

Florida Cadastral Mapping Guidelines



Property Tax Oversight
May 2022

NOTE: Unlike the Standard Measures of Value established by section 195.032, Florida Statutes (F.S.), the *Florida Cadastral Mapping Guidelines* are not appraisal guidelines. The *Florida Cadastral Mapping Guidelines* are specifically required by s. 195.062, F.S. and Rule 12D-1.009, Florida Administrative Code (F.A.C.), and are intended to provide procedures to property appraisers for establishing and maintaining an adequate cadastral mapping program.

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1.0 INTRODUCTION

1.1 Overview of Legal Framework, Roles and Responsibilities.

Article VII, Section 4 of the Florida Constitution requires a just valuation of all real property for ad valorem taxation, with certain exceptions. Florida property appraisers have the statutory responsibility to list and appraise all real property in each county each year for purposes of ad valorem taxation. The Florida Department of Revenue (Department) is a state agency with the statutory responsibility of general supervision of the assessment and valuation of real property for ad valorem tax purposes. The roles of property appraisers and the Department are distinct and separate, as described below.

Section 193.085(1), F.S., states the following: “The property appraiser shall ensure that all real property within his or her county is listed and valued on the real property assessment roll...”

Section 195.002(1), F.S., states the following: “The Department of Revenue shall have general supervision of the assessment and valuation of property so that all property will be placed on the tax rolls and shall be valued according to its just valuation, as required by the constitution. ...”

The Department is required to provide a manual of instructions to property appraisers.

Section 195.062(1), F.S., states the following: “The department shall prepare and maintain a current manual of instructions for property appraisers and other officials connected with the administration of property taxes. This manual shall contain all:

- (a) Rules and regulations.
- (b) Standard measures of value.
- (c) Forms and instructions relating to the use of forms and maps....”

Florida Administrative Code requires the property appraiser to establish and maintain an adequate cadastral mapping program.

Rule 12D-1.009, F.A.C., states the following:

- (1) Each county property appraiser shall have and maintain the following:
 - (a) Aerial photography suitable for the needs of his office.
 - (b) Property ownership maps which will reflect the following:
 - 1. Recorded subdivisions and/or unrecorded subdivisions, if being used for assessing, in their entirety on the property ownership maps including lot and block division and dimensions if known.
 - 2. Dimensions and acreage, where known, on all parcels over one acre in size.
 - 3. Parcel number corresponding to that as listed on the current county tax roll.

Florida Administrative Code requires the Department to provide guidelines for the establishment and maintenance by property appraisers of an adequate cadastral mapping program.

Rule 12D-1.009, F.A.C., states the following:

- (2) Suggested procedures for establishing and maintaining an adequate cadastral mapping program to meet these requirements are contained in the mapping guidelines of the Department of Revenue's Manual of Instructions.

Section 193.1142, F.S., provides direction to property appraisers for the submission of assessment rolls for ad valorem tax purposes and the inclusion of parcel-level geographic information system (GIS) data. The Department communicates each year's assessment roll requirements in the annual *Tax Roll Production, Submission, and Evaluation Standards* document, which includes a section on GIS/Map Data. The GIS/Map data is subject to review by the Department. Details for this review are communicated in the *Assessment Roll Edit Guide for Parcel-Level GIS Information*. These documents are available on the Department's Complete Submission and Roll Evaluation webpage located here:

https://floridarevenue.com/property/Pages/Cofficial_CompleteSubRollEval.aspx

1.2 Intended Users of These Guidelines. The intended users of the *Florida Cadastral Mapping Guidelines* are property appraisers, their staff, and the Department.

1.3 Intended Uses of These Guidelines. The primary intended use of the *Florida Cadastral Mapping Guidelines* is for property appraisers and their staff to use them in establishing and maintaining a mapping program. Any and all uses of these guidelines and the parcel-level GIS data must be consistent with the provisions of these guidelines and with the responsibilities of property appraisers and the Department pertaining to mapping.

These *Florida Cadastral Mapping Guidelines* have three purposes: 1) to assist property appraisers to locate, inventory and appraise all property within their jurisdictions for ad valorem tax purposes; 2) to make maximum use of data on land parcels; and 3) to aid and assist property appraisers. These guidelines are advisory. By Florida law (see s.195.062, F.S.), they are not binding or determinative.

2.0 GENERAL OVERVIEW AND DEFINITIONS

2.1 Content of These Guidelines. This document addresses the requirements for cadastral mapping in compliance with Florida law and administrative rules. Users should refer to this document in conjunction with other applicable sources of professional knowledge such as the *Standard on Digital Cadastral Maps and Parcel Identifiers, 2015*, and *GIS Guidelines for Assessors, Second Edition, 1999*, both published by the International Association of Assessing Officers (IAAO), but only to the extent that other sources do not conflict with Florida law or the manual of instructions.

