5-HETAP Application Visuals

Applying the High Efficiency Trail Assessment Process-HETAP

American Trails
Beneficial Designs, Inc.

Applying the HETAP Objectives

- Describe how to use the HETAP to measure various trails and paths
- Adapt the HETAP to obtain the most valuable information
- Prioritize trails to assess

HETAP Principles

- Objective measurements
- Description of trail tread
- Features on and around trail
- Typical and extreme values
- Collect all data in one assessment
- Best path of travel
- Data required by land managers
- Disseminate data to trail users

HETAP Assessment Options

- Full HETAP detail
- Select type and amount of feature detail
- Select type and level of detail for trail tread measurements
- Recommend collecting full amount of data because of the efficiency of HETAP

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Description of Trail Tread

- Grade - typical and maximum
- Cross Slope - typical and maximum
- Surface - firmness and type
- Width - typical and minimum clearance

Description of Trail Features

User enjoyment and comfort

Construction
and maintenance

Health and safety

Uses of the HETAP

- Access
- Conservation
- Interpretation
- Maintenance
- Mapping

Examples of Possible Modifications

- Long distance and back country
- Shared use paths and ORARs
- Compliance with design standards
- Maintenance, planning and budgeting

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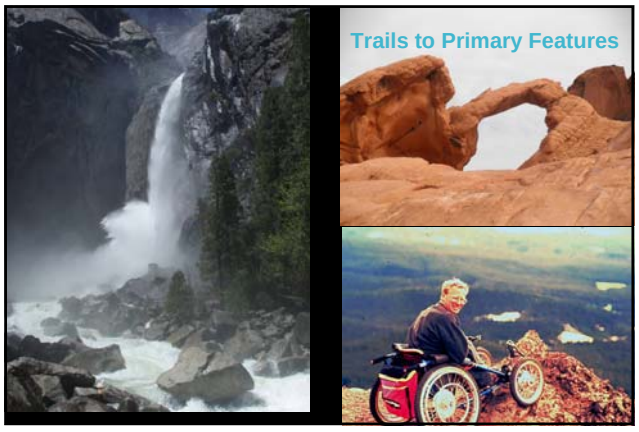
For your scenario, consider:

- Can the HETAP be used?
- What measurements would be made?
- What level of detail for trail tread?
- What level of detail for features?

Again, consider a full assessment because of the efficiency of HETAP

How might you prioritize to complete trail assessments?



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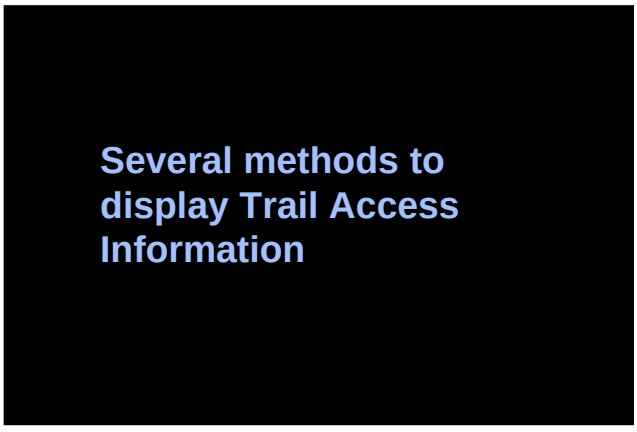

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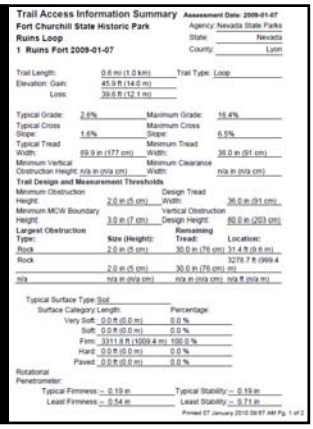
TAI Information Sheet



Trail Access Information Summary Assessment Date: 2009-01-07

Fort Churchill State Historic Park
Ruins Loop
1 Ruins Fort 2009-01-07

Agency: Nevada State Parks
State: Nevada
County: Lyon

Trail Length: 0.6 mi (1.0 km) Trail Type: Loop
Elevation: Gain: 45.9 ft (14.0 m)
Loss: 39.6 ft (12.1 m)

Typical Grade:	2.6%	Maximum Grade:	16.4%
Typical Cross Slope:	1.6%	Maximum Cross Slope:	6.5%
Typical Tread Width:	69.9 in (177 cm)	Minimum Tread Width:	36.0 in (91 cm)
Minimum Vertical Obstruction Height:	n/a in (n/a cm)	Minimum Clearance Width:	n/a in (n/a cm)

Trail Design and Measurement Thresholds

Minimum Obstruction Height:	2.0 in (5 cm)	Design Tread Width:	36.0 in (91 cm)
Minimum MCW Boundary Height:	3.0 in (7 cm)	Vertical Obstruction Design Height:	80.0 in (203 cm)

