



Rules of
Department of Agriculture
Division 90—Weights, Measures and Consumer
Protection
Chapter 65—Cadastral Mapping Survey Standards

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**Title 2—DEPARTMENT OF
AGRICULTURE**
**Division 90—Weights, Measures and
Consumer Protection**
**Chapter 65—Cadastral Mapping Survey
Standards**

2 CSR 90-65.010 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. Pursuant to HB28 the Land Survey Program was moved from Department of Natural Resources to Department of Agriculture in August 2013.

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.

AUTHORITY: section 60.670, RSMo 2016. Original rule filed Dec. 1, 2016, effective June 30, 2017.*

**Original authority: 60.670, RSMo 2010, amended 2013.*

2 CSR 90-65.020 Organization and Description

PURPOSE: This rule describes the scope, mission, and goals of the Cadastral Mapping Survey Standards.

(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;

(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; and

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

AUTHORITY: section 60.670, RSMo 2016. Original rule filed Dec. 1, 2016, effective June 30, 2017.*

**Original authority: 60.670, RSMo 2010, amended 2013.*

2 CSR 90-65.030 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.

(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, RSMo.

(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 (2) 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 six (6) miles north and south by six (6) miles east and west, which are subdivided into thirty-six (36) sections approximately one (1) 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.

AUTHORITY: section 60.670, RSMo 2016. Original rule filed Dec. 1, 2016, effective June 30, 2017.*

**Original authority: 60.670, RSMo 2010, amended 2013.*

2 CSR 90-65.040 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.

AUTHORITY: section 60.670, RSMo 2016. Original rule filed Dec. 1, 2016, effective June 30, 2017.*

**Original authority: 60.670, RSMo 2010, amended 2013.*

2 CSR 90-65.050 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 Agriculture's Land Survey Program;

(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 Agriculture's Land Survey Program;

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

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

(E) Established land use on digital orthophotography.

(5) 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; and

(G) Tax Map.

AUTHORITY: section 60.670, RSMo 2016. Original rule filed Dec. 1, 2016, effective June 30, 2017.*

**Original authority: 60.670, RSMo 2010, amended 2013.*

2 CSR 90-65.060 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 United States Public Land Survey System (USPLSS).

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

(3) All parcels shall be constructed as polygons.

(4) All Public Land Survey System (PLSS) corner 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.

AUTHORITY: section 60.670, RSMo 2016. Original rule filed Dec. 1, 2016, effective June 30, 2017.*

**Original authority: 60.670, RSMo 2010, amended 2013.*

2 CSR 90-65.070 Accuracy Standard

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 10 CSR 30-6.030, 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 Public Land Survey System (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.

AUTHORITY: section 60.670, RSMo 2016. Original rule filed Dec. 1, 2016, effective June 30, 2017.*

**Original authority: 60.670, RSMo 2010, amended 2013.*

2 CSR 90-65.080 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.”

AUTHORITY: section 60.670, RSMo 2016.
Original rule filed Dec. 1, 2016, effective June 30, 2017.*

**Original authority: 60.670, RSMo 2010, amended 2013.*



**Rules of
Department of Commerce and
Insurance**

**Division 2030—Missouri Board for Architects,
Professional Engineers, Professional Land Surveyors,
and Professional Landscape Architects
Chapter 20—Mapping Survey Standards**

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Title 20—DEPARTMENT OF COMMERCE AND INSURANCE
Division 2030—Missouri Board for Architects, Professional Engineers, Professional Land Surveyors, and Professional Landscape Architects
Chapter 20—Mapping Survey Standards

20 CSR 2030-20.010 Definitions

PURPOSE: This rule defines the terms used in this chapter.

(1) A map is a graphic representation of the physical features (natural, artificial, or both) of a part of the whole of the earth's surface, by means of signs and symbols or photographic imagery, at an established scale, on a specified projection, and with the means of orientation indicated. A map may be in various forms such as printed maps, subdivision of land in the form of plats, or in graphic presentations on a computer screen such as in a Geographic Information System (GIS) or in a Land Information System (LIS).