This version of the *Florida Cadastral Mapping Guidelines* replaces the 1999 version entitled *State of Florida Cadastral Mapping Guidelines*. The 1999 version was published during a time of transition from manual to digital cadastral maps and provided detailed technical information to aid in that transition. Since then, several vendors have emerged as leaders in GIS technology and their systems allow for near seamless interaction with the various computer-assisted mass appraisal (CAMA) systems used by property appraisers. Since all 67 counties have established digital cadastral map programs, this document focuses on GIS/Mapping topics specific to current assessment practices in Florida.

2.2 Definitions. This section is not a complete glossary of related terms; rather its purpose is to include those that are most applicable to these guidelines. These definitions and concepts are based on the following: 1) Florida law and manual of instructions; 2) the considerations for mapping and GIS data as described herein; and 3) information from external sources. Any information from external sources may be considered only to the extent that it is consistent with Florida law and the manual of instructions.

2.2.1 Ad Valorem Tax. The amount of property taxes levied based on the value of the property, or a proportion of the property value, subject to taxation. A tax that is measured by value. Note: This term is often used to refer only to property taxes or to general property taxes, although technically it is applicable to income taxes, ad valorem tariffs, special property taxes, etc. (Source: *IAAO's Glossary for Property Appraisal and Assessment, Third Edition, 2022*)

2.2.2 Base Map. A map with points of reference and other physical features to facilitate data plotting. (Source: *IAAO's Glossary for Property Appraisal and Assessment, Third Edition, 2022*)

2.2.3 Cadastral Map. A scale map displaying property ownership boundaries and showing the dimensions of each parcel with related information such as parcel identifier, survey lines and easements. Annotations on recent sale prices and land value are sometimes added. (Source: *IAAO's Glossary for Property Appraisal and Assessment, Third Edition, 2022*)

2.2.4 Computer-Assisted Mass Appraisal (CAMA). A software package used by governmental agencies and assessing offices to establish real and personal property valuations for property tax purposes. It is composed of several applications that systematically value property. Often includes statistical analysis such as multiple regression analysis to assist the appraiser in determining the value of property for property taxation purposes. (Source: *IAAO's Glossary for Property Appraisal and Assessment, Third Edition*, 2022)

2.2.5 Coordinate System. (1) A system for locating any geographic point by determining its north–south and east–west distance from some known base point. (2) By extension, a system for identifying each assessable parcel of real estate by means of coordinates, usually by recording the coordinates of the center of each parcel. (Source: *IAAO's Glossary for Property Appraisal and Assessment, Second Edition*, 2013)

2.2.6 Geodetic Control Network. A system of monuments that are used as reference points in calculating, through triangulation, the location of other points on surveys and maps. (Source: *IAAO's Glossary for Property Appraisal and Assessment, Third Edition*, 2022)

2.2.7 Geographic Information System (GIS). 1) An overall term encompassing the entire field of computerized mapping; and 2) Also generally considered as a specific subset of the overall field. The GIS can: a) Answer what exists at a specific location. The location can be described using placename, ZIP code, latitude and longitude, or other location systems; b) Find locations satisfying specified conditions (e.g. undeveloped parcel of land zoned for light industry, at least 10 acres in size, within railroad access); c) Spot changes in area over a certain period of time; d) Find patterns (for example, it could test the hypothesis that proximity to PCB-laden transformers is a factor in the incidence of cancer in children); and e) Could model various scenarios (for example, if 10 inches of rain fell in a certain watershed, it could indicate where flooding would occur and at what hour). (Source: *IAAO's Glossary for Property Appraisal and Assessment, Third Edition*, 2022)

2.2.8 Parcel. A contiguous area of land described in a single legal description or as one of a number of lots on a plat; separately owned, either publicly or privately; and capable of being separately conveyed. In land ownership mapping for assessment purposes, a parcel is usually held to be a tract of land under one entity of ownership. It may be a combination of two or more tracts acquired by separate deeds. (Source: *IAAO's Glossary for Property Appraisal and Assessment, Third Edition*, 2022)

2.2.9 Projection. A systematic drawing of lines on a plane surface to represent the parallels of latitude and meridians of longitude of the earth or a section of the earth. (Source: *IAAO's Glossary for Property Appraisal and Assessment, Third Edition*, 2022)

3.0 CADASTRAL MAPPING IN FLORIDA

3.1 Cadastral Mapping Personnel. Proper staffing levels and training of personnel involved in the cadastral mapping process are essential. As stated in Section 3.9 of IAAO's *Standard on Digital Cadastral Maps and Parcel Identifiers*, 2013, "All mapping personnel should receive training in procedures appropriate to their tasks and job description. At a minimum, mapping and deed-processing staff should understand the engineering basis of highway and railroad rights-of-way; the surveying basis of boundary creation and description throughout the history of the jurisdiction, and appropriate legal principles of boundary and title law; and survey bearings and angles, correction angles, closure error, and closure tolerances. Once these basic competencies have been achieved, staff should be trained in techniques of mapping with coordinate geometry (COGO), computer aided drafting (CAD), and/or digital cadastral mapping systems." The Department conducts trainings that include cadastral mapping and GIS concepts and procedures.

