visual fields

Heber Valley Camp, 1:9,000
Designed by Brandon Plewe
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In 2004 we were hired by The Church of Jesus Christ of Latter-day Saints to produce a recreation map of the Heber Valley Camp, an 8,000-acre campground the Church owns above Heber City, Utah. The Camp is designed primarily for church youth groups, so they wanted a map that was easy to use, accurate, and aesthetically pleasing; they were especially enamored with the recent national park maps, although they wanted their own look.

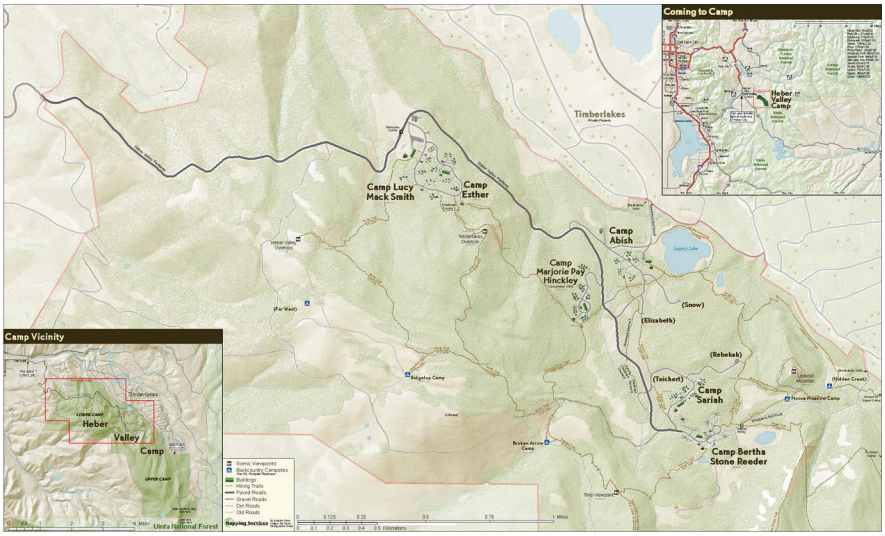
The concentrated development of the camp (which includes 5 camps in addition to the two shown) required a large scale (1:9,000) for the main map, which provided several challenges, but also some opportunities. Specifically, I saw it as a chance to implement several of the techniques I had learned from the NACIS community over the past several years. For example, this seemed to be the perfect scale to use vegetation textures.

