rehabilitation Act of 1973, Section 504:**

Prohibits discrimination against people with disabilities in federally conducted programs.

Requires that qualified people with disabilities are not denied participation, unless allowing that participation would result in a fundamental alteration of the program.

# USABLE TRAILS



# COMPONENTS OF SUSTAINABILITY

Environmental – Water erosion? Protect resources?

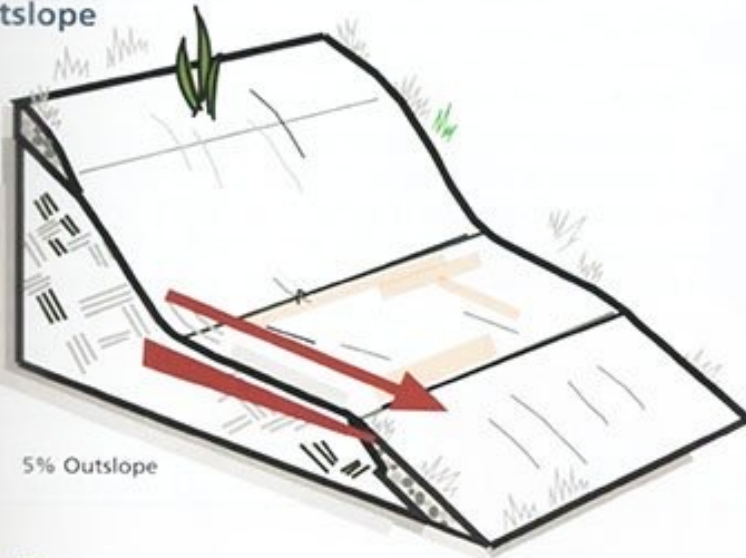
Social – provide rounded experiences for all users?

Economic – maintenance cost and user fees?

