City of Rawlins Coordinate System Discussion

Objective:

- Define a standard coordinate system for use by surveyors, engineers, developers and contractors performing work within the City of Rawlins
- Define a boundary around the City in which the coordinate system shall be used
- Require specific digital drawing files be delivered to the City
- Increase uniformity in data submitted to the City

Recommendations:

- Implement now to increase uniformity of data and usability in GIS system
- Standardized coordinate system can be included into Municipal Code Review
- Develop coordinate system into ordinance format

Discussion Topics:

- Utilize existing RJS control network purchased by City
    - PMPC working with RJS on control point coordinates
    - Develop map showing control point locations
- Defining areas where coordinate system requirements are necessary
- Accuracy requirements, based on project type
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Coordinate System Definition

- State Plane Coordinate System 1983 – Wyoming East Central Zone 4902
- North American Datum 1983
- Ellipsoid: GRS 80
- Geoid: Geoid 99 (CONUS)
- Projection: Transverse Mercator
- False Easting: 1,312,333.3333 ft (400,000 m)
- False Northing: 328,083.3333 ft (100,000 m)
- Scale Factor: 0.99993825
- Elevation Factor: 0.99967706
- Average Elevation: 6,814 feet
- **Combined Factor: 0.99961533**
- Inverse of Combined Factor: 1.00038481
- Vertical Datum: North American Vertical Datum 1988 (NAVD88)
- Basis of bearing shall be grid north
- All distances and lengths shall be in U.S. Survey Feet

The City shall require use of the coordinate system above for submittal of drawing files for the following project types:

- Subdivision plats and new development drawings
- Site plans for building permits (Buildings larger than 8,000 square feet)
- Utility construction
- Roadway construction
- Property and boundary surveys
- Any drawing submittal to the City requiring survey work not mentioned above

The City shall require submittal of the following files for their records on CD or DVD:

1. Drawing files
   - File Types: .dwg, .dxf, 1 hard copy mylar plan set
   - Coordinates for drawing files shall be ground coordinates adjusted by the combined factor listed above
   - Both digital and hard copy drawing files submitted must have the following note on each sheet: *The coordinates of this project are based on NAD 83, State Plane Coordinate System, East Central Zone #4902; the coordinates are modified to ground surface by dividing each coordinate by a combined scale factor of 0.99961533, Vertical Datum NAVD88 was used for vertical control, basis of bearing is grid north.*
2. GIS Files
   - File Types: .mxd, .shp, .sbn, .sbx, shx, .prj, .dbf
   - Coordinates for GIS files shall be ground coordinates that have been adjusted by the combined factor listed above

This coordinate system shall be used for projects within the area surrounding the City of Rawlins and within the following boundaries based on the Modified System above:

- West Boundary: 1,313,300 feet (Longitude : -107.3298)
- East Boundary: 1,360,800 feet (Longitude: -107.1555)
- North Boundary: 815,700 feet (Latitude: 41.8382)
- South Boundary: 780,700 feet (Latitude: 41.7423)

National Geodetic Survey (NGS) points within a radius of 4 miles of Rawlins are listed by point identification number (PID) in the table below:

PID	Designation	Horizontal Order	Vertical Order
MP0613	RAWLINS	Second	N/A
MP0248	PACS	Second	First - Class II
MP0610	FLY	Second	N/A
MP0612	RAWLINS WATER TANK	Third	N/A
P032	RAWLINSWWTWY2005 CORS ARP	Special (CORS)	N/A
DI2250	RAWLINSWWTWY2005 GRP	First	N/A

Additional information and NGS data sheets for these points can be obtained on the web at www.ngs.noaa.gov. Search by PID under the datasheets tab.