

How to Design, Build, Enhance, and Maintain Your Forest Trails



**Green Timber
Consulting Foresters, Inc.**



Planning and Mapping

▶ Trail Use

- ▶ Hiking, Skiing, Biking, ATV, or Vehicular

▶ Soil Types and Hydrology

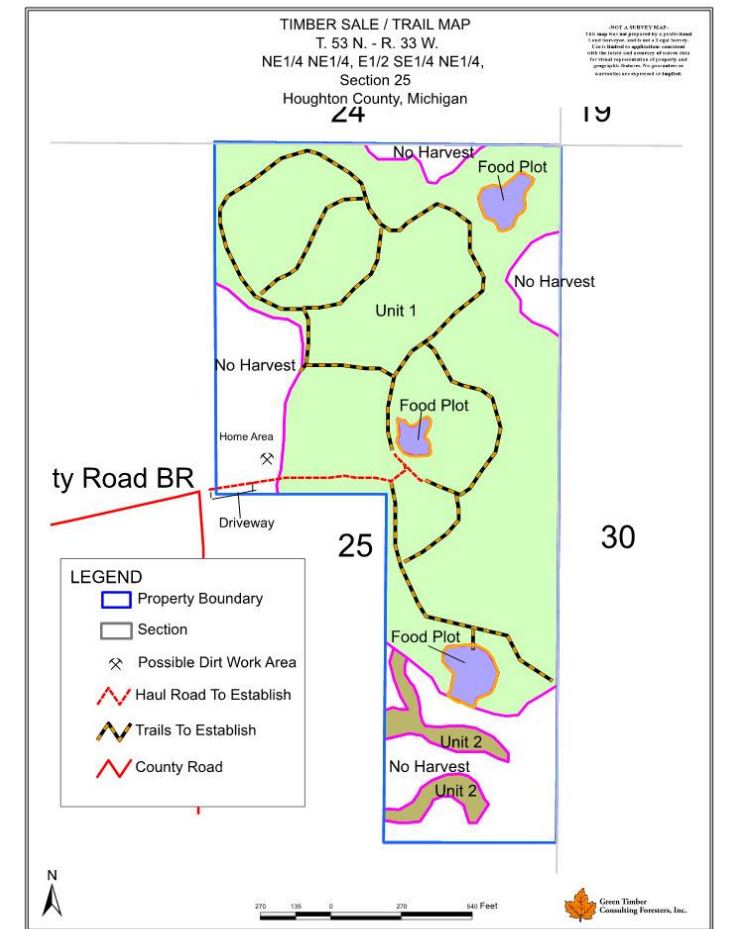
- ▶ Web Soil Survey: <http://websoilsurvey.sc.egov.usd>
- ▶ Streams, Wetlands, and Vernal Pools

▶ Terrain

- ▶ Desirable Slope - 10% or less
- ▶ Erosion and Sedimentation Control - The Half Rule, Grade Reversals, and waterbars

▶ Mapping

- ▶ Aerial Photos, Topographic Maps, GPS, and Compass



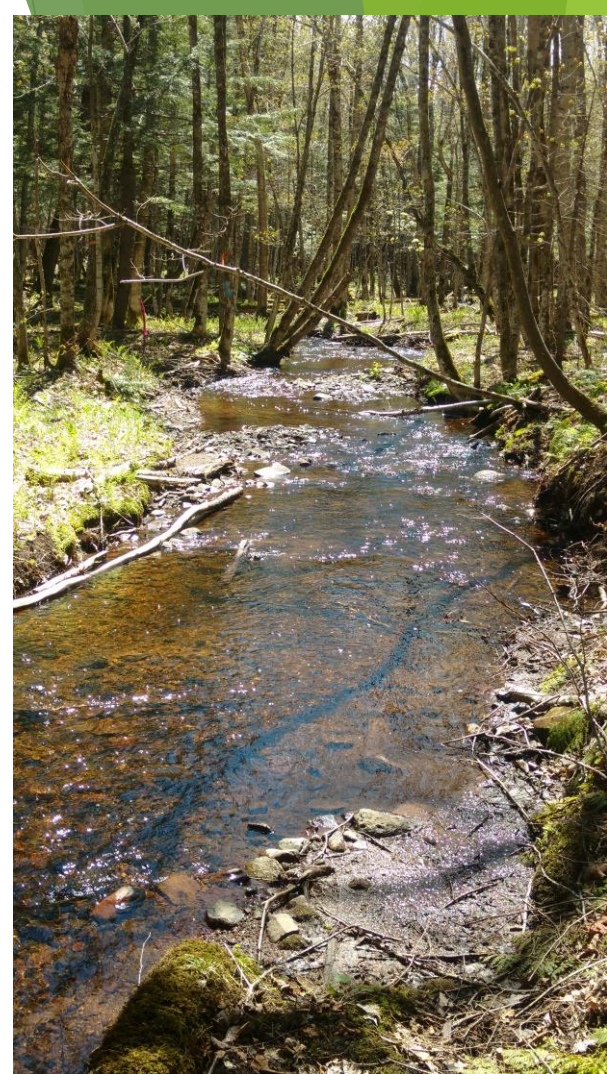
Development and Maintenance

- ▶ Tree and Brush Removal
 - ▶ Sometimes can be incorporated into a commercial timber sale
- ▶ Preparing the Trail Surface
 - ▶ Often done with a bulldozer, excavator, or mini-excavator depending on the desired usage of the trail
 - ▶ Be sure to take measures to control water flow and erosion
- ▶ Maintenance
 - ▶ Conduct inspections yearly to assess and avoid potential future problems
 - ▶ Key in on erosion, perennially wet areas, and hazard trees and limbs



Stream Crossings and Wetlands

- ▶ Stream Crossings and wetlands are very sensitive areas that must be handled with caution.
- ▶ Minimize the number of stream crossings and disturbance to wetlands, including vernal pools, to protect them.
- ▶ Stream crossing and trail construction in wetlands for personal use will require a permit. Contact your local Department of Environmental Quality (DEQ) office to obtain any necessary permits **BEFORE** construction begins.
- ▶ Types of Stream Crossings:
 - ▶ Culverts, Bridges, and Fords
 - ▶ Be sure to develop all stream crossing to handle high water flow



Signage and Education

► Types of Signage

- Junction signs - Used to identify trail names, directions, destinations, and distances
- Reassurances markers - Used to mark the location of the trail. Usually consisting of blazes cut into trees or plastic or metal tags nailed to trees
- Educational signs - Used to provide the user of the trail with useful information regarding the surrounding environment.
 - Educational signs can consist of traditional signs or QR codes to be used with smart phones.



Cost Share Options

- ▶ **Michigan Natural Resource Conservation Service (NRCS)**

- <http://www.nrcs.usda.gov/wps/portal/nrcs/site/mi/home/>

- ▶ **Environmental Quality Incentives Program (EQIP)**

- ▶ *Trails and Walkways* - Provide access for recreational activities or to access recreational sites

- ▶ *Access Road* - Development of a vehicular travel route for management of timber, livestock, agriculture, wildlife habitat, and other conservation practices

- ▶ *Forest Trails and Landings* - Provide periodic access for removal and collection of forest products

Smart Phone Apps

- ▶ **Avenza PDF Maps**
 - ▶ Free Mapping App for Your Smart Phone
 - ▶ Can map trails and set pins to depict unique locations
 - ▶ Green Timber can create personalized property maps compatible with this app.



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