

Santa Fe National Forest Travel Management Explanation of Process for Mapping User-Provided Routes

Signed:

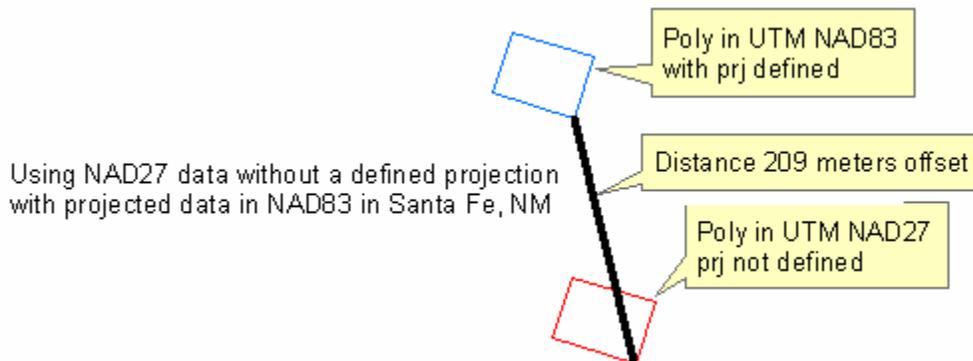
/s/ Julie Luetzelschwab, GIS and Database Coordinator

Dated: May 7, 2008

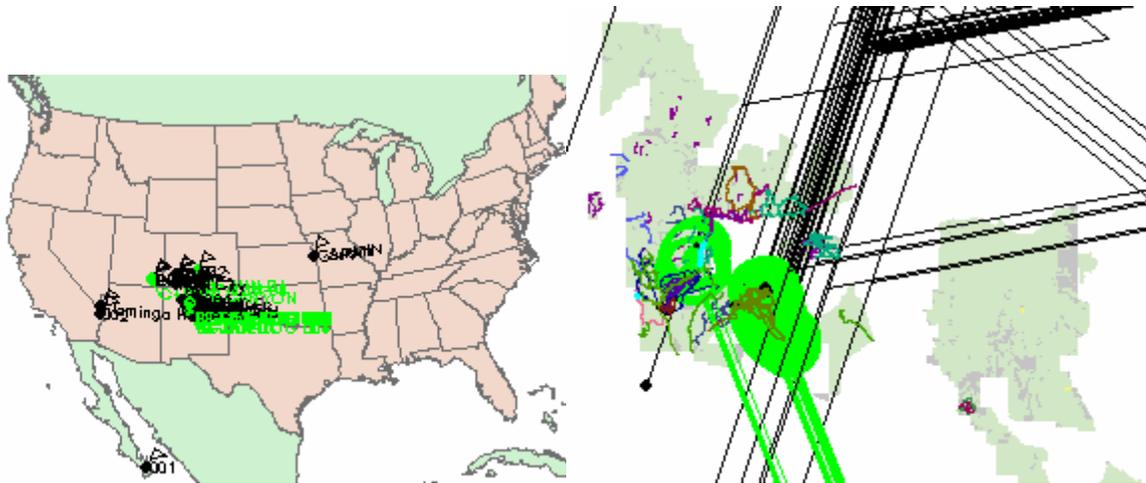
In 2006, the Forest agreed to accept digital GPS (global positioning system) data of routes from the public so the routes could be considered for motorized designation in the proposed action. Digital files were accepted until late 2007.

Digital files were generally emailed. The GIS Group converted the files into a format compatible with the ESRI ArcGIS software where it was technically feasible. Digital files came in many formats including: DXF, shapefile, Garmin MapSource, Topo!, Magellan, DeLorme, and textfiles. Most files did not identify a projection system or datum. The owners of the data were asked what projection and datum were used, but not all knew the answer. For any that looked like they had geographic coordinates (latitude/longitude), the WGS84 datum was assumed since that is the default for most GPS units. For data with coordinates in UTM, WGS84 was also assumed. At the time the Forest received most of the GPS files, the Forest was using the UTM projection with the NAD27 datum. The Forest has since switched to NAD83, which is almost identical to WGS84.

If the correct datum is not identified, the resultant data can be offset over 200 meters (see figure below). The Forest made its best attempt to identify the correct datum given the lack of such provided by most people who sent data; however, there still may be errors.

