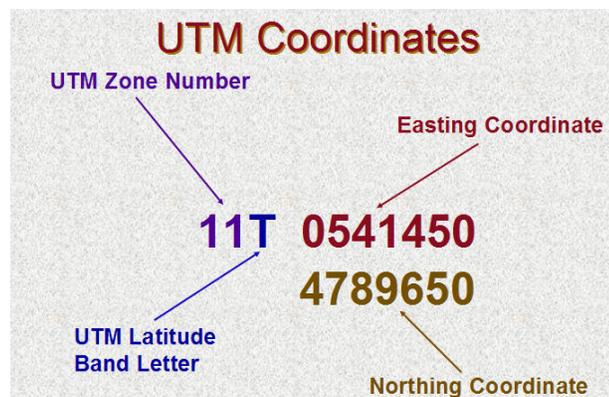


Coordinate Systems and Datum

- Coordinate Systems
 - Geographic- Latitude and Longitude
 - 3 ways to express Lat/Long
 - Degrees Minutes Seconds (NWCG STANDARD)
Ex: **hddd⁰ mm' ss.s"**: N 43⁰ 40' 55.8" X W 116⁰ 17' 14.1"
 - Degrees decimal minutes (AIRCRAFT STANDARD)
Ex: **hddd⁰ mm.mmm'**: N 43⁰ 40.93' X W 116⁰ 17.235'
 - Decimal Degrees (GIS and Computer applications)
Ex: **hddd.ddddd⁰** : N 43.68216⁰ X W 116.28725⁰
 - Cartesian- Universal Transverse Mercator (UTM) (Military)
 - UTM Zone- The earth is divided into 60 UTM Zones. UTM zones are 6° wide, 3° to either side of a Central Meridian. This narrow shape permits UTM zones to be projected from Earth's spherical surface to a flat map with minimal distortion.
 - UTM coordinates are composed of a Northing and an Easting



- Benefit is that it represents a consistent distance...one unit is equivalent to one meter.
- Datum: Point-of-origin for a coordinate System
 - Each datum will have a different point-of-origin based on different "models" of Earth's size and shape. S
 - Switching Datums changes the value of coordinate system!
 - GPS users need to verify Datum and provide the datum for other users
 - Datum should be on every map
 - Datum Shift in Arizona
 - NAD 27 to NAD 83--- 210 m difference!
 - NAD 83 to WGS 84---4 m difference.