

PLSS CadNSDI Change Management Process
January 2014
Version 4
Stu Kirkpatrick and Nancy von Meyer

This document provides guidance on the policies and procedures for managing change and updates to Public Land Survey System Cadastral National Spatial Data Infrastructure (PLSS CadNSDI) data sets. For clarification the CadNSDI national standard includes definitions, suggested domains, and formats for PLSS cadastral reference, non-PLSS cadastral reference, and parcel data sets. This document pertains the PLSS content and is termed the PLSS CadNSDI.

PLSS CadNSDI, Survey and Control Data

The PLSS CadNSDI, built through the integration of CadSSDI (state spatial data infrastructure) data sets, is a GIS representation of the best-estimated positions of components of the PLSS. The position of points or lines in CadSSDI may be based on coordinates provided by data contributors, including private, state, local, and federal contributors and may be linked to auxiliary survey control databases containing monument information. The Publication PLSS CadNSDI does not carry those associations.

The PLSS CadNSDI is *not* tax parcel data, administrative boundary data, or other polygonal or line data tied to the rights and interests on the land as that information is provided in separate features. It is *not* all of the available control, monumentation, history, and evidence for PLSS corners and features. However, it is recognized that land surveyors and parcel mappers often need a more robust history and resume for individual corners in the PLSS. This added information often provides monument recovery information, monumentation history, corner accessory information, and more detailed coordinate observation information perhaps relating to GPS observation details or time of occupancy.

The control and survey data related to a PLSS corner must be relatable to the PLSS Corner record in the PLSS CadNSDI data set. This means tracking an identifier to relate more detailed records to the PLSS CadNSDI data set. In addition to providing the attributes for the PLSS CadNSDI features, Survey and Control databases would likely include the following.

- Pictures and sketches of the corner, accessories and surrounding environment,
- Monument markings,
- Coordinate observation and adjustment details,
- References to survey networks used for establishing coordinate values
- Recovery and observation person and dates
- Notes on monumentation evidence
- Notes on disposition of monuments

- Notes on disposition of coordinate observations

The Survey and Control database(s) may also include boundary observations (bearings, azimuths, distances) between corners.

It is also very common for Survey and Control databases to have multiple records of a single PLSS Corner. This arises from monumentation over time, multiple monuments being placed to represent the same corner, and multiple coordinate values for any corner location. To adequately evaluate and use the survey and control data there must be much more information than is carried forward into the PLSS CadNSDI data set.

Another characteristic of the PLSS CadNSDI data set is that it represents the best available or best-estimated positions for PLSS positions. The intent is to fulfill the requirements of the NSDI by reducing duplication of effort by integrating and compiling the best-known data set. This should eliminate the need for multiple or redundant data for the same features in the same area. The FGDC Cadastral Subcommittee has termed this process a compilation of the authoritative data, meaning that the best available information should be that compiled from those sources that are closest to and responsible for the PLSS features.

There are several related documents that provide background on the standard and format, roles, and responsibilities associated with PLSS CadNSDI data sets. These can be found in the PLSS Work Group section of the FGDC Cadastral Subcommittee outreach web site at <http://www.nationalcad.org>. The FGDC Cadastral Subcommittee manages changes to the PLSS CadNSDI standard and its supporting standard the Cadastral Data Content Standard. The change management described in this document refers to changes in the data content of a standardized data set.

General Concepts

A *version* is a specific form or variation of something. For the standardized PLSS CadNSDI, the version is the definition of the format and structure of the standardized data set. The current version of the PLSS CadNSDI is Version 2. This version was finalized in October 2012 and there are no plans to revise or change this version.

A *revision* is to alter something already published in order to make corrections, improve, or update. For the PLSS CadNSDI the revision is defined when the entire data set is reprocessed to update coding, improve the definition of features, or update data content. In the earlier revisions of the PLSS CadNSDI data sets as the domains of values, processing rules for the PLSS Special Surveys, and coding rules in source data were developed, there were several revisions to statewide data sets. For example many states had revisions 1.1 and 1.2. It is not expected the Version 2 data sets will have these same revisions and instead will have vintage changes to the data content based on updated surveys and updated content from contributors.

The *vintage* is the date that something is produced. In the PLSS CadNSDI the vintage of individual features is described by attribution in the feature class Metadata at a

Glance called revised date. *A change in the vintage does NOT change the file name, or the version, or the revision.* The vintage date will not be stored as part of the CadNSDI file name, but will be found in the metadata and the MetadataGlance feature class.

The change management described in this document refers to the changes in the data content or vintage of the data set. These may be called revisions or updates or versions in the dialect of the GIS community. For the PLSS CadNSDI data sets the intents are as follows.

- The standard and format are stable at Version 2 for the immediate and known future.
- The name of published data sets should not change with updates to content as mapped REST Services and other on demand services are more stable and repeatable if the underlying called data set name remains the same.
- There should be less need to reprocess and update an entire state data set as the methods and techniques for updating portions of the data while maintaining the integrity of the overall data set and a record of currency (update date) are implemented.