As discussed in Section 1.1 of these guidelines, Rule 12D-1.009, F.A.C., requires property appraisers to have and maintain property ownership maps. County personnel responsible for cadastral mapping for the purpose of ad valorem taxation are not subject to the regulations of surveyors and mappers discussed in s. 472, F.S. Specifically, s. 472.003, F.S., lists persons not affected by ss. 472.001-472.037. Section 472.003(4), F.S., reads:

"Persons employed by county property appraisers, as defined at s. 192.001(3), and persons employed by the Department of Revenue, to prepare maps for property appraisal purposes only, but only to the extent that they perform mapping services which do not include any surveying activities as described in s. 472.005(4)(a) and (b)."

3.2 Base Map Development. A base map is a geometric control feature in a digital mapping system that permits many other specialized theme layers to be brought into absolute position by registration on the base map. There are three general themes or layers of base map content that will permit registration of most other themes or layers: boundaries, roads, and water features. Boundaries can be divided into three classes: public land survey boundaries, parcel boundaries and political boundaries. Use of coordinate geometry (COGO) in base map development is recommended and is supported by the Department.

3.3 Geodetic Controls. Geodetic controls are points with known locations on the earth's surface that together create a reference network for surveying. According to Section 3.1 of IAAO's *Standard on Digital Cadastral Maps and Parcel Identifiers*, 2013, "These points may be described in terms of latitude and longitude but are more commonly projected to a coordinate system, such as state plane coordinates. Density and placement of control points should be related to map scale, population density,

property value, accuracy specifications and anticipated product life span.” The Department recommends use of geodetic controls.

3.4 Projection. Map projections are representations of the earth’s three-dimensional surface modeled to a two-dimensional plane. The earth cannot be represented on a plane without some distortion, so no one projection gives an absolutely true picture of the earth. Two projections often used in GIS applications are Lambert conic conformal and transverse Mercator. Both of these projections are used for mapping Florida.

3.5 Datum. According to the National Ocean Service, as published on its website (<https://oceanservice.noaa.gov/facts/datum.html>): “A geodetic datum is an abstract coordinate system with a reference surface (such as sea level) that serves to provide known locations to begin surveys and create maps. … There are two main datums in the United States. Horizontal datums measure positions (latitude and longitude) on the surface of the Earth, while vertical datums are used to measure land elevations and water depths.”

The National Ocean Service coordinate system is mentioned in s. 177.031(19), F.S., which states: “State plane coordinates” means the system of plane coordinates which has been established by the National Ocean Service for defining and stating the positions or locations of points on the surface of the earth within the state and shall hereinafter be known and designated as the “Florida State Plane Coordinate System.” For the purpose of the use of this system, the zones established by the National Ocean Service in NOAA Manual NOS NGS 5, State Plane Coordinate System of 1983, shall be used, and the appropriate projection and zone designation shall be indicated and included in any description using the Florida State Plane Coordinate System.”

Updates to the zones established by the National Ocean Service’s State Plane Coordinate System of 1983 and the Florida State Plane Coordinate System are anticipated. These updates will be communicated to property appraisers and included in the Department’s annual *Tax Roll Production, Submission, and Evaluation Standards* when made available.

3.6 Aerial Photography/Orthoimagery. Current aerial photography is an essential element of base map development. It is important to property appraisers in ensuring all property is listed.

Section 195.022, F.S., reads in part: “…Upon request of any property appraiser or, in any event, at least once every 3 years, the department shall prescribe and furnish such aerial photographs and nonproperty ownership maps to the property appraisers as necessary to ensure that all real property within the state is properly listed on the roll. …”

Rule 12D-1.009, F.A.C., reads in part: “(1) Each county property appraiser shall have and maintain the following: (a) Aerial photography suitable for the needs of his office. …”

The aerial photography three-year flight schedule, the Florida County Digital Orthoimagery Program Standards and related documents are located on the department's GIS webpage here:

https://floridarevenue.com/property/Pages/Cofficial_GIS.aspx

3.7 Basic Requirements for Cadastral Maps. Property appraisers are requested to submit parcel-level GIS/Map data to the Department by April 1 each year. The Department communicates the submission requirements in the annual *Tax Roll Production, Submission, and Evaluation Standards* document, which includes a section on GIS/Map data. Criteria for the evaluation of GIS/Map data and guidance for property appraisers and their staff in developing accurate and complete GIS/Map data files are provided in the annual *Assessment Roll Edit Guide for Parcel-Level GIS Information*. Both documents can be found here:

https://floridarevenue.com/property/Pages/Cofficial_CompleteSubRollEval.aspx