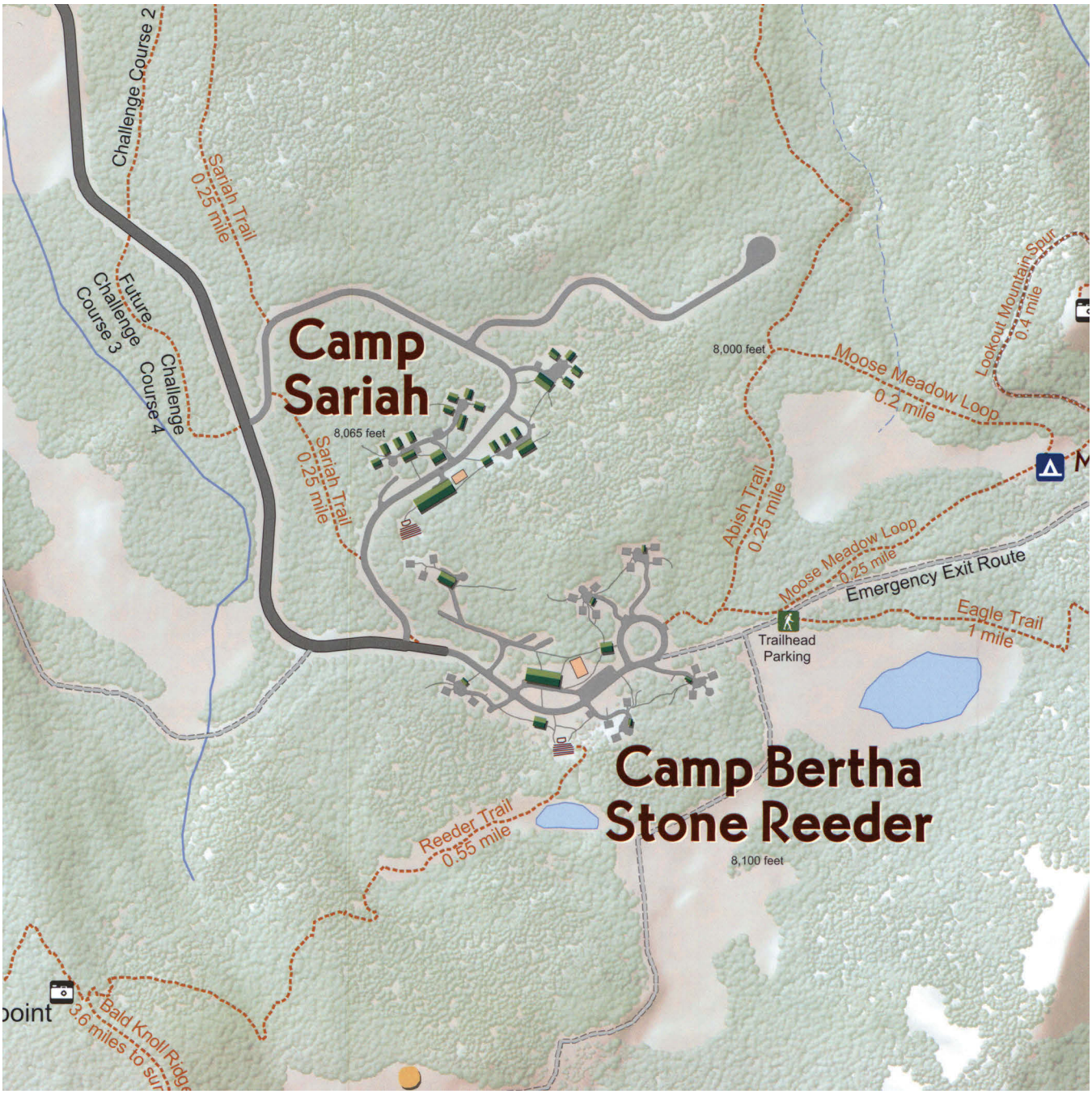
The primary challenge was collecting large-scale data. The terrain is a blending of USGS 10 meter DEM's with a raster interpolated from 2-foot contours created by the engineers that designed the camp. Camp features (roads, trails, buildings) were obtained from the engineers' CAD files, then updated and corrected in the field, primarily by students in our GPS course.

To create the vegetation texture, we classified a recent Landsat image into four vegetation types (Aspen, Conifer, Shrub, Grass). We then refined the result using recent 1 meter orthophotos (2004 USDA NAIP) and the feature vector data. We then used ModelBuilder in ArcGIS 9 to create a raster algorithm to generate tree/shrub patterns (including two sizes of trees for added texture), based loosely on Jeff Nighbert's random-dot-growing method. The resultant 1-meter texture was combined with the DEM for shading, and also used as a color mask. In general, we were very pleased with the result, although we found it difficult to create realistic conifers, and the landforms may be too large at this scale to be easily recognizable from shaded relief.

The final design was performed in ArcGIS (a first for us). It was then exported to Adobe Illustrator for composition with text and photographs. The map was published in January 2005, and is now distributed to all leaders of camping groups, and is available for purchase in Church bookstores.

For more information, contact Brandon Plewe, BYU Geography, plewe@byu.edu.




Challenge Course 2
Sariah Trail
0.25 mile
Future
Challenge
Course 3
Challenge
Course 4
Camp
Sariah
8,065 feet
Sariah Trail
0.25 mile
8,000 feet
Moose Meadow Loop
0.2 mile
Lookout Mountain Spur
0.4 mile
Abish Trail
0.25 mile
Moose Meadow Loop
0.25 mile
Emergency Exit Route
Eagle Trail
1 mile
Trailhead
Parking
Camp Bertha
Stone Reeder
8,100 feet
Reeder Trail
0.55 mile
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Bald Knoll Ridge
3.6 miles to su