(2) Horizontal map accuracy is defined as the root mean square (rms) error in terms of the project's planimetric survey coordinates (X,Y) for checked points as determined at full (ground) scale of the map. The rms error is the cumulative result of all errors including those introduced by the processes of ground control surveys, map compilation, and final extraction of ground dimensions from the map.

(3) Vertical map accuracy is defined as the rms error in elevation in terms of the project's elevation datum for well-defined points only.

(4) The rms error is defined to be the square root of the average of the squared discrepancies. In this case, the discrepancies are the differences in coordinate or elevation values as derived from the map and as determined by an independent survey of higher accuracy (check survey). Well-defined points are those that are easily visible and recoverable on the ground, such as: monuments or markers, bench marks, property boundary monuments; intersections of roads, railroads, etc.; corners of large buildings or structures (or center points of small buildings) etc.; In general what is well defined will also be determined by what is plottable on the map within one one-hundredth inch (1/100"). Thus while the intersection of two (2) road or property lines meeting at right angles would come within a sensible interpretation, identification of the intersection of such lines meet-

ing at an acute angle would obviously not be practicable within one one-hundredth inch (1/100"). Similarly, features not identifiable upon the ground within close limits are not to be considered as test points within the limits quoted, even though their positions may be scaled closely upon the map. In this class would come timber lines, soil boundaries, etc.

AUTHORITY: section 327.041, RSMo 2016. This rule originally filed as 4 CSR 30-20.010. Original rule filed May 3, 1994, effective Dec. 30, 1994. Amended: Filed Dec. 1, 2005, effective June 30, 2006. Moved to 20 CSR 2030-20.010, effective Aug. 28, 2006. Non-substantive change filed Oct. 21, 2015, published Dec. 31, 2015. Amended: Filed Jan. 18, 2022, effective July 30, 2022.*

**Original authority: 327.041, RSMo 1969, amended 1981, 1986, 1989, 1993, 1995, 1999, 2001, 2010, 2014.*

20 CSR 2030-20.020 Map Accuracy Standards

PURPOSE: This rule prescribes minimum acceptable mapping standards.

(1) Horizontal Accuracy.

(A) Class I. The root mean square (rms) error of a map product shall be less than 0.01 of one inch (1") on the map or in the case of a metric map, 0.025 of one centimeter (1 cm) on the map.

EXAMPLE (Customary Units)

Scale	Limiting rms Value in Feet
1" = 20'	0.2'
1" = 50'	0.5'
1" = 100'	1.0'
1" = 200'	2.0'
1" = 400'	4.0'
1" = 1000'	10.0'
1" = 2000'	20.0'

EXAMPLE (SI Units)

Scale	Limiting rms Value in Meters
1 cm = 5m	0.125
1 cm = 10m	0.250
1 cm = 100m	2.50
1 cm = 200m	5.00

(B) Class II. The rms shall be twice that required for Class I.

(C) Class III. The rms shall be three (3)

times that required for Class I.

(2) Vertical Accuracy.

(A) Class I. For Class I maps rms error in elevation shall be less than one-third (1/3) of the indicated contour interval for well-defined points only, and one-sixth (1/6) of the contour interval for spot heights.

(B) Class II. The rms error may be twice that required for Class I.

(C) Class III. The rms error may be three (3) times that required for Class I.

(3) Mixed Accuracy. A map may be compiled that complies with one (1) class of accuracy in elevation and another in planimetry.

AUTHORITY: section 327.041, RSMo Supp. 1993. This rule originally filed as 4 CSR 30-20.020. Original rule filed May 3, 1994, effective Dec. 30, 1994. Moved to 20 CSR 2030-20.020, effective Aug. 28, 2006. Non-substantive change filed Oct. 21, 2015, published Dec. 31, 2015.*

**Original authority: 327.041, RSMo 1969, amended 1981, 1986, 1989, 1993, 1995, 1999.*

20 CSR 2030-20.030 Certification of the Map

PURPOSE: This rule prescribes the statement made by the professional land surveyor of the map.