Largest Obstruction Type:	Size (Height):	Remaining Tread:	Location:
Rock	2.0 in (5 cm)	30.0 in (76 cm)	31.4 ft (9.6 m)
Rock	2.0 in (5 cm)	30.0 in (76 cm)	3278.7 ft (999.4 m)
n/a	n/a in (n/a cm)	n/a in (n/a cm)	n/a ft (n/a m)

Typical Surface Type: Soil

Surface Category:	Length:	Percentage:
Very Soft:	0.0 ft (0.0 m)	0.0 %
Soft:	0.0 ft (0.0 m)	0.0 %
Firm:	3311.8 ft (1009.4 m)	100.0 %
Hard:	0.0 ft (0.0 m)	0.0 %
Paved:	0.0 ft (0.0 m)	0.0 %

Rotational Penetrometer:
Typical Firmness: – 0.19 in Typical Stability: – 0.19 in
Least Firmness: – 0.54 in Least Stability: – 0.71 in

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Trail Access Information Summary Assessment Date: 2009-01-07

Ruins Loop

Fort Churchill State Historic Park
1 Ruins Fort 2009-01-07

Agency: Nevada State Parks
State: Nevada
County: Lyon

Trail Uses Allowed	Trail Uses Not Allowed
Hiking	Motor Vehicles
Bicycling	Equestrian
Dogs - On Leash	Hunting
Photography	

Park Information/Amenities:

Fort Churchill was once an active U.S. Army fort built in 1861 to provide protection for early settlers. It was abandoned nine years later, and today the ruins are preserved in a state of arrested decay. A visitor center displays information and artifacts of the fort's history. The Pony Express and the Overland Telegraph once passed through this area. Buckland Station is nearby, a Pony Express stop, supply center, and former hotel built in 1870. Facilities at the park include trails, a campground, picnic area, group-use area and access to the Carson River. Visitors can enjoy hiking, historic and environmental education, camping, picnicking, photography and canoeing. The park is located eight miles south of Silver Springs on Alternate U.S. 95, and one mile on Fort Churchill Road.775-577-2345region3@cccomm.nethttps://parks.nv.gov/fc.htm

Trailhead Location:

Trail can be accessed from several locations, primarily from the parking lot at the north side of the loop and from the visitor center.

Warning: Trail conditions may have changed since this trail was assessed. Temporary obstructions (e.g. fallen trees or land slides) may not have been mapped. Maximum grades and cross-slopes may vary. Obstructions less than 2.0 in (5 cm) or outside of the tread area 36.0 in (91 cm) wide by 80.0 in (203 cm) high were not reported. Minimum clearance width boundaries were at least 3.0 in (7 cm) high.

This report is generated by HETAP software using a High Efficiency Trail Assessment Process which has been created by Beneficial Designs, Inc.
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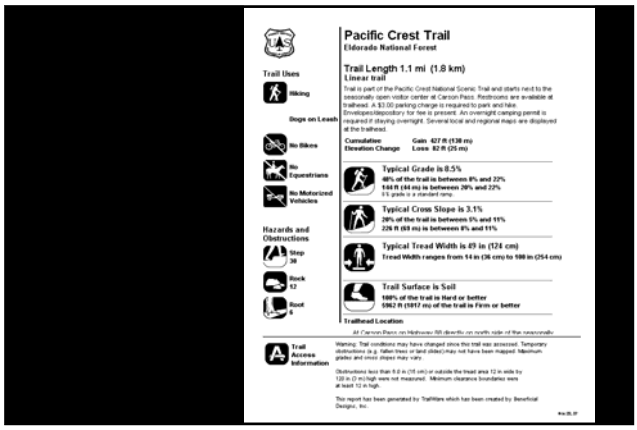

Pacific Crest Trail
Eldorado National Forest

Trail Length 1.1 mi (1.8 km)
Linear trail

Trail is part of the Pacific Crest National Scenic Trail and starts next to the seasonally open visitor center at Carson Pass. Restrooms are available at trailhead. A $3.00 parking charge is required to park and hike. Envelopes/depository for fee is present. An overnight camping permit is required if staying overnight. Several local and regional maps are displayed at the trailhead.

Cumulative: Gain 427 ft (130 m)
Elevation Change: Loss 82 ft (25 m)

Typical Grade is 8.5%
40% of the trail is between 8% and 22%
144 ft (44 m) is between 20% and 22%
1% grade is a standard ramp.