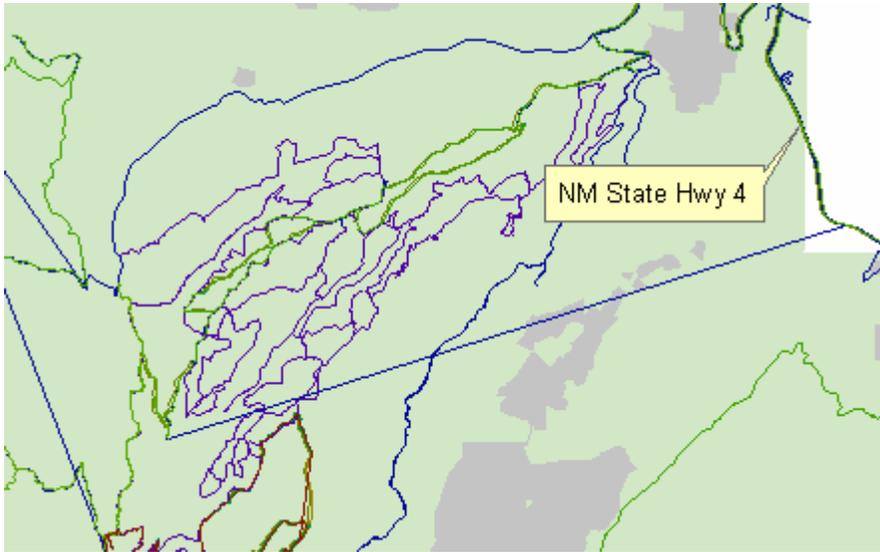


Most people sent us all the data stored on their GPS units. As a result, we received tracks and waypoints that were located in Mexico, Arizona, California, Utah, Colorado, and other parts of New Mexico (see next figure).

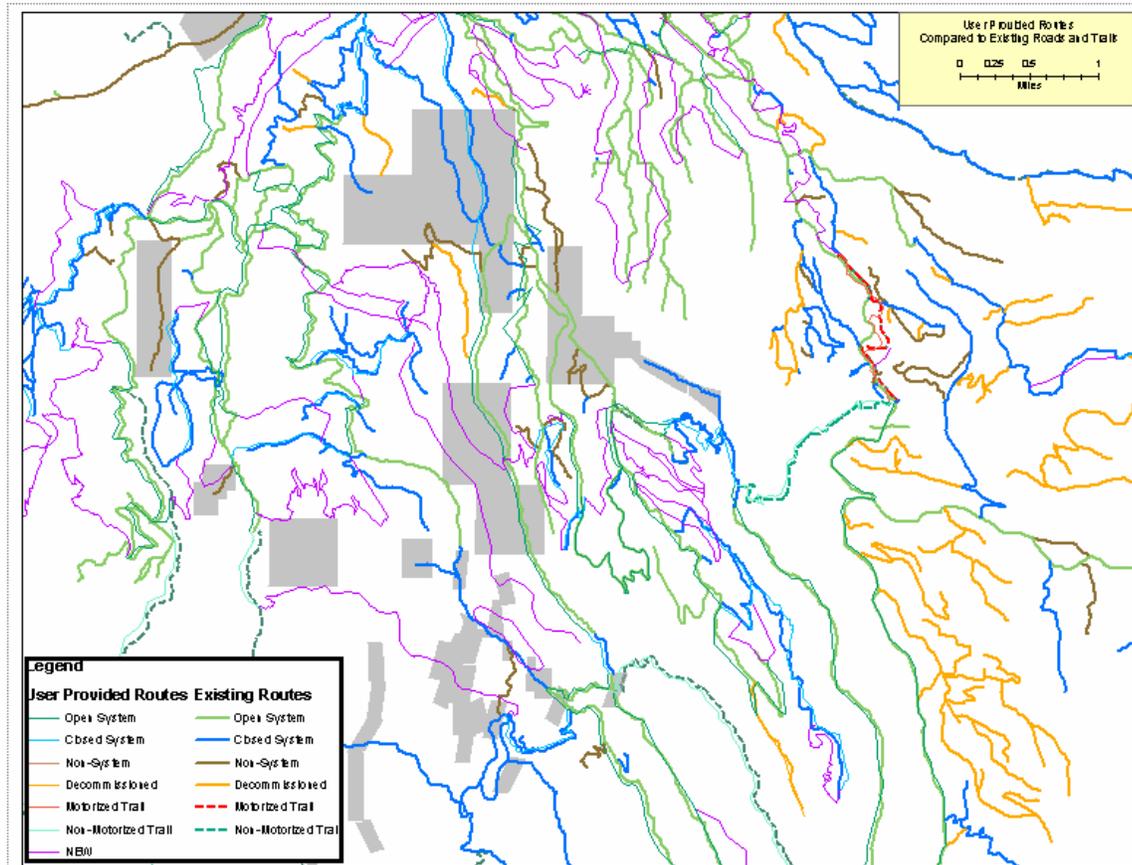


It appeared many people kept the GPS unit on all day, and thus there were tracks on highways (perhaps from when driving from home to the Forest) and backtracks from the return trip. Many different people submitted the same routes. The GIS Group sorted out the routes, identifying one line per trail so as not to double count miles (see next two figures).





The GIS Group also identified whether the routes were on existing roads or trails. Many motorcycle riders ride parallel to a route, not on the route. It was difficult to determine which routes paralleled an existing route, or was on an existing route but appeared next to it due to their GPS unit's lack of precision. In many cases, the GIS Group was able to contact people who sent us such routes to clarify what the situation actually was. Below is a map showing the "cleaned up" version of the routes that people provided to the Forest. This version has one line per route and segmented into a best estimate as to whether the route was existing or new.



Of the approximately 900 miles of routes the Forest received digitally, approximately 324 appear to be new, meaning not currently on an existing Forest Service route.

The Forest held several meetings with motorized groups where they drew routes they used on hardcopy maps. These routes were also added to the GIS database as user-provided routes.