

Guidance for FGDC Data Standards
Publication Data Compliance
February 2005

The Bureau of Land Management (BLM) Cadastral Survey program has been assigned the lead responsibility for facilitating the cadastral component of the National Spatial Data Infrastructure (NSDI) (OMB Circular A-16). The NSDI includes the level of cadastral data that is needed to support activities across government and private industry and reduce or eliminate redundant data collection across organizations. The FGDC Subcommittee for Cadastral Data articulated the characteristics of the Cadastral NSDI at the October 2003 meeting in Portland Oregon. These characteristics are:

Data Publication

- Freely available

Data Standardization

- Reflects the Cadastral Core Data Standard
- Provides linkages to additional source information
- Can be integrated across jurisdictional boundaries

Data Documentation

- Metadata documentation is current

Data Integrity (quality and currency)

- Maintained and kept current by the data steward (at least annually)
- Data is as complete and accurate as the data steward can provide
- Relationships follow appropriate authoritative and trusted source roles.

Data Publication

This is the process of making data available for use in business processes and for decision making. There are several levels of publication that are recognized by the Subcommittee. Because the goal of the Subcommittee is to