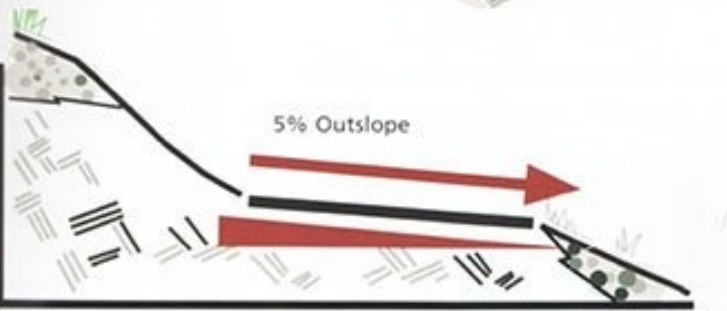


# ENVIRONMENTAL SUSTAINABILITY ~ OUTSLOPE

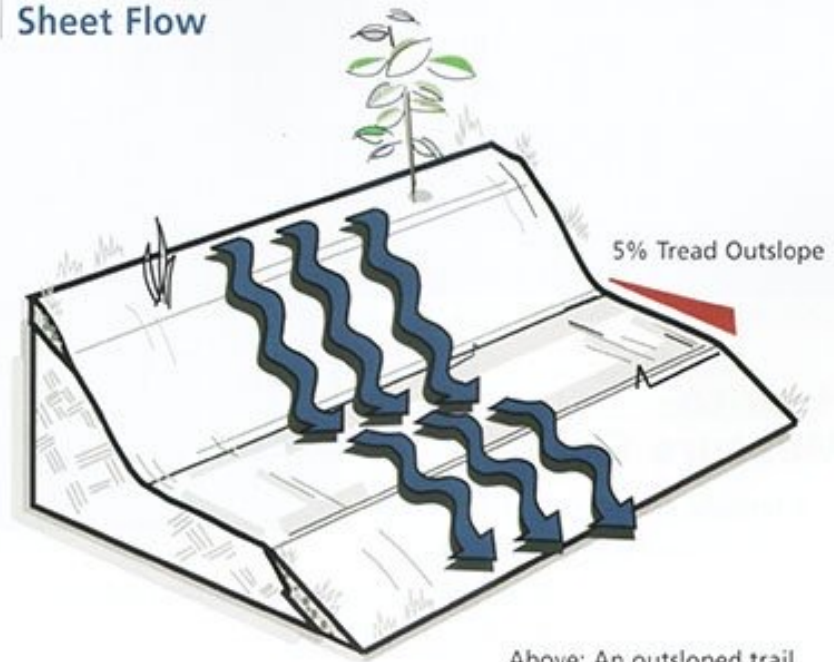
Outslope



5% Outslope



Sheet Flow



5% Tread Outslope

Above: An outsloped trail tread allows water to drain in a gentle, non-erosive manner called "sheet flow."

# OUTSLOPE AND USABILITY

## Problem:

*Usability: Tipping hazard for mobility device users, likely high consequence roll.*

*Sustainability: if exceeding 5% or half rule = erosion!!! Not sustainable for increasing crowds and stock use.*



# WIDTH

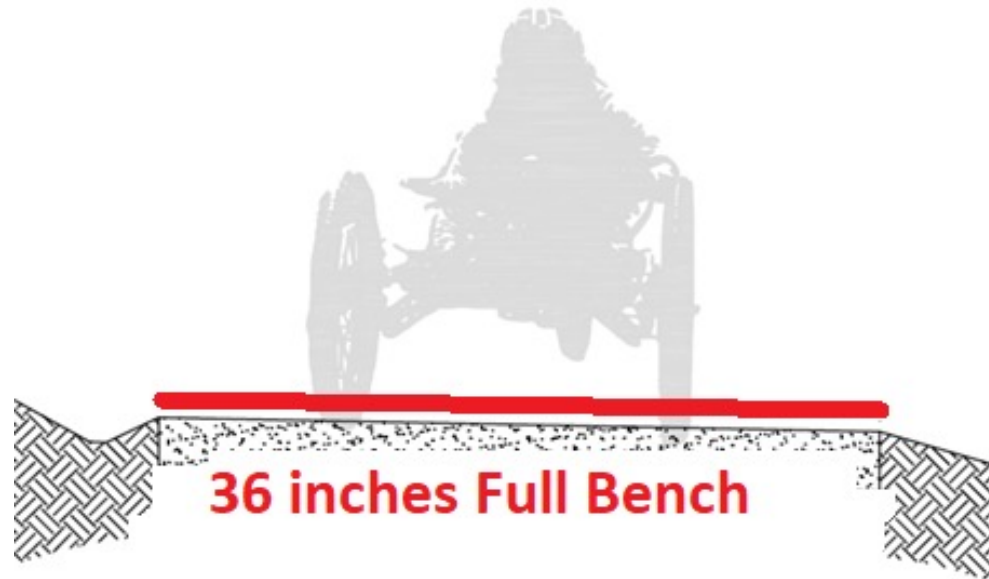
## Problem:

*Bridges, gates and trails are not wide enough.*

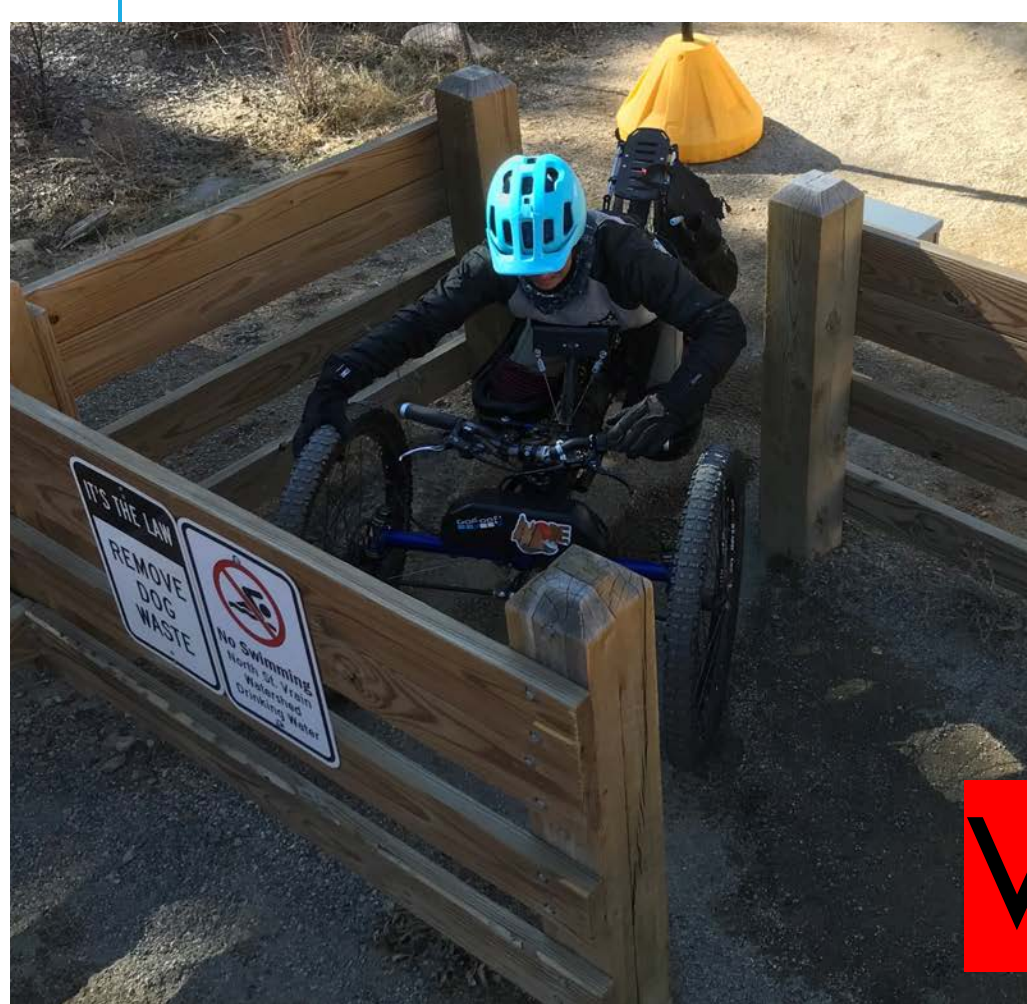
*Usability- can be halting for mobility device users, difficult for deaf, intellectual or others to communicate or maintain balance. Difficult to pass.*

*Sustainability- increasing crowds and stock use widen trails without proper planning, adding short cuts and social trails. Difficult to pass.*

Note: Given Trail Class and Design use and overall use, we should bench cut to a full 36" tread width minimum.

