

Title 10 – DEPARTMENT OF NATURAL RESOURCES
Division 35 – Land Survey
Chapter 1 – Cadastral Mapping Standards

10 CSR 35-1.010 Application of Standards

PURPOSE: These minimum standards provide the digital mapper and recipient of digital cadastral parcel mapping products a realistic guideline for the product delivered. This rule describes the digital cadastral mapping system components to which these minimum standards apply.

The minimum standards in this chapter apply to digital cadastral mapping as it relates to the location of the United States Public Land Survey System. Any map designed and used to reflect legal property descriptions or boundaries for use in a digital cadastral mapping system shall comply with these rules unless otherwise specified in writing. It is not the intention that these minimum standards address the particular requirements of assessment mapping included in the rulemaking authority of the Missouri State Tax Commission. The intention is to work in conjunction with Commission authority.

10 CSR 35-1.020 Organization and Description

(1) Scope. This standard describes digital cadastral mapping system components, content, design, and creation.

(2) Mission. To provide a standard for the definition and structure of digital cadastral data in order to facilitate data compatibility, and to protect and enhance the investments in digital cadastral data at all levels of government and the private sector.

(3) Goals.

(A) To provide common definitions for cadastral information found in public records, used to create the digital cadastre.

(B) To resolve discrepancies related to the use of homonyms and synonyms in land record systems, to minimize duplication within and among those systems.

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(C) To provide guidance and direction for land records, mapping and land surveying professionals on standardized attribute values and definitions, to improve land records creation, management.

(D) To use participatory involvement in the Standard development to reach out to organizations to encourage broadly based application of the Standard.

10 CSR 35-1.030 Definitions

PURPOSE: This rule defines the terms as used in this standard.

(1) "Cadastral Data," Source information used to delineate the geographic extent, quantity and dimensions of cadastral parcels. Source information includes the United States Public Land Survey System (PLSS), subdivision plats, land surveys, real estate conveyances, right-of-way plans, etc.

(2) "Cadastral parcel mapping," The delineated identification of all real property parcels. The cadastral map is based upon the United States Public Land Survey System (PLSS). For cadastral parcel maps the position of the legal framework is derived from the PLSS, existing tax maps, and tax database property descriptions, recorded deeds, recorded surveys, and recorded subdivision plats;

(3) "Digital Cadastral Parcel Mapping," Encompasses the concepts of automated mapping, graphic display and output, data analysis, and database management as pertains to cadastral parcel mapping. Digital cadastral parcel mapping systems consist of hardware, software, data, people, organizations, and institutional arrangements for collecting, storing, analyzing, and disseminating information about the location and areas of parcels and the United States Public Land Survey System.

(4) "Digital Section Vertices" The points on a digital cadastral map that define the PLSS lines and corners.

(5) "Metadata," Information that describes specific details about a dataset. Metadata for geographic information may include the source of the data, its creation date and format, its projection scale, resolution, and accuracy.

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(6) “Metes and Bounds,” Describe the limits of a land parcel by reference to courses and distances around a tract, and by reference to natural and artificial monuments of record.

(7) “Missouri State Plane Coordinate System,” The system of plane coordinates that have been established by the National Oceanic Survey/National Geodetic Survey, or its successors, for defining and stating the geodetic positions or locations of points on the surface of the earth within the state of Missouri as defined in Sections 60.401 through 60.491 of the Missouri Revised Statutes.

(8) “Parcel,” A single unit of real property which can be described by location and boundaries and for which there is a history of defined, legally recognized interests. Parcel boundaries are usually described in a conveyance document by aliquot part, metes and bounds or by lot number in a recorded subdivision.

(9) “Point,” A vector map feature having no length and no area, but is simply defined by a coordinate location.

(10) “Polygon,” A vector map feature represented by a closed geometric figure.

(11) “Polyline,” A vector map feature formed by connecting two points and having no area.

(12) “Tax Map,” A document or map for taxation purposes showing the location, quantity, dimensions and other relevant information pertaining to a parcel of land subject to ad valorem taxes, commonly known as property taxes.

(13) “Topology,” The spatial relationships between connecting, or adjacent, geographic features. Topological relationships are for spatial modeling operations that do not require coordinate information.

(14) “United States Public Land Survey System (PLSS),” The rectangular survey system created by the United States Government founded on a principal meridian and base line and forming townships approximately 6 miles north and south by 6 miles east and west, which are subdivided into 36 sections approximately one mile square. The system, established by surveys executed under the direction of the General Land Office (GLO), and evidenced by township plats, field notes and other available documentation. This system includes nonconforming private claims and other surveys as may have been performed under the direction of the General Land Office. The Fifth Principal Meridian is the basis of the Missouri PLSS.

10 CSR 35-1.040 – Coordinate System for Digital Cadastral Parcel Mapping Specified

PURPOSE: This rule specifies the coordinate system utilized for digital cadastral parcel mapping in Missouri.

