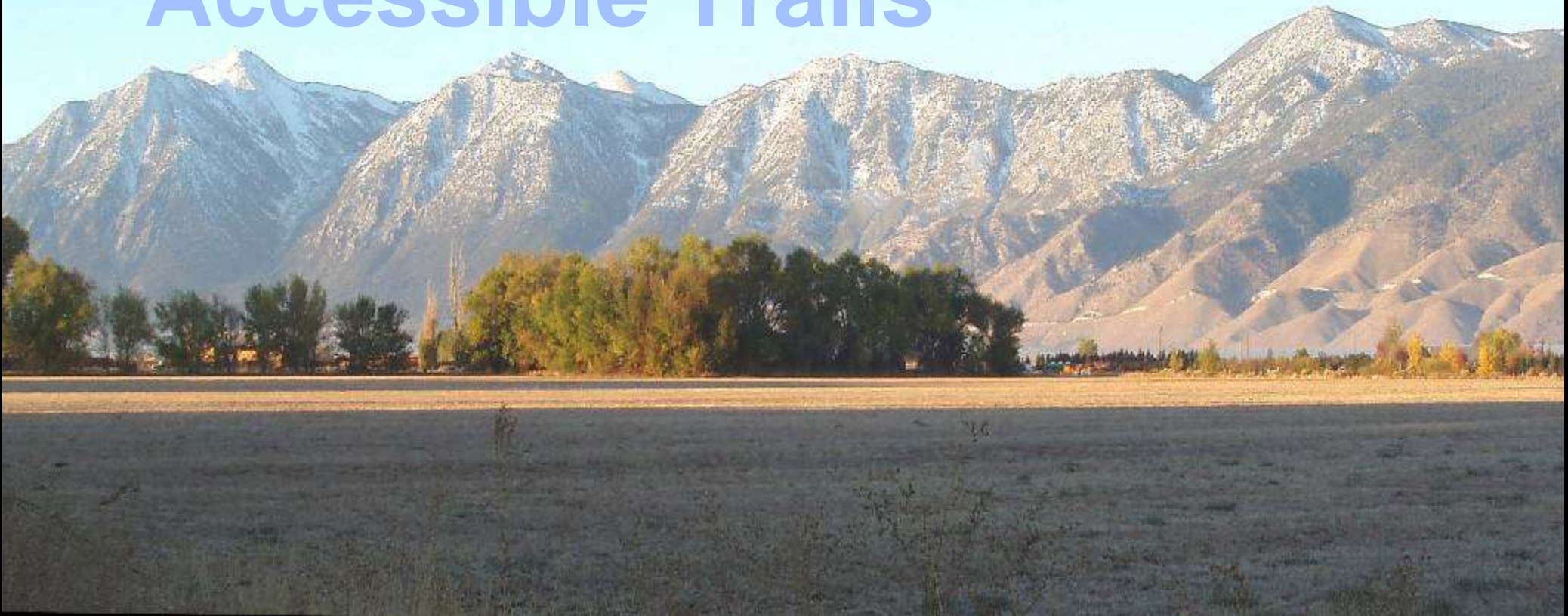


Tools and Technology for Accessible Trails



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Preventing Access Barriers

**Need to provide access to all
allowed user groups**

**Need to prevent those user groups
not allowed**

A man with glasses, wearing a black puffer jacket, black pants, and black boots, is seated in a wheelchair. He is leaning against a chain-link fence barrier. He has tan work gloves on his hands, with one hand resting on the top rail of the fence. The setting is an outdoor area with a dirt and gravel ground. In the background, there are trees, a brick building, and a hillside under an overcast sky. A green trash bin is visible behind the fence to the right.