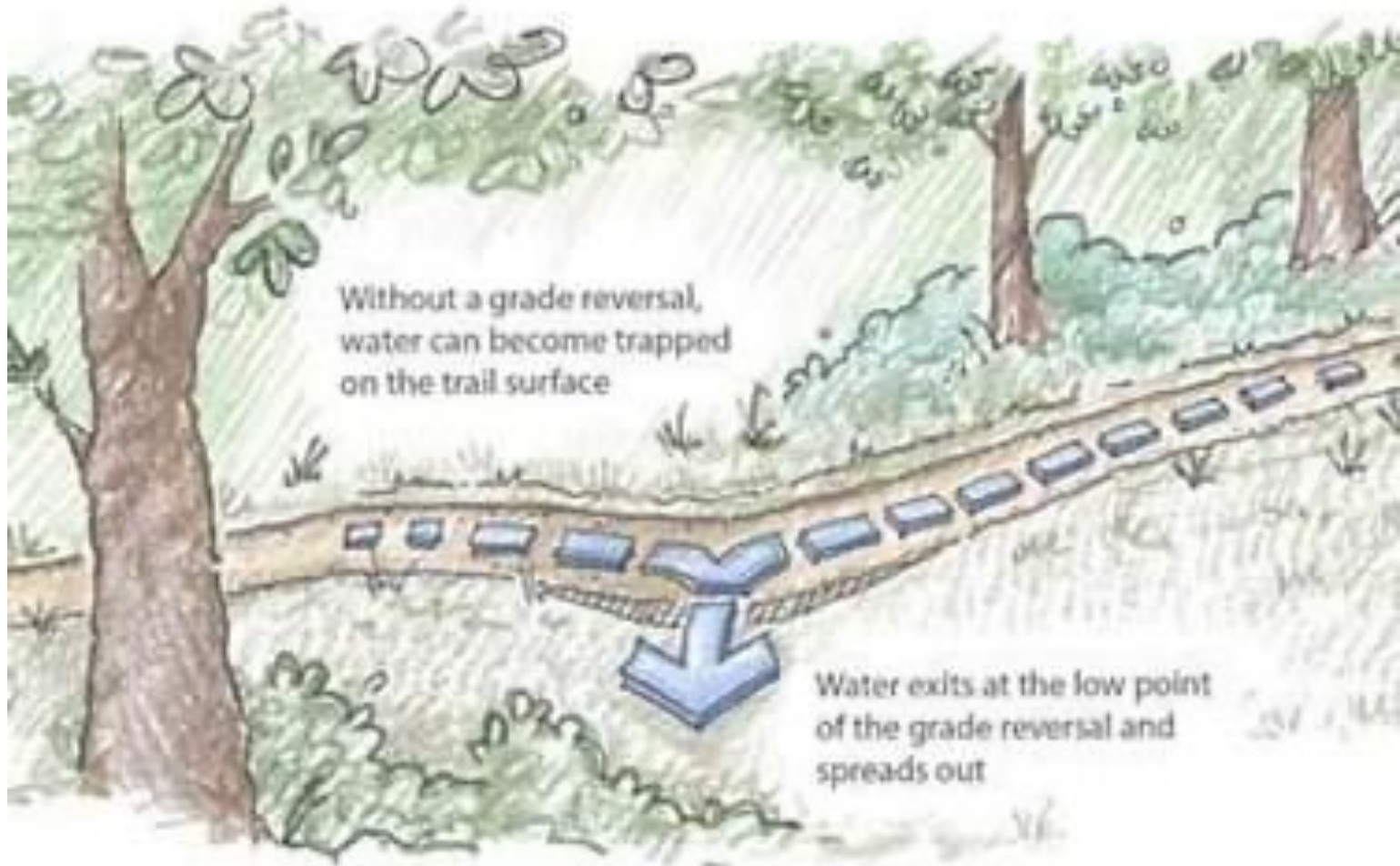


# GATE EXAMPLES



VS

# ENVIRONMENTAL SUSTAINABILITY ~ GRADE REVERSAL





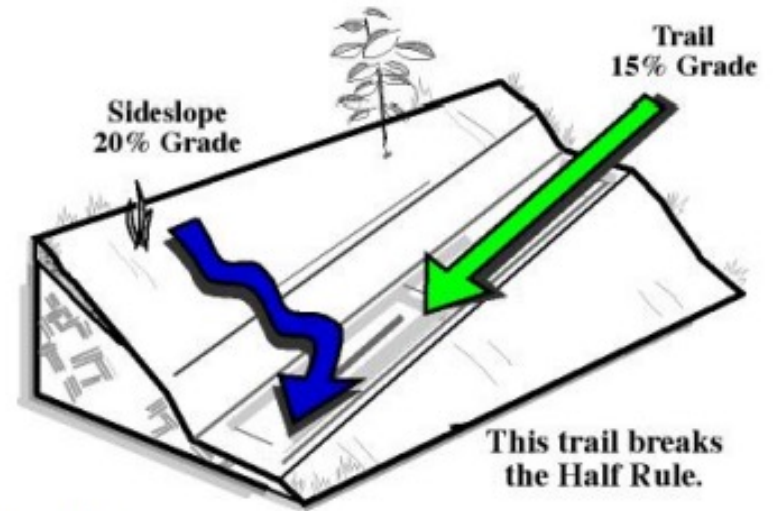
# GRADE REVERSAL VS WATERBAR



