

# GIS Technical Round Table

Shannon Knox

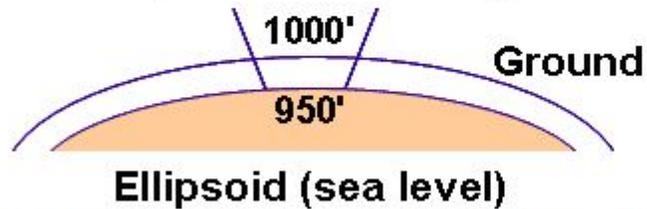
North Texas Municipal Water District

# Surface/Grid Factor

## Why correct distances?

A surveyor measures distances on the ground relative to the local ground elevation. However, grid distances in your spatial data are always measured relative to the coordinate system's ellipsoid (to simplify matters, sea level).

For example, a 1,000-foot line surveyed at a high elevation must be scaled down to fit the earth's ellipsoid at sea level. So its grid distance is somewhat less than 1,000 feet:



The distance factor is a scale factor that is used to multiply ground distances to convert them to grid distances or to divide grid distances to convert them into ground distances.

# Surface/Grid Factor

Questions:

Is there a way to ask for corrected data from Surveyor?

Is there a way to tell if the data is wrong just by looking at it?

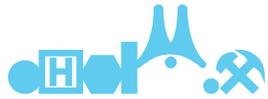
Collin County factor: \*1.000152710 grid to surface  
/1.000152710 surface to grid

# Where to get additional help?

- ❖ ESRI Technical Support/Professional Services
- ❖ GeoNet?
- ❖ NCTCOG
- ❖ Any other suggestions?

# Open Discussion

The background features abstract, overlapping geometric shapes in various shades of blue, ranging from light sky blue to deep navy blue. These shapes are primarily located on the right side of the frame, creating a modern, layered effect against the white background.



**Shannon Knox**

Sr. GIS Technician

sknox@ntmwd.com

972-442-5405

- ▶ Asset Management Integration (specifically Maximo)
- ▶ Trimble 6000/Other GPS field collection devices
- ▶ Water/Wastewater