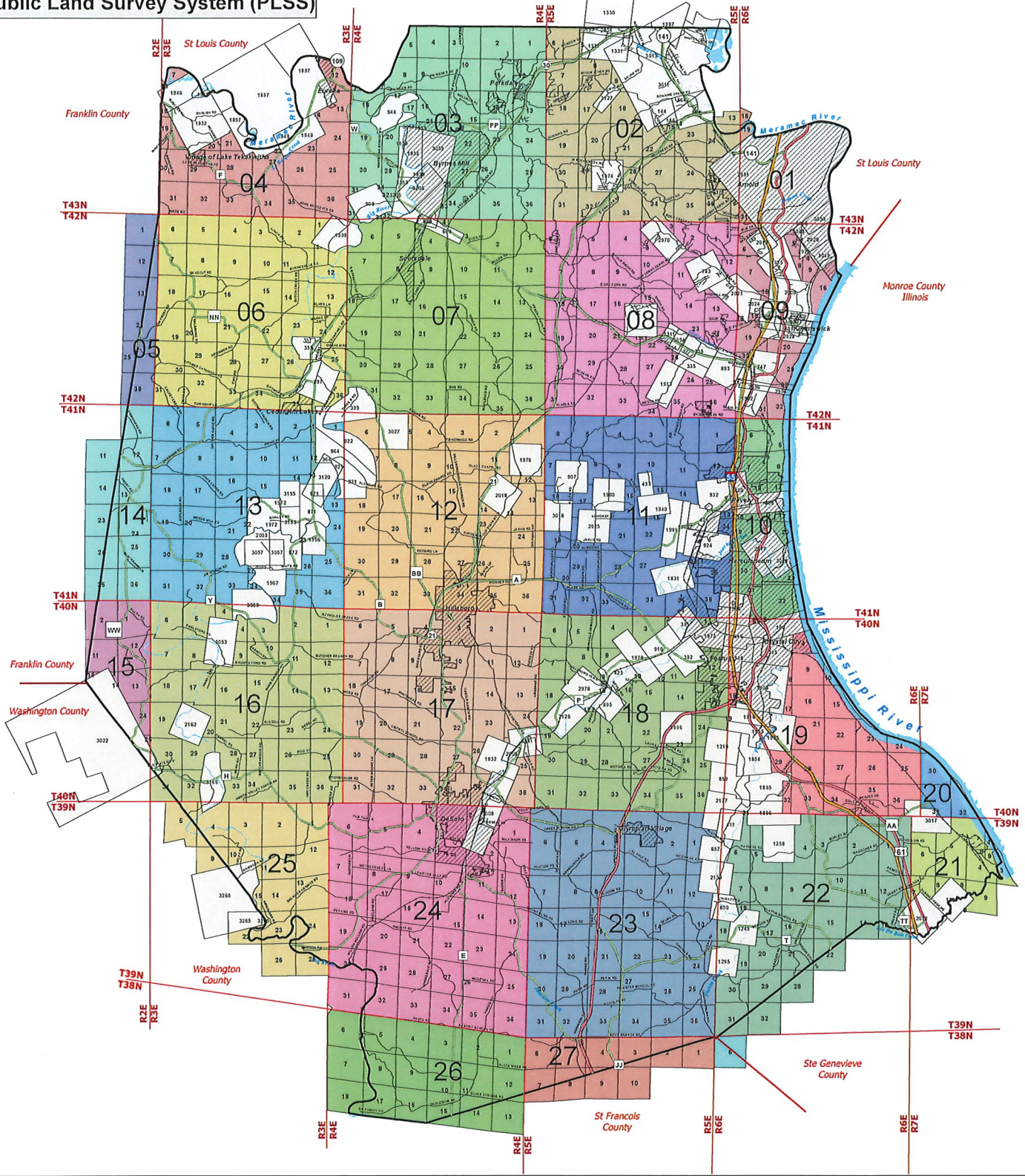
(1) Maps meeting the requirements of this standard shall note this fact on their legends with the statement that "This map complies with the Missouri Map Accuracy Standard." The class of accuracy shall also be noted.