- (1) The Missouri State Plane Coordinate System shall be the coordinate system used for digital cadastral parcel mapping in Missouri.
- (2) To convert metric mapping coordinates, if desired, to U.S. Survey Feet, use the conversion of 1-meter equals 3.28083333 feet, where 1 meter equals 39.37 inches exactly.

10 CSR 35-1.050 – Digital Cadastral Parcel Mapping Requirements Pertaining to the United States Public Land Survey System

PURPOSE: This rule describes the minimum standard requirements that apply to the United States Public Land Survey System in a digital cadastral parcel mapping system.

- (1) The United States Public Land Survey System (PLSS) shall be the foundation for digital cadastral parcel mapping in Missouri.
- (2) Accurately delineate the PLSS layer through practical application of available source information. Missouri County Courthouses, the Missouri Land Survey Repository, and other official sources and authorities of PLSS and record surveys are appropriate sources for survey information and documentation.
- (3) Determination of the digital location of section and quarter section corners of the PLSS should adhere to the survey principles, which created the PLSS, and now guide maintenance. Digital section vertices shall be held to the accuracy standards defined in this rule, preferably existing only at the quarter-corners.
- (4) Data prevalence for the establishment of the digital location of section corners shall be:
 - (A) Known coordinate points established by a licensed professional land surveyor, or as recorded with the Missouri Department of Natural Resources' Land Survey Program.

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(B) Reference data from available recorded or unrecorded surveys established by the County Surveyor or by licensed private surveyors and/or surveys filed with the Missouri Department of Natural Resources' Land Survey Program.

(C) Reference data from real estate conveyances, subdivisions plats, or other recorded land information.

(D) General Land Office (GLO) surveys and field notes.

(E) Established land use on digital orthophotography.

(6) Documentation for the establishment of the PLSS section corners shall consist of a point data layer delineating how each corner was set. The PLSS registered section corner documents and subsequent research shall be referenced to this data layer within the digital mapping system.

Delineation attribute may include but not be limited to:

(A) Coordinate

(B) Survey

(C) Deed

(D) Subdivision or Plat

(E) GLO

(F) Orthophotography

(G) Tax Map

10 CSR 35-1.060 – Digital Cadastral Parcel Mapping Requirements Pertaining to Land Parcels

PURPOSE: This rule describes the minimum standard requirements that apply to land parcels in a digital cadastral parcel mapping system.

(1) A digital cadastral parcel map shall be based upon the USPLSS.

(2) Parcels shall be structured in a manner that facilitates topological analysis.

(3) All parcels shall be constructed as polygons.

(4) All PLSS corners lines shall be continuous and seamless within a mapping project and with adjoining mapping projects where mapping has been completed in conformity to these standards.

10 CSR 35-1.070– Accuracy Standard

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PURPOSE: This rule prescribes the accuracy reporting requirements for digital cadastral parcel mapping.

(1) Accuracy reporting for digital cadastral parcel maps shall be made in accordance with Missouri Mapping Standards (MMS) of 10 CSR 30-6.010 to 6.030, or the Federal Geographic Data Committee's National Standard for Spatial Data Accuracy (NSSDA).

(2) If accuracy reporting is not provided using MMS, NSSDA, or other recognized standards, information shall be provided that enables users to evaluate how the data fits the requirements of their application. This information may include descriptions of the source material from which the PLSS and cadastral parcels were digitally constructed, accuracy of ground surveys associated with PLSS and cadastral parcel digital construction, and quality control procedures used in the production process.

10 CSR 35-1.080 – Disclaimer

PURPOSE: This rule describes the disclaimer to be included with any digital or hard copy map produced from a digital cadastral parcel mapping system.

A digital cadastral parcel map provides graphic representation and access to cadastral information, but it does not purport to represent the results of a property boundary survey of each parcel shown. It is not intended for property boundary determination of individual parcels, nor be used in lieu of a property boundary survey, by a licensed professional land surveyor.

Therefore, prominent display of the following disclaimer, or equivalent wording, shall be on any digital or hard copy map that displays cadastral parcel data.

“This Cadastral Map is for informational purposes only. It does not purport to represent a property boundary survey of the parcels shown and shall not be used for conveyances or the establishment of property boundaries.”

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AUTHORITY: Section 60.670 RSMo (2010).

*PUBLIC COST: This proposed amendment will not cost state agencies more than
???.?? dollars (\$???) in the aggregate.*

*PRIVATE COST: This proposed amendment will not cost private entities more than
???.?? dollars (\$???) in the aggregate.*

*NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: Anyone
may file a statement in support of or in opposition to this proposed amendment with the
Missouri Department of Natural Resources, Division of Geology and Land Survey, Sharon
Hankins, PO Box 250, Rolla, MO 65402 or via email at sharon.hankins@dnr.mo.gov .*