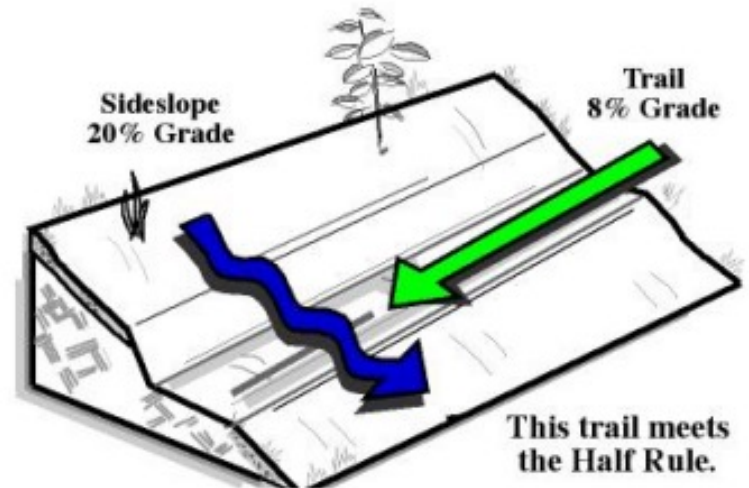
# ENVIRONMENTAL SUSTAINABILITY

~ HALF RULE

## Half Rule



Water will flow  
down trail.



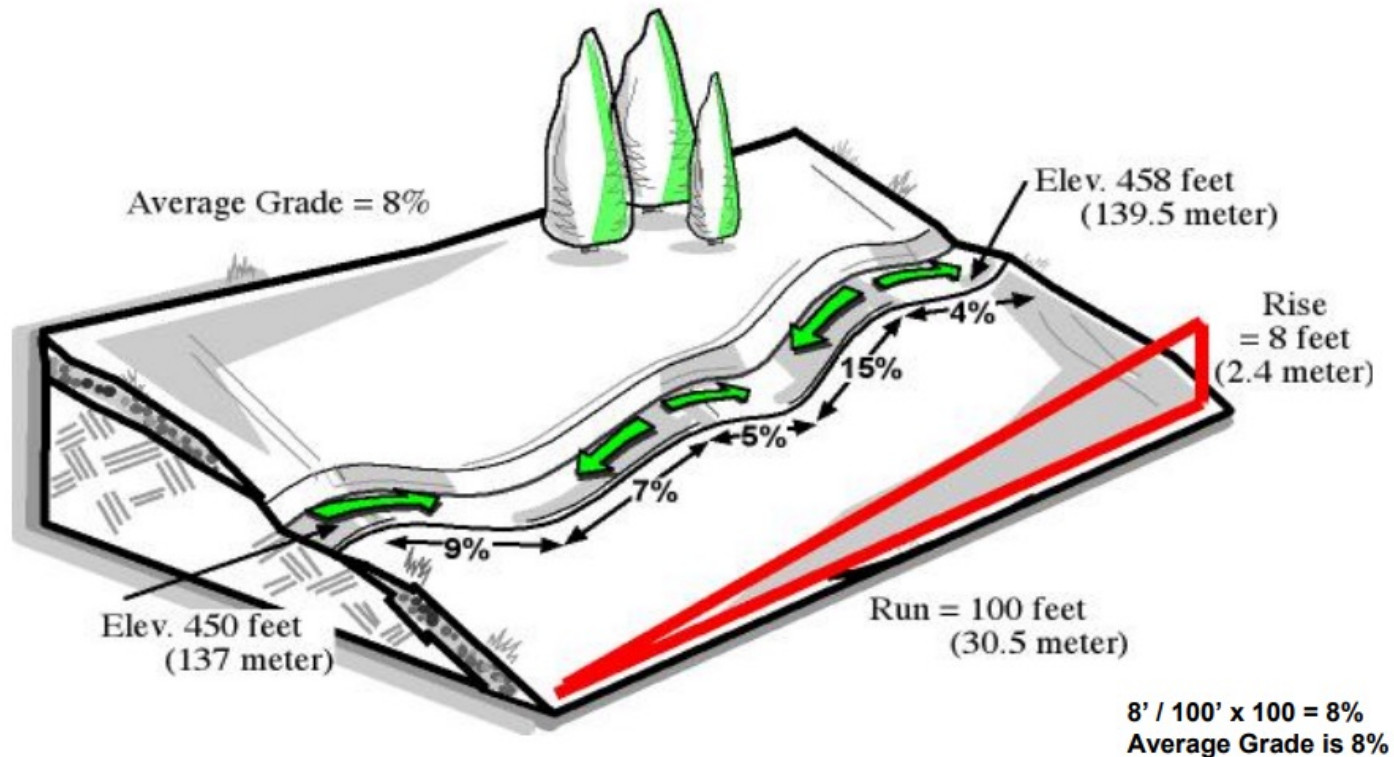
Water will sheet  
across trail.