Typical Cross Slope is 3.1%
20% of the trail is between 5% and 11%
226 ft (69 m) is between 8% and 11%

Typical Tread Width is 49 in (124 cm)
Tread Width ranges from 14 in (36 cm) to 100 in (254 cm)

Trail Surface is Soil
100% of the trail is Hard or better
5962 ft (1817 m) of the trail is Firm or better

Trailhead Location:
At Carson Pass on Highway 88 directly on north side of the road/parking

Trail Uses: Hiking; Dogs on Leash; No Bikes; No Equestrians; No Motorized Vehicles
Hazards and Obstructions: Step 30; Rock 12; Root 6
Trail Access Information

Warning: Trail conditions may have changed since this trail was assessed. Temporary obstructions (e.g. fallen trees or land slides) may not have been mapped. Maximum grades and cross slopes may vary.

Obstructions less than 5.0 in (15 cm) or outside the tread area 12 in wide by 120 in (3 m) high were not measured. Minimum clearance boundaries were at least 12 in high.

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Nature Trail
Davis Creek Regional Park

Length	0.7 mi (1.1 km)
Elev Gain	115 ft (35 m)
Elev Loss	115 ft (35 m)

Hikers
Bikes
Dogs on Leash
No Equestrians
No Motorized Vehicles

Grade

Typical Grade	6.5%
19% of trail is	10% to 20%
128 ft (39 m) is	20% to 34%
Standard Ramp Grade	8.3%

Cross Slope

Typical Cross Slope	4.7%
8% of trail is	10% to 15%
105 ft (32 m) is	15% to 30%

Tread Width

Typical	33 in (84 cm)
Minimum	12 in (31 cm)

Surface

Surface Type	Soil
13% of trail is	Soft
5% is	Moderately Stable
Typical Firmness	0.18 in
Minimum Firmness	0.60 in
Typical Stability	0.39 in
Minimum Stability	0.59 in

Obstructions

Multiple Rocks	8 in (20 cm)

Trail Access Information

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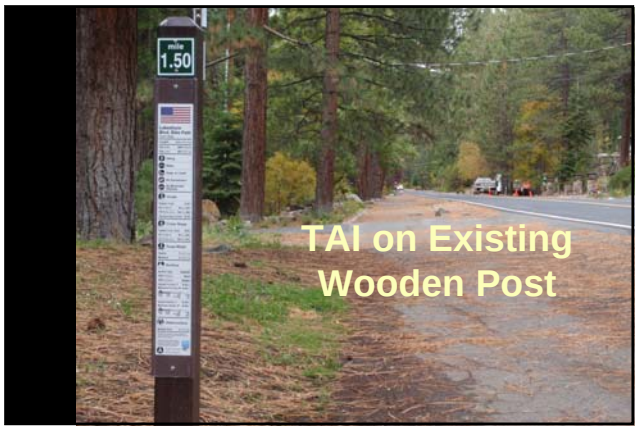

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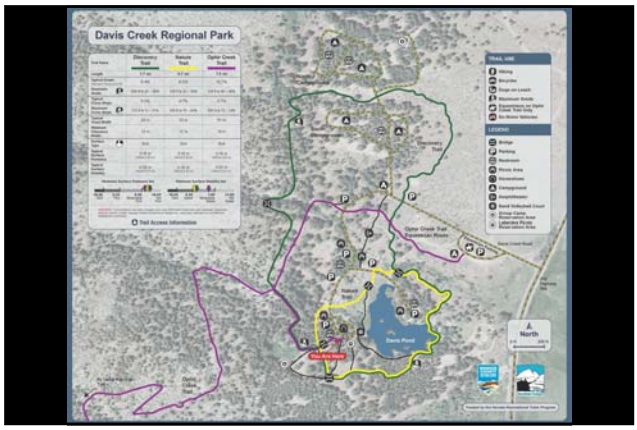

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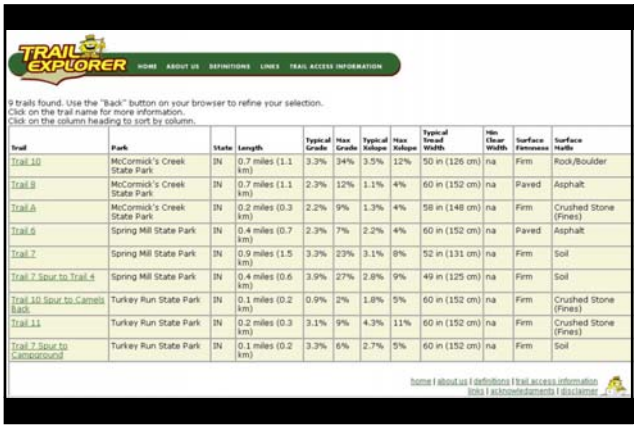

Summary

- HETAP can be modified for many different settings and purposes
- Maintain key principles and modify to suit your needs
- Priority for trails to primary features, different environments, and shorter, high use or higher access trails
- Provide trail data that meets the desire of trail users

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Working toward universal access
through research, design & education

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