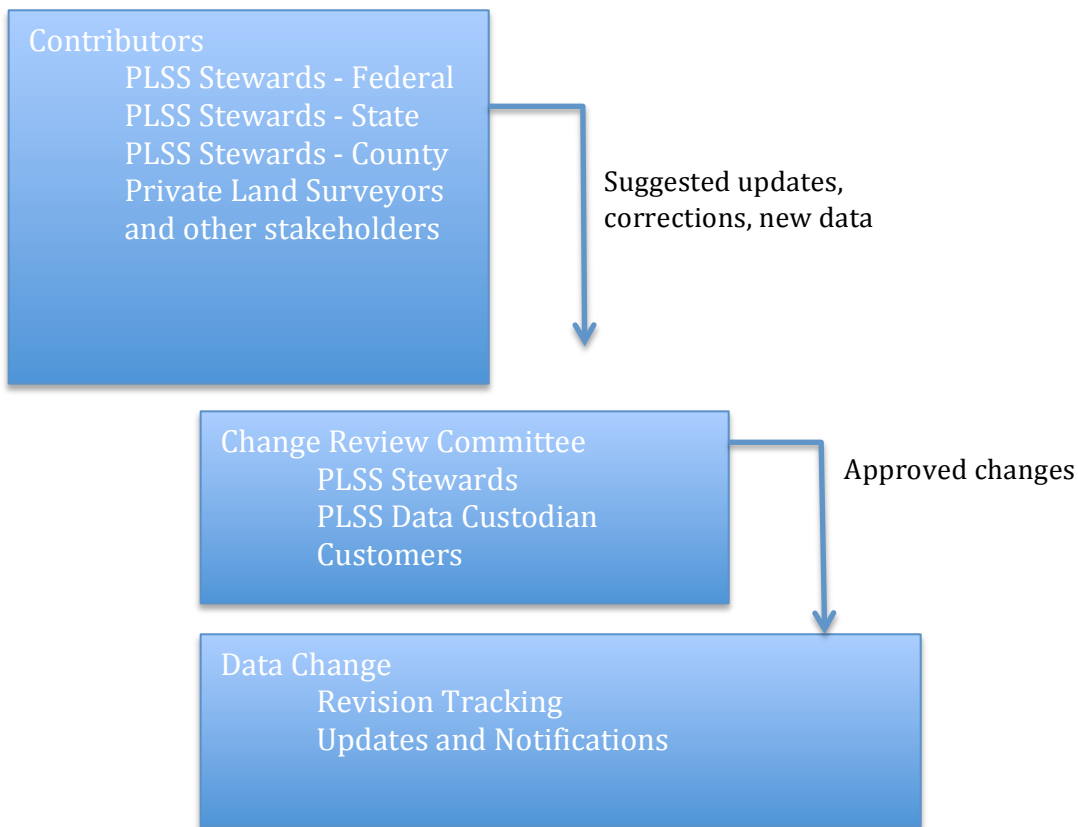
Change Management Process

This document provides guidance on how the coordination and regular updates can be managed.

In software development, a Change Control Board (CCB) or Software Change Control Board (SCCB) is a committee that makes decisions regarding whether or not proposed changes to a software project should be implemented. A change control board is constituted of project stakeholders or their representatives. The authority of the change control board may vary from project to project, but decisions reached by the change control board are often accepted as final and binding.

For data management, or in this case PLSS CadNSDI Data Custodianship, a similar approach to a software change control board is utilized.

