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*Bureau of Land Management
HQ-350 Cadastral Survey*

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Table of Contents

Contents	Page
INTRODUCTION	1-1
1.1 PURPOSE.....	1-1
1.2 OBJECTIVE.....	1-1
1.3 AUTHORITY.....	1-1
1.4 RESPONSIBILITY.....	1-2
1.5 REFERENCES.....	1-3
1.6 POLICY.....	1-4
1.7 DATASET DESCRIPTIONS	1-4
GLOSSARY OF TERMS AND LIST OF ACRONYMS	1-5

z**INTRODUCTION****1.1 PURPOSE**

This Manual Section (MS-9690) describes and provides information and guidance on the Public Land Survey System Dataset (PLSSDS) and Surface Management Agency (SMA) Dataset procedures, management, and standards.

1.2 OBJECTIVE

To ensure compliance with the Office of Management and Budget (OMB), Federal Geographic Data Committee (FGDC), Department of the Interior (DOI), and Bureau of Land Management (BLM) directions to improve the accuracy and currency of the PLSSDS and SMA Datasets.

Provide interpretation and direction for the annual transfer of the Authoritative PLSSDSs to the National Archives and Records Administration (NARA).

1.3 AUTHORITIES

- A. The Geospatial Data Act of 2018: Act of October 5, 2018, P.L. 115-254, 132 Stat. 3414, 43 U.S.C. §§ 2801-2811
- B. Cadastre of Federal real Property, 43 U.S.C. § 776
- C. OMB Circular A-16, as amended
- D. OMB Circular A-119, as amended
- E. OMB Circular A-130, as amended
- F. DRS/GRS/BLM Combined Records Schedules, Schedule 30 - Land and Mineral Electronic Record Systems, Item 8, GCDB/PLSSDS
- G. Manual of Surveying Instructions (2009)
- H. Manual MS-1203, Delegation of Authority, Release 1-1817
- I. Manual MS-9600, Cadastral Survey Program Manual, Release 9-368
- J. Handbook H-1203-1, Delegation of Authority Handbook, Release 1-1818
- K. Handbook 1270-4: Records Disposition, Release 1-1787
- L. Handbook H-9600-1, Cadastral Survey Handbook, Release 9-404
- M. Handbook 1283-2: Data Administration and Management, Release 1-1762

- N. Handbook for Standardized PLSS CadNSDI Dataset (PLSS CadNSDI) Users Reference Materials, October 2015 (reviewed October 2016), Federal Geographic Data Committee (FGDC), Cadastral Subcommittee publication
- O. Handbook for Authority and Authoritative Sources: Clarification of Terms and Concepts for Cadastral Data, Version 1.1, August 2008, Federal Geographic Data Committee, a Federal Geographic Data Committee, Cadastral Subcommittee publication.

1.4 RESPONSIBILITY

A. The Director The Secretary of the Interior has delegated to the Director the responsibility for cadastral surveying and Federal land ownership status records and is responsible for the overall cadastral surveying support needed to fulfill the BLM's resource management duties. This responsibility is exercised by the BLM Headquarters Chief Cadastral Surveyor, Division of Lands, Realty, and Cadastral Survey.

OMB Circular A-16 provides direction for federal agencies that produce, maintain, or use spatial data either directly or indirectly in the fulfillment of their mission. The circular establishes a coordinated approach to develop electronically the National Spatial Data Infrastructure (NSDI) and establishes the Federal Geographic Data Committee (FGDC). The BLM is identified in OMB Circular A-16, Appendix E as the lead agency for Cadastral data, Federal Land Ownership Status data, and Public Land Conveyance (patent) Records data within the NSDI. Management of this responsibility within the BLM is delegated to the BLM Headquarters Chief Cadastral Surveyor.

B. The Assistant Director Minerals, Realty and Resource Protection is responsible for BLM budget direction, and leadership for the cadastral surveying support necessary for the BLM's programs, and for the PLSSDS and Federal Land Ownership Status data.

C. BLM Headquarters Chief Cadastral Surveyor is responsible for:

1. Interpreting the Manual of Surveying Instructions.
2. Developing goals, policy, program guidance, technical procedures and accountability for the establishment and maintenance of the PLSSDS in support of the BLM's Land Information System.
3. Ensuring coordination of all Geographic Coordinate data with other Federal and independent agencies and with State, local and tribal governments.
4. Providing policy for the maintenance of official cadastral survey records to ensure statutory compliance, pertinence, and public accessibility.
5. Ensuring that objectives, policies, programs, and technical guidance for cadastral survey, PLSSDS, and geodesy are properly identified and coordinating with other agencies and Bureau activities to meet these objectives.