**Barrier at
Riverview
Park**

Chicane





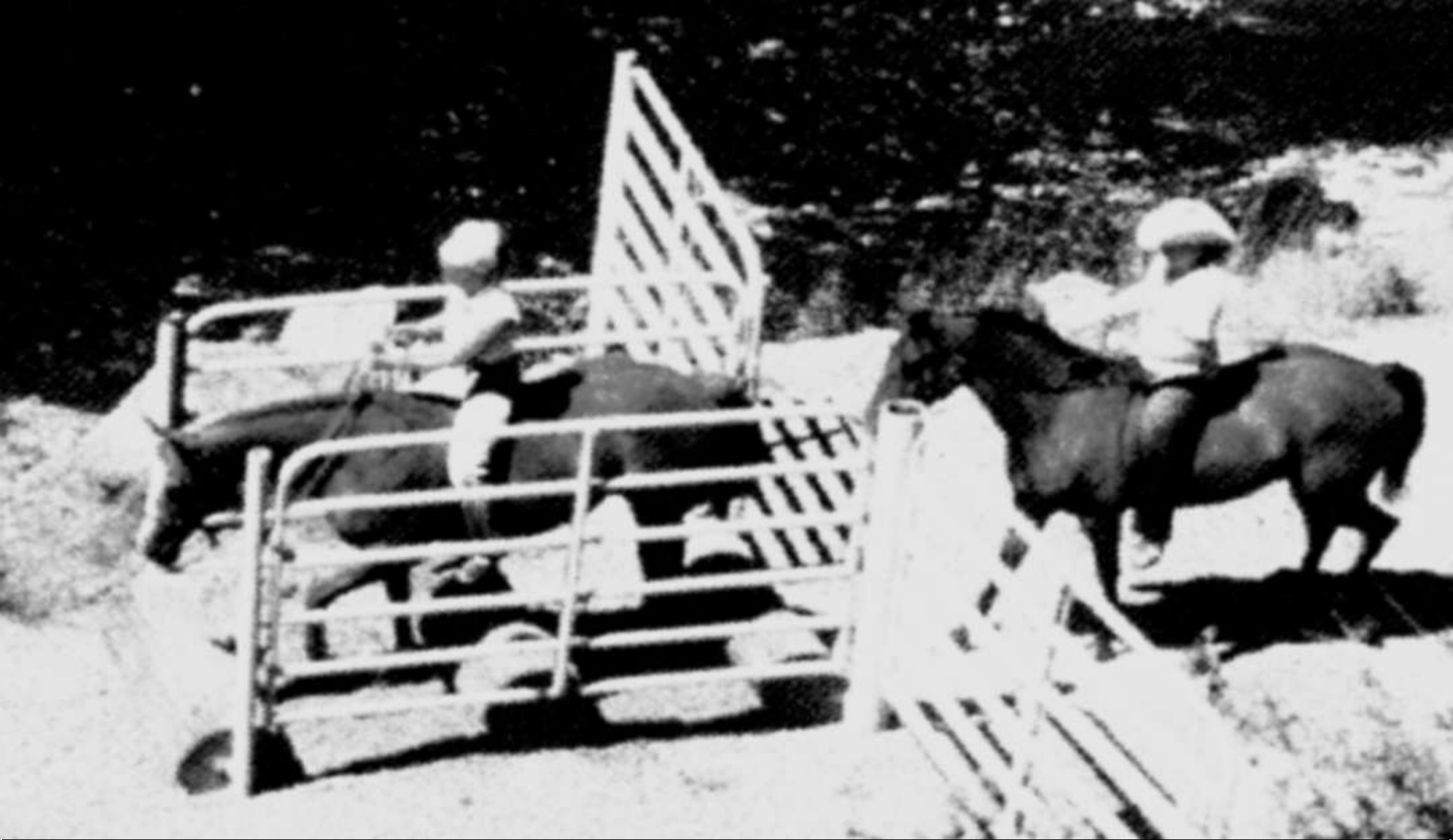
**Deschutes
Cattle
Guard
Barrier**



Kissing Gate Barrier

Single Step Barrier





Step Over Barrier

Stile Barrier

PUBLIC
FOOTPATH



Latching Gate



Zig Zag Barrier





K Barrier

Beneficial Designs Trail Gate Barrier Work





First Inverted Bollard Design

Motorcycle
Testing



Second Inverted Bollard Design

Abilities EXPO



Third Inverted Bollard Design

Motorcycle
Testing

Electronic Trail Gate Barrier

Detect the presence of motorized trail vehicle at trail access entry

Notify via phone or internet message

Voice, image, text or GSM text message

Report via alarm or dispatch service

Capture of video before and after event

Onsite alarm options

Electronic Gate Barrier



Electronic TGB Specifications

Self contained wireless battery
powered detection unit

Base electronics receive signal via
wireless protocol with jamming
detection

Low battery monitoring and
notification

Electronic TGB Specifications

Infra-red sensor technology with
fresnel lens

Field of view is approx 2 degrees

At 50 feet the field of view is approx
20 inches

Dynamic detection of hot objects
entering field of view

Electronic Trail Gate Barrier

Set up 32 inch clearance mechanical trail gate barrier with steel or concrete bollards

Detect the presence of motorized trail vehicle at trail access entry point

Silently report violation using desired format or onsite alarm

Electronic TGB Specifications

Custom designed electronic circuit to control infra-red sensor

Custom software algorithm to detect movement of heated object against background

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*Working toward universal access
through research, design & education*