(2) When a map is a considerable enlargement of a completed map, that fact shall be stated in the legend. The scale of the original map shall also be noted.

AUTHORITY: section 327.041, RSMo 2016. This rule originally filed as 4 CSR 30-20.030. Original rule filed May 3, 1994, effective Dec. 30, 1994. Moved to 20 CSR 2030-20.030, effective Aug. 28, 2006. Non-substantive change filed Oct. 21, 2015, published Dec. 31, 2015. Amended: Filed Oct. 31, 2016, effective April 30, 2017.*

**Original authority: 327.041, RSMo 1969, amended 1981, 1986, 1989, 1993, 1995, 1999, 2001, 2010, 2014.*

Public Land Survey System (PLSS)



Jefferson County

Department of the County Assessor
Bob Boyer, Assessor

Map Title: **PLSS**

Print Date: 3/15/2023

CAUTION

This map is for tax purposes only. It is not intended nor sufficiently accurate to be used for conveyances. Any use other than for tax purposes shall be at the user's risk. The reproduction or copying of this map or any part thereof by any process is prohibited without the written permission of the Department of the County Assessor.

Pursuant to 2 CSR 90-65.080: "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." Authority: section 60.670, RSMo 2016.

Infrastructure	
	County Road
	Railroads
	State Route
	State Road
	US Highway
	Interstate

Hydrography

Rivers/Creeks

Boundaries

Township and Range

Municipalities

Land Grants (Surveys)