D. State Directors exercise management authority delegated by the Director and are responsible for the oversight of Lands and Realty programs within their area of jurisdiction. The level of technical review is dependent on staffing and delegation of authority. The State Director or their delegated representative also ensures that all

Federal Land Ownership Status records, prepared by technical staff of the Bureau or by other agencies or contractors comply with minimum standards and receive appropriate technical review and are kept up to date. In addition, the State Director or their delegated representative will ensure that all Lands and Realty actions receive technical approval before final processing. Finally, the State Director provides program development, technical management assistance, and support to District and Field Offices as required for operation of land information systems.

State Directors are responsible for providing the cadastral services needed for the State's programs, involving Cadastral Surveys for the BLM.

E. State Office Chief Cadastral Surveyor is responsible for providing cadastral services in their area of geographic jurisdiction and has the responsibility for:

1. Developing, directing, and coordinating the statewide cadastral surveying, mineral surveys, and PLSSDS program, with advice from local Interagency Cadastral Coordination Council.
2. Providing leadership, guidance, and support to the State/Field Offices in using cadastral services.
3. Assisting State/Field Offices when requested.
4. Supervising and managing the State PLSSDS data collection efforts, implementing data and data collection standards, and providing input into the budget process.
5. Approving and accepting the PLSSDS of the lands within the jurisdiction of the office.
6. Directing the administrative procedures pertaining to the distribution of the Official Authoritative PLSSDS in a consistent and timely publication.
7. Overseeing the procedures pertaining to administration and handling of the Official Authoritative PLSSDS. This role includes the review of data that is collected and provided to the BLM from sources such as the United States Forest Service, United States Geological Survey, States, counties, tribes, Alaska Native regional corporations, Alaska Native village corporations, and contractors, and the determination of whether this data will be included for distribution (Reference OMB Circular A-16 and the Geospatial Data Act of 2018).

F. District Managers, Field Managers, Lands and Realty, and Geographic Information System (GIS) programs in state, district, and field offices as authorized by the regulations and under the direction of State Directors, ensure that all Federal Land Ownership Status data, and Public Land Conveyance (patent) Records prepared by technical staff of the Bureau or by other agencies or contractors comply with minimum standards and receive appropriate technical review and are kept up to date.

1.5 REFERENCES

- A. The Geospatial Data Act of 2018: Act of October 5, 2018, P.L. 115-254, 132 Stat. 3414, 43U.S.C.§§2801-2811
- B. OMB Circular A-16, as amended
- C. Manual MS-9600, Release 9-368

1.6 POLICY

Revised OMB Circular A-16, updated March 24, 2017, requires all Federal agencies that produce, maintain, or use geospatial data to develop the NSDI using a coordinated approach. The Geospatial Data Act of 2018 (GDA) mandates that agencies make their Federal geospatial data available through dependable online services. GDA also established reporting and oversight requirements.¹

As mandated by the GDA and explained by OMB Circular A-16, the Federal Government leads the coordination and strategic direction of the NSDI and provides an underpinning Federal portfolio of authoritative geospatial data. The NSDI assures spatial data from multiple sources are readily available and easily usable.

The FGDC established along with the NSDI as the interagency coordination body for NSDI-related activities. The BLM is identified in OMB Circular A-16, Appendix E as the lead agency for the Cadastral data, Federal Land Ownership Status data, and Public Land Conveyance (patent) Records data within the NSDI. Management of this responsibility within the BLM is delegated to the BLM State Office Chief Cadastral Surveyor.

The Cadastral Publication Data Standard (CadNSDI) is the cadastral component of the NSDI. The publication guidance was developed through the FGDC to provide a common format, structure, and content for cadastral information. The cadastral publication data has two primary components, which are land parcel data, and cadastral reference data. Publication data is a subset of the more complete production data and is formatted to meet the national standard so data can be integrated across jurisdictional boundaries and presented nationally in a consistent and standard form.

BLM's responsibility includes the management and stewardship of two National Geospatial Data Assets (NGDA) datasets, which are the PLSSDS and the SMA Dataset.