# ENVIRONMENTAL SUSTAINABILITY



## AVERAGE GRADE AND MAX. SUSTAINABLE GRADE

### Average or Overall Grade



# STEPS AND LANDINGS



Side-stepping.

Greater than 12”  
and overhanging.

Problem:

*Usability-* can be a stopping barrier and/or tripping hazard for a variety of users.

*Sustainability-* increasing crowds and stock use cause general erosion. Users tend to side-step, widening or creating a new trail. Water drain issues or pooling if landings not properly backfilled.

# SOCIAL SUSTAINABILITY



# MANAGED USE AND DESIGNED USE TYPES

Hiker/Pedestrian/**Wheelchairs or mobility devices (not currently on list, nor icon).**

Pack and Saddle

Bicycle

Motorcycle

All-Terrain Vehicle

Four-Wheel Drive Vehicle > 50 Inches in Width

Cross-Country Ski

Snowshoe

Snowmobile

Motorized Watercraft

Nonmotorized Watercraft



# TRAIL STANDARDS

## Do Standards Apply?

- Is the trail designed for hiker or pedestrian use?
- Is the trail connected to a trailhead or an existing trail that substantially meets the technical requirements for trails?

The ABA Standards for trails apply when the answer to both questions above is “yes.”

See the Access-Board for specific trail standards.

<https://www.access-board.gov/aba/guides/chapter-10-outdoor/#using-the-trail-exceptions-10171-exceptions-1-and-2>

# TRAIL STANDARDS

Encouraged but are not required, to exceed the minimum requirements where possible to provide increased accessibility and opportunities for people with disabilities to enjoy trails.

The ABA Standards recognize the existence of constraints and limitations in the outdoor environment and allow for exceptions from specific provisions in the technical.

Compliance is required to the extent practicable. The phrase “to the extent practicable” means reasonably doable under the circumstances.

See the Access-Board for specific trail standards.

<https://www.access-board.gov/aba/guides/chapter-10-outdoor/#using-the-trail-exceptions-10171-exceptions-1-and-2>



# EXCEPTION 1

1- Compliance is not practicable due to terrain. The phrase “not practicable” means not reasonably doable.

Are we considering a full spectrum of user ability and user desires before we throwing in the towel because it does not meet ABA/ADA standards exactly?

Class 3 trails, stock use trails are very usable for mobility devices.





## EXCEPTION 2

Compliance cannot be accomplished with the prevailing construction practices.

Are we building to the best extent practicable given our managed and designated use?

