March 31, 2009

FACT SHEET SF 143

During the 2009 General Session of the Sixtieth Legislature of the State of Wyoming, W.S. 10-4-305 - Marking Obstructions (Senate File bill #0143) was created. With safety as the primary concern, this act requires all new structures meeting certain criteria to be marked so they will be visible and requires all erected structures meeting certain criteria to be registered. This will allow anyone who might be conducting low-level flights to identify where current structures are located and will provide for the marking of future structures after March 4, 2009 so they can be seen more easily.

A. What Structures Must Be Marked?

Structures that meet the criteria listed below are required to be made visible so that they would be recognizable in clear air during daylight hours from a distance of at least 2,000 feet. Structures can be made visible by lighting, marking, painting, flagging, or otherwise constructing the tower in a manner that makes the tower visible from at least 2,000 feet. Structures must be marked if they meet all of the following criteria.

1) The structure is located outside the exterior boundaries of any incorporated city, town or recorded subdivision, and the structure's appearance is not otherwise mandated by state or federal law or rule of regulation.
2) The structure is at least 50 feet in height above the ground.
3) The structure is associated with the development or study of wind power (i.e., meteorological tower or "met tower").
4) The structure was erected, raised after being lowered, or purchased or leased on or after the effective date of this act. (March 4, 2009).

B. What Structures Must Be Recorded?

Every person owning or leasing a structure meeting the first three criteria in section A must report the following data, to the Wyoming Department of Transportation:

1) The structure's exact location either in UTMs (Universal Transverse Mercator coordinate system) or latitude and longitude coordinates (see "Understanding UTM Values" and "Understanding Latitude and Longitude" below for details). The exact location coordinates can easily be read using a GPS unit.
2) Elevation of ground at site of tower (in feet).
3) The structure's height above the ground (in feet).
4) The structure's owner (this data will not be made available to the public).
5) The method used to make the structure visible (lighting, painting, etc.).

C. How to Record Data?

- All data must be entered into the Met Tower Database which can be accessed through the Wyoming Department of Transportation website. The reporting form will be available April 15 on the WYDOT web site: www.dot.state.wy.us navigating from there to the Aeronautics/Met Tower Reporting page.
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- All data reported on the Wyoming Department of Transportation website will be made available to the public (with the exception of structure ownership) within 5 days.

E. What are the Deadlines for Marking Structures and Recording the Location of Structures?

- Data must be recorded on or before April 30, 2009 for every structure erected prior to April 30, 2009 for those structures meeting criteria 1-3 under section A.

- Structures that meet criteria 1-4 in section A must be marked and reports filed not less than 10 days prior to the structure being raised or erected.

- If a structure that required marking is removed, the person who removes the structure must report the removal in the Met Tower Database accessed through the Wyoming Department of Transportation website within 10 days.

F. Other Information

- Recommend use of North American Datum (NAD) 83 geodetic reference system for mapping all locations.

- Location data need only be recorded in one coordinate format. The database will automatically convert the coordinates into the other two formats.

Understanding UTM Values

The Universal Transverse Mercator (UTM) coordinate system is a grid-based method of specifying locations on the surface of the Earth. The UTM system divides the surface of the earth into 60 longitudinal zones of 6° width, and 20 latitudinal bands of 8° height between 80° S latitude and 84° N latitude (the northernmost latitudinal band is 12° in height). Coordinates of locations within each zone are defined by the distance (in meters) from the zone's central meridian and the distance from the equator. To avoid negative readings, the central meridian of each zone is assigned a "false value" of 500,000 meters. Distances are added to, or subtracted from this value depending on whether the location is east or west of the central meridian. The equator is assigned a value of zero (0) meters as a reference for readings in the northern hemisphere. Locations are identified by three values: UTM Zone, Northing, and Easting. The Northing is the distance from the equator in meters. The Easting is the distance from the central meridian of the zone (500,000 m plus the actual distance east or minus the actual distance west).

UTM Zone – Wyoming is within UTM zones 12 and 13. The dividing line between these two UTM zones is 108° W longitude. This longitudinal line runs north to south a few miles west of Worland

and Wamsutter. All locations east of 108° W. longitude have a UTM Zone of 13. All locations west of this line have a UTM Zone of 12.
The Universal Transverse Mercator coordinate system data can be read from the axes of many standard maps or can be obtained with most GPS Units.

Rules for recording UTM data

- UTM Zone values must be 12 or 13 within Wyoming.
- Northing values must be 7-digits long.
- Easting values must be 6-digits long.
- An example: The observer looks at his/her GPS and sees, "UTM Zone 12, 593296E, 4746683N".

Understanding Latitude and Longitude

Latitude and longitude provide angular coordinates for specifying locations on the surface of the earth. **Latitude** is the angular distance of a point north or south of the Equator, ranging from 0° at the equator to 90° at each pole. **Longitude** is the angular distance of a point east or west of the Prime Meridian passing through Greenwich, England. Lines of longitude range from 0° to 180°. Each degree of latitude represents approximately 69 mi or 111 km. Each degree of longitude represents the same distance at the equator, but decreases toward the poles.

Latitude and longitude readings can be expressed either in decimal form, or as degrees, minutes, and seconds (abbreviated as °, ', and "). Each degree is subdivided into 60 minutes, and each minute is subdivided into 60 seconds. The decimal form simply indicates the fractional degree reading rather than minutes and seconds.

Wyoming lies between 41° and 45° N. Latitude, and between 104° 3' 9" and 111° 2' 46" W. Longitude.

Rules for recording Latitude and Longitude data

- Latitude and longitude readings in degrees, minutes and seconds must be recorded to the nearest tenth of a second.
- Latitude and longitude readings in decimal format must be carried out to 4 decimal places (to the nearest ten thousandth of a degree).
- All latitude readings in Wyoming are north latitude. All longitude readings in Wyoming are west longitude.
- An example: The observer looks at his/her GPS and sees, 41° 32' 12" N, 104° 48' 23" W. The decimal form of this reading is 41.5368° N, 104.8066° W.

Questions

If you have any questions, please contact the Wyoming Game and Fish Department Telephone Information Center at:

In State: 1-800-842-1934
Out of State: 307-777-4600