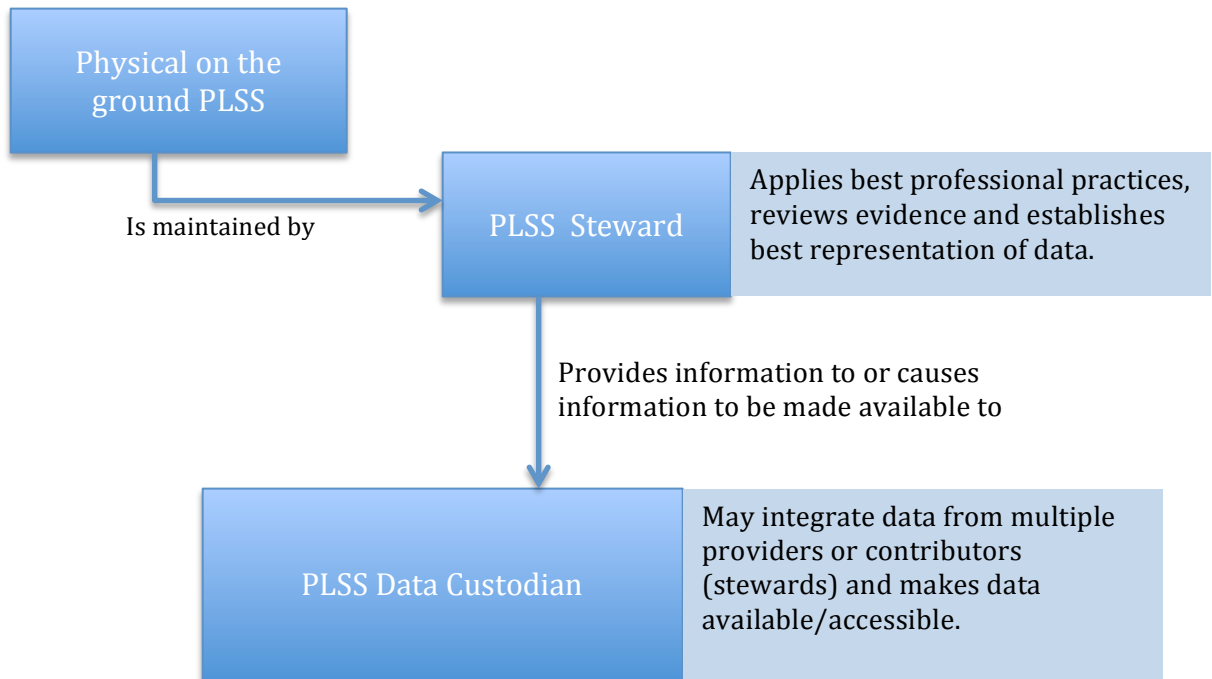
The relationships among stewards, data custodians, and users or customers for the PLSS are as shown below. Contributors can come from a variety of sources, but as described above for any given area there should be an identifiable authority or responsible steward that can resolve on the ground discrepancies and determine a best estimated value for the position of the PLSS components.



Roles

The terms, roles, and responsibilities described in this document are intended to convey and describe the focused conditions and solutions for cadastral data. At the same time it is recognized that the GIS and IT communities have developed a jargon that uses many of these same terms and maybe not exactly in the same context as this paper. There is no need to dissect the commonly used GIS and IT terms, but it is important to note the specific use of the terms in this document are intended to acknowledge the land surveying and property implications that attach to the cadastral data sets.

As with the terms version, revision, and vintage, it recognized that GIS community practices have used terms like data steward, data custodian, contributor, publisher, and producer almost interchangeably. The use of the definitions here is not to confound the terminology issue but to clarify the intended roles of the many possible participants in a fully engaged PLSS CadNSDI data set.



PLSS Steward - These are the authoritative maintainers of PLSS positions and records related to PLSS monuments. On Federally managed lands the BLM is the acknowledged overall PLSS steward, with other land management agencies assuming PLSS stewardship for the BLM on lands they manage. For example the Forest Service may be a PLSS steward on forest service lands. On privately owned lands, the state or county, or more often private surveyors are often the PLSS stewards for the Public Land Survey System. This is very different than in the east or colonial states where there is not an over arching framework that is sustained by a government authority.

One of the roles of the PLSS Steward community is to collect and preserve the survey and control information necessary for the data steward communities to evaluate all of the information about a corner in order to provide the PLSS CadNSDI with best representation of a corner.

The PLSS Stewards are data contributors, stakeholders, authoritative data providers, data creators, or generators. They create, observe, re-establish, or collect the data content for the PLSS CadNSDI. As described in related documents, notably by the FGDC Cadastral Subcommittee, the term authoritative data or authoritative data sources has been used to emphasize the need for an acknowledged best source for the representations in the PLSS CadNSDI. Historically, various GIS representations of the PLSS failed to recognize the nuances and structure of the PLSS, such as ignoring the presence of government lots and tracts. For this document it is sufficient to recognize that the PLSS Stewards must have full

knowledge of the PLSS components, the survey and the legal manifestation of these components.

The PLSS Stewards will

- Be knowledgeable about the PLSS components,
- Work with adjacent stewards to provide consistent and edge matched boundaries, and
- Provide the best available representation of the PLSS to PLSS Data Custodians

PLSS Data Custodian - These are the publishers of the PLSS data. The PLSS data Custodians are also data integrators that combine data from many contributors into a single standardized accessible data set. For the PLSS CadNSDI the Data Custodians must also be vested in assuring that a consistent and current data set is developed and provided to data customers. They must have knowledge of how customers use the data so it can be made accessible in useable forms and formats and they must also be knowledgeable in the nuances of the data set so they can address the first tier set of questions related to data set usability and fitness for use. In many cases the state ,may serve as a data aggregator and publishers, assembling the best available information from local data sources and other contributors. This role could be termed a data custodian, a data aggregator, data integrator, or data publisher. The custodial role is to maintain seamless edge matched, both internally and at the state boundaries, data sets that are standardized, publicly available. Where practical the custodian should link PLSS positions back to the source information provided by PLSS steward.

The PLSS Data Custodian will:

- Maintain and enhance the skill sets required to provide accountable PLSS custodianship
- integrate the best available coordinate information for the PLSS features,
- Provide updates on a regular basis,
- Coordinate with data producers (PLSS Stewards) within their stewardship boundaries, and
- Coordinate with adjoining data stewards on the definition and update of shared boundaries.