1.7 DATASET DESCRIPTIONS

PLSSDS: The PLSSDS is the GIS representation of the Public Land Survey System (PLSS) information including both rectangular and non-rectangular surveys. It forms the geographic basis of land tenure for the public domain and Federal interest lands in the United States. The primary source of the data is cadastral survey records housed by the BLM and supplemented with local records and geographic control from other Federal agencies as well as States, counties, tribes, Alaska Native regional corporations, and Alaska Native village corporations. To manage BLM administered land, minerals, and other natural resources effectively, it is essential that the PLSSDS, and related boundary survey data be kept up to date and accurate and meet national data standards.

SMA: The SMA depicts the surface estate of Federal lands of the United States and classifies this land by its active Federal SMA. The purpose of this dataset is to fulfill the public and Government's need to know which agency is managing which portions of the surface estate of Federal land.

¹ To the extent practicable, and in compliance with applicable data, access, protection, security, privacy, sensitivity, and other data and information protection and management policies.

GLOSSARY OF TERMS AND LIST OF ACRONYMS**A**

Accuracy	<p>Accuracy to reality: A quality dimension measuring the degree to which a data value (or set of data values) correctly represents the attributes of the real-world object or event.</p> <p>Accuracy to the surrogate source: A measure of the degree to which data agree with an original, acknowledged authoritative source of data about a real-world object or event, such as a form, document, or unaltered electronic data received from outside the organization.</p>
American National Standards Institute: (ANSI)	(ANSI) A volunteer organization composed of over 1,300 members (including companies that specialize in information technology) that coordinates the development of U.S. voluntary national standards in both the private and public sectors for the computer industry. It is the U.S. member body of the International Organization for Standardization.
Authoritative Data	Officially recognized data that can be certified and is provided by an authoritative source.
Authoritative Data Source	An information technology (IT) term used by system designers to identify a system process that assures the veracity of data sources. These IT processes should be followed by all geospatial data providers. The data may be original, or it may come from one or more external sources, all of which are validated for quality and accuracy.
Authoritative Source	An entity that is authorized by law to develop or manage data for a specific business purpose. The data this entity creates is authoritative data.
Authority	In the context of public agencies, it is the legal responsibility provided by a legislative body to conduct business for the public good.

B

BLM	Bureau of Land Management
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C

Certified Data	Data that has been reviewed and approved by the Dataset manager/data steward as having acceptable quality and can be published.
Completeness	<p>A quality dimension measuring the degree to which the required data are known.</p> <p>(1) <i>Fact</i> completeness is a measure of data definition quality expressed as a percentage of the attributes of an entity type that must be known to ensure that they are defined in the model and implemented in a database. For example, “80 percent of the attributes required to be known about customers have fields in a database to store the attribute values.”</p> <p>(2) <i>Value</i> completeness is the first measure of data content quality expressed</p>

	<p>as a percentage of the required columns or fields of a table or file that actually have values in them. For example, “95 percent of the columns for the customer’s table have a value in them.” Value completeness is also referred to as <i>Coverage</i>.</p> <p>(3) <i>Occurrence</i> completeness is the second measure of the data content quality expressed as a percentage of the rows or records of a table or file that should be present in them. For example, “95 percent of the households which DOI needs to know about have a record (row) in the household table.”</p>
Consistency	A data quality dimension is expressed as the degree to which a set of data is equivalent in redundant or distributed databases.
Corporate Data	Data used by or for the BLM, which is considered the property of the BLM. Also refers to data that is used statewide or at least by more than one office.
Currency	A quality dimension measuring the degree to which the timing of equivalence of data is stored in redundant or distributed database files. The measure data currency may describe the minimum, maximum, and average data float time from when data are available in one data source and when they become available in another data source; or it may consist of the relative percent of data from a data source that is propagated to the target within a specified time frame.

D

Data	Things known or assumed to represent facts, ideas, or values that may be processed to produce information.
Database	A defined, automated, shared, and centrally managed collection of data. A database is a collection of interrelated data stored in a structured manner.
Dataset	A group of data elements in a table, flat file, or a relational database used for statistics, set theory.
Data Administration	The high-level function within the BLM that is for planning, coordinating, and managing BLM’s corporate data resources to meet existing and future data and information needs.
Data Integrity	The security of information; protection of the information from unauthorized access or revision, to ensure that the data are not compromised through corruption or falsification.
Data Management (DM)	The process and procedures are required for all data BLM collects or acquires.
Data Standard	The rules by which data are described and recorded.
Data Steward	The data steward manages the facts or information of some aspects of the BLM to ensure that information can be used to draw conclusions or make decisions. Data Stewards at the Headquarters, National Operations Center (NOC), State, District, and Field Offices are experts in a business subject area.

