

Trail Sustainability Principles

Competencies:

Construction: Trail Sustainability principles

Maintenance: Trail Sustainability principles

Project Planning + Design: Trail Sustainability principles

Concepts + Vocab:

- | | |
|---|--|
| ☐ Percent Slope | ☐ Sheet flow |
| ☐ Trail grade | ☐ Soil layers |
| ☐ Fall line trail (also in planning | ☐ Erosion |
| ☐ Drainage on and off trail | ☐ Users |
| ☐ Rolling contour trail | ☐ Maintainability |
| ☐ Grade reversal (also drainage) | |
| ☐ Full bench cut construction (also
hand tool construction) | |

Safety/Site management

Competencies:

Construction: Safety/Site Management

Maintenance: Safety/Site Management

Crew Leadership: Crew Management, Jobsite Safety, Field-based Resource Protection

Vocabulary + Concepts:

- ☐ PPE
- ☐ Site and environmental safety precautions
- ☐ incident preparedness
- ☐ Resource protection that intersect the trail development process
- ☐ Tasks related to resource protection

Construction and Maintenance Specifications

Competencies:

Construction: Construction Specifications

Maintenance: Maintenance Specifications

Planning + Design: Trail Specifications

Vocabulary + Concepts:

- ☐ Interpret and understand elements of specifications including:
 - ☐ Corridor height/width
 - ☐ Tread width and material
 - ☐ Cross/outslope
 - ☐ Protrusions
 - ☐ Obstacles
 - ☐ Compaction

- ☐ structures

Corridor Clearing/Site Preparation

Competencies:

Construction: Corridor Clearing/Site Prep

Maintenance: Corridor Clearing/Site Prep

Vocabulary + Concepts:

- ☐ Safely remove rocks, stumps, and debris from identified trail corridor clearing limits (31)
- ☐ Use pruning and brushing techniques to
 - ☐ maximize safety
 - ☐ minimize visual impacts
 - ☐ support healthy trailside vegetation (i.e. avoid damage to growth collar of pruned limbs, cutting saplings flush to ground, deposit clipped limbs cut side away from trail)
- ☐ Felling
 - ☐ Use proper PPE
 - ☐ work safe distance from felling zone
 - ☐ how to brush, buck and limbing logs of various sizes in minimally complex situations
 - ☐ felling in minimally complex situations
- ☐ Deposit materials and debris removed from corridor
 - ☐ using low impact techniques
 - ☐ according to project permits or other resource protection requirements
 - ☐ Understanding of low impact techniques related to material and debris management

Hand-Built Trail Construction

Competencies:

Construction: Hand-Built Trail Construction

Vocabulary + Concepts:

- ☐ Concepts of full bench
- ☐ How to use hand tools to construct full bench tread
- ☐ Concepts of raised tread
- ☐ How to use hand tools to construct raised tread
- ☐ Know and apply sustainability principles to tread construction
- ☐ Safely use hand tools
- ☐ Know and do various stages of construction
- ☐ Know how principles apply to a variety of situations
- ☐ Turns

Mechanized Trail Construction + Maintenance

Competencies:

Construction: Mechanized Trail Construction

Maintenance: Mechanized Tread Maintenance

Vocabulary + Concepts:

- ☐ How to work safely around mechanized equipment
- ☐ How to operate basic mechanized equipment
 - mechanized wheelbarrow
 - plate compactor
 - tracked dumper
- ☐ Perform basic maintenance on equipment
- ☐ Minimize unintended impacts on and off trail
- ☐ Remediate any unintended impacts on and off trail

Trail Finish Work

Competency:

Construction: Trail finish work

Vocabulary + Concepts:

- ☐ Using hand tools to shaping: - (kind of in construction already)
 - ☐ Tread
 - ☐ Backslope
- ☐ Manage spoils - (in a few different sections)
- ☐ Compaction with mechanized and hand tools
- ☐ Erosion control stabilization - (already in other sections)

Tread Maintenance with Hand tools

Competency:

Maintenance: Tread with Hand tools

Vocabulary + Concepts:

- ☐ Maintenance specifications
 - Tread width
 - cross/outslope
 - Protrusions and obstacles
- ☐ Safe use of Hand tools
- ☐ Identify the location and appropriate strategy
- ☐ How to minimize off trail impacts

Drainage and Water Management

Competencies:

Construction: Construct drainage features

Maintenance: Construct/restore trail drainage features

Vocabulary + Concepts:

- ☐ Sheet Flow (also sustainability)
- ☐ Construct drainage features
 - grade reversals
 - rolling grade dips
 - Knicks
 - Berms
 - Ditches
 - sheet drains
- ☐ How natural and stormwater drainage impacts trails (also sustainability)
- ☐ Understand the applications of a variety of drainage features

Section 10. Water Crossing Structures

Competency:

Construction: Construct drainage features

Vocabulary + Concepts:

- ☐ basic physical signs of water flow and/or inundation
- ☐ different types of water crossing structures and their appropriation application
 - Boardwalk
 - Puncheon
 - Turnpike
 - Bridge
 - ford

Retaining Walls

Competency:

Construction: Construct retaining walls

Vocabulary + Concepts:

- ☐ material preparation
- ☐ stacking
- ☐ joinery
- ☐ fill
- ☐ Safely perform tasks to further the construction of a stone or wood retaining wall
- ☐ Stabilize (set) stone or wood materials

Tread Hardening

Competency:

Construction: Tread Hardening

Vocabulary + Concepts:

- A. Understand tread hardening treatments and when to use which:
 - a. aggregate addition
 - b. various types of rock armoring

- c. Turnpiking
 - d. rock culverts
 - e. boulder causeway
 - f. rock drains
- B. Safely perform a variety of tasks:
- a. materials quarrying
 - b. Staging
 - c. application
 - d. Stabilize (set) rocks and wood
 - e. basic carpentry
 - f. basic rockwork

Decommissioning Trails

Competency:

Construction: Decommissioning Trails

Vocabulary + Concepts:

- ☐ Demonstrate understanding of the basic techniques of trail decommissioning including
 - ☐ stabilizing
 - ☐ revegetating
- ☐ Perform
 - ☐ material management
 - ☐ staging
 - ☐ tread stabilization
 - ☐ revegetation

Project Management

This section pulls from multiple competency categories including **Project Preparation, Trail Planning and Design, and Crew Leadership**. Vocab/concepts listed below pulled from these (but are not all inclusive of every competency in these higher level skills).

Concepts/Vocab

- ☐ Understanding of the areas of resource protection that intersect the trail development process
- ☐ Assessment
 - User caused damage
 - Signs of water damage
- ☐ Understand basic trail design tools and process
 - Map reading
 - Clinometer
 - GPS
 - Interpreting field flagging (corridor, pin flagged)
- ☐ Understand Universal trail design/accessibility elements