www.jeffco.org/assessor
gassessor@jeffco.org
636-797-5456



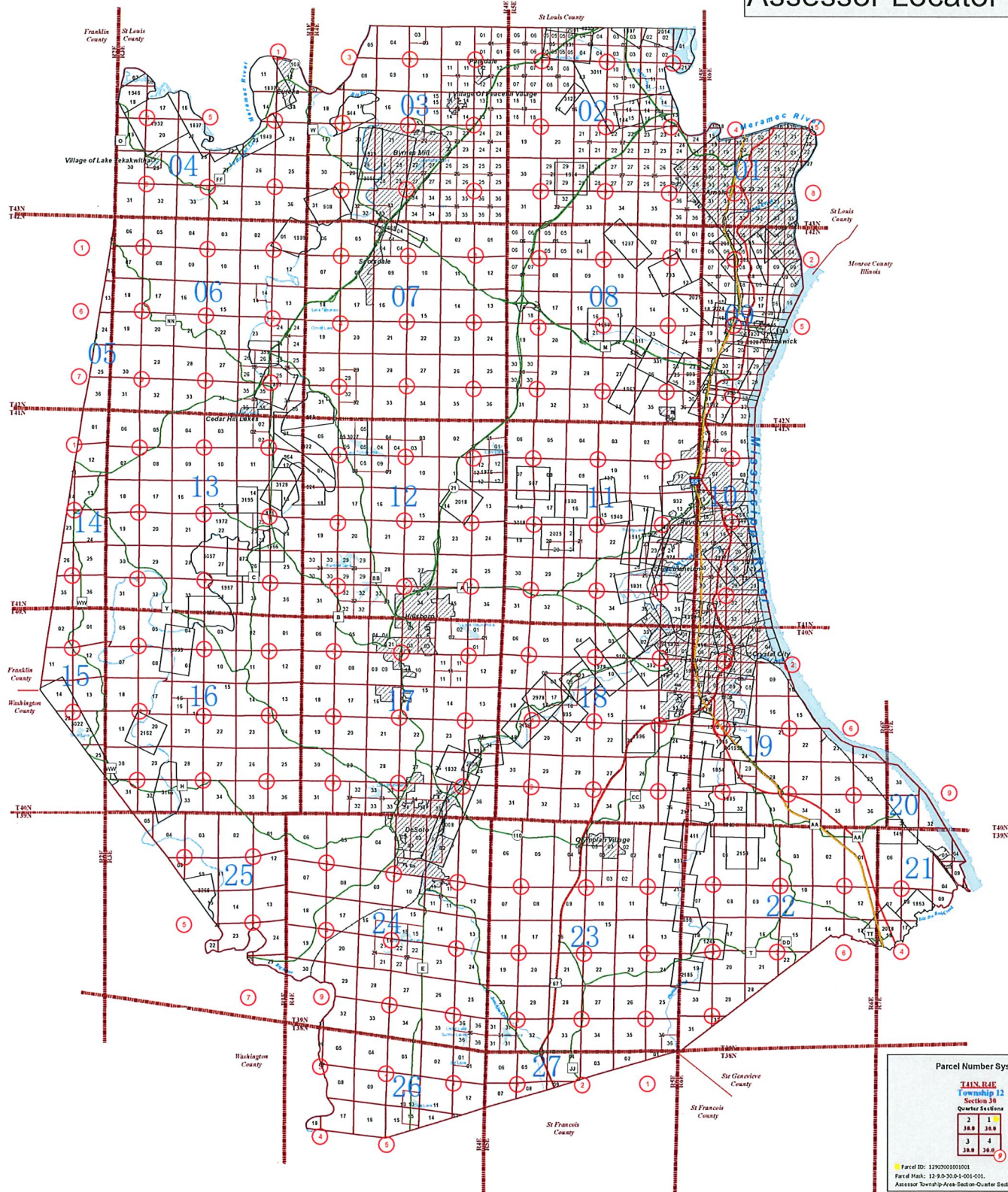
Data Source: Department of the County Assessor, Jefferson County 911, Missouri Department of Agriculture

Scale: 1:96,000
0 0.5 1 2 3 4 Miles

Coordinate System: NAD 1983 State Plane MO East FIPS 2405 US Foot
Projection: Transverse Mercator



Assessor Locator Grid



Parcel Number System

T14N R14E
 Township 14
 Section 30
 Quarter Sections

2	1
3A	3B
3	4
3C	3D

Parcel ID: 12920010101
 Field No: 12-9-2014-001-01
 Assessor: Township-Area-Section-Quarter-Block-Parcel-Section

Jefferson County
 Department of the County Assessor
 Bob Boyer, Assessor

Map Title: **Locator**

Print Date: 3/20/2023

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Infrastructure

- City Street
- County Road
- Local Roads
- Festus Special
- Railroads
- State Route

Boundaries / Land Survey System

- Township / Range
- Section, Quarter Section
- Land Grants (Surveys)
- Area
- Assessor's Township

Hydrography

- Rivers/Creeks
- Bodies

Other

- State Road
- US Highway
- Interstate

Data Source: Department of the County Assessor, Jefferson County 911, Missouri Dept of Agriculture Land Survey

Scale: 1:96,000

0 0.5 1 2 3 4 Miles

Coordinates System: NAD 1983 State Plane MO East FIPS 2018 US Foot
 Projection: Transverse Mercator

www.jeffco.org/assessor
 g.assessor@jeffco.org
 636-797-5466


Parcel Number System

T41N, R4E


Township 12

Section 30

Quarter Sections

2	1 
30.0	30.0
3	4
30.0	30.0

9

 Parcel ID: 12903001001001

Parcel Mask: 12-9.0-30.0-1-001-001.

Assessor Township-Area-Section-Quarter Section-Block-Parcel-Extension