E

Easement	An easement is a right to cross or use someone else's land for a specified purpose. The Federal government acquires easements from landowners for a variety of reasons. An easement may be administrative, where only employees or Federal contractors can use the access to complete government work such as fire management, restoration, or installing a pipeline or water trough; or public, where access is provided to everyone, usually for the passage of people or vehicles. In rare circumstances, easements may include the right to park, camp, or conduct other recreational activities on non-Federal land. Easements over non-Federal land are not included in SMA. Non-Federal easements over Federal land are not included in SMA.
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F

Federal Geographic Data Committee (FGDC)	An interagency group that promotes and coordinates the production, use, and publication of geospatial data.
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G

Geodatabase	A database that is designed to store, query, and manipulate geographic information and spatial data.
Geographic Information System (GIS)	GIS allows someone to visualize, question, analyze, interpret, and understand data to reveal relationships, patterns, and trends.
Geospatial	Data that represents a place on the earth, in one or more dimensions.
Geospatial Data	Data of, relating to, involving, location, or place. Often used in the context of GIS and map products.

M

Mineral & Land Records System (MLRS)	MLRS is a customer-centric, geospatially enabled land information system that employs nationally standardized business processes, ensuring the quality and accuracy of land and mineral records and data while securely delivering land records information to relevant BLM staff, customers, and the public.
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N

NOC	The BLM's National Operations Center in Denver, Colorado, provides operational and technical program support to BLM employees and collaborators--our stakeholders. The Center's more than 500 employees and 100 contractors contribute to the overall BLM mission by supporting human resources, information technology, geospatial services, finance, and acquisition.
NSDI	National Spatial Data Infrastructure: The technology, policies, standards, human resources, and related activities necessary to acquire, process,

	distribute, use, maintain, and preserve spatial data (e.g., information and process discovery, publishing data, publishing symbol libraries, query filtering, data fusing, Earth imaging, photogrammetry, location processing, and spatial analysis).
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P

Public Land Survey System (PLSS)	The United States Public Land Survey System (PLSS) is the method of subdividing and describing land. The Rectangular Survey System is a component of the PLSS.
Public Land Survey System Dataset (PLSSDS)	The PLSSDS sometimes called the PLSS CadNSDI, is the GIS representation of the Public Land Survey System (PLSS) information including both rectangular and non-rectangular surveys that are the core or essential elements of cadastral information that provide the framework for building and using cadastral (land records) information nationwide. It forms the geographic basis of land tenure for the public domain and Federal interest lands in the United States. The primary source of the data is cadastral survey records housed by the BLM and supplemented with local records and geographic control from states, counties, tribes, Alaska Native Corporations, Villages, and other Federal agencies. To effectively manage the BLM-administered land, mineral, and other natural resources, it is essential the PLSSDS, and related boundary survey data be kept up to date, accurate, and meet national data standards.

Q

Quality assurance (QA)	Quality Assurance a broad process that involves all stages of a product's development, including production, testing, packaging, and delivery. QA focuses on implementing standards and ensuring that a product meets contractual and other performance expectations.
Quality Control (QC)	Quality Control is the process of controlling the usage of data with known quality measurements for an application or a process. The process is usually done after a data quality assurance process.

S

Spatial Data	Information that identifies the geographic location and characteristics of natural or constructed features and boundaries on the Earth. This information may be derived from remote sensing, mapping, charting, surveying technologies, GPS, or statistical data, among other sources.
Standard	An accepted measure of comparison for quantitative or qualitative value. An object that under specified conditions defines, represents, or records the magnitude of a unit. Commonly used and accepted as an authority.
Surface Management Agency – (SMA)	The SMA depicts surface estate Federal land for the United States and classifies this land by its active Federal surface managing agency.

T

Timeliness	A quality dimension measuring the degree to which data are available when information consumers or processes require them.
Trusted Source and Trusted Data	A service provider or agency that publishes data from a number of authoritative sources. These publications are often compilations and subsets of data from more than one authoritative source. It is “trusted” because there is an “official process” for compiling the data from authoritative sources and the limitations, currency, and attributes are known and documented.