Are we building to the highest degree of sustainability?

Photo of rock work on Longs Peak Trail, RMNP Wilderness.

# EXCEPTION 3

- This condition recognizes that public lands provide a wide variety of recreational experiences, from highly developed areas to wilderness areas that appear unchanged from primeval times and provide opportunities for people to experience primitive and challenging conditions.
- Are people with disabilities given an opportunity to experience any of this?
- Photo of Hand-cyclist on a narrow trail in the Bob Marshal Wilderness.





## Spectrum of Wilderness Experiences

# EXCEPTION 4

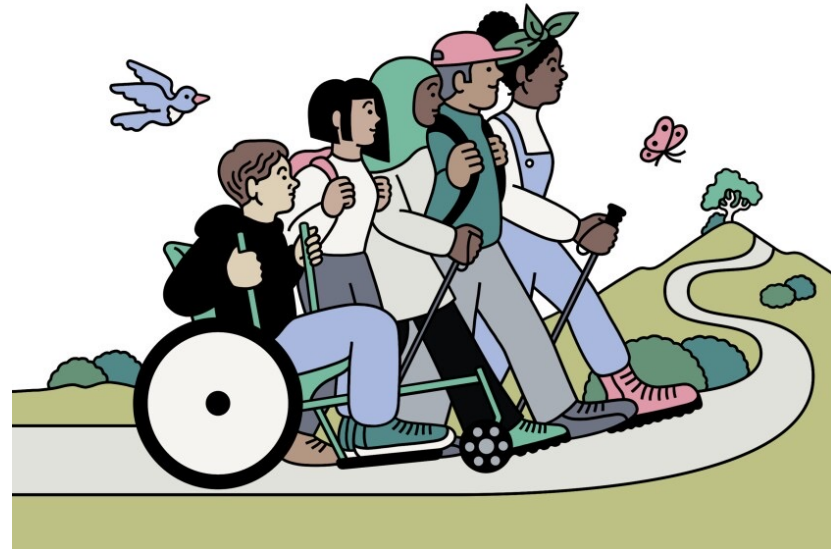
Compliance is limited or precluded by any of the following laws, or by decisions or opinions issued or agreements executed pursuant to any of the following laws:

- Endangered Species Act (16 U.S.C. §§ 1531 et seq.)
- National Environmental Policy Act (42 U.S.C. §§ 4321 et seq.)
- National Historic Preservation Act (16 U.S.C. §§ 470 et seq.)
- Wilderness Act (16 U.S.C. §§ 1131 et seq.)
- Other Federal, State, or local law, the purpose of which is to preserve threatened or endangered species; the environment; or archaeological, cultural, historical, or other significant natural features
- Can we offer a similar experience somewhere else?



# WHAT CAN WE DO?

- ✓ Be more be rounded in our trail planning and maintenance.
- ✓ Update Trail Information, how do we eat an elephant?
- ✓ Knowledge of Wheelchairs & Spectrum of abilities.
  - ✓ What trails could a little work improve sustainability/ usability?
  - ✓ What Sensory and Tactile information could you provide users before their hike?



# BRAILLE TRAIL INFORMATION



# TACTILE MODELS



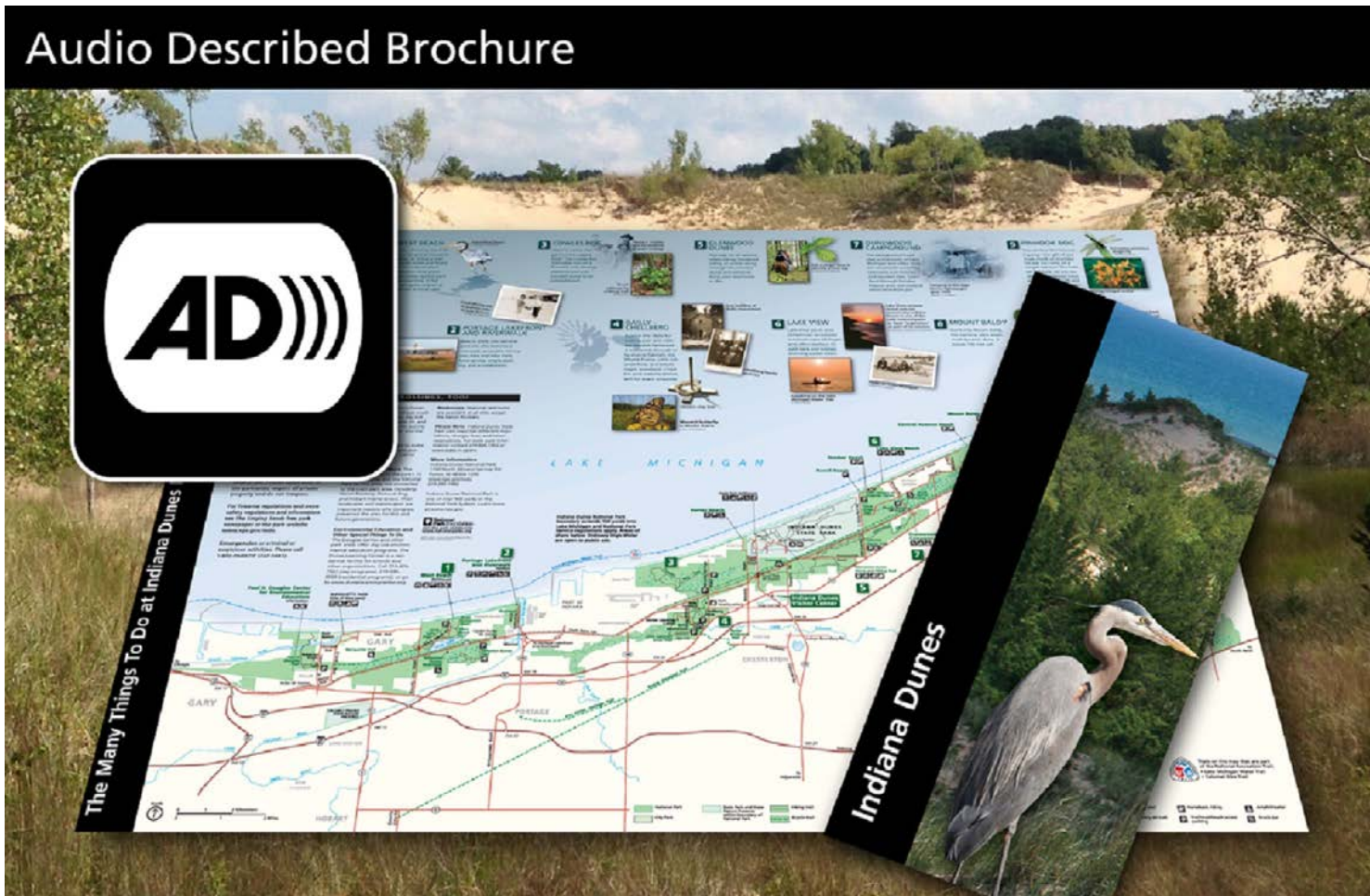
Hands on examples helping visitors prepare for terrain and other things they might encounter, like a bear box at their backcountry camp site.



# AUDIO INFORMATION

Preparing visitors to sounds they might encounter while in the wilderness.

Audio descriptions of maps and other park information, key sites or information on the trail.



# "ACCESSIBLE TRAILS"



...meet the standard without any exceptions. the definition of width, slope, surface type etc. And for ease of "knowing" what type of experience you will have. Flat- firm surface, likely people.



Trail Information expands opportunity for all visitors to decide on a suitable, more recreational experience. Challenging, solitude, wilderness.



**VS**



“WHEN YOU KNOW BETTER, YOU DO BETTER.”  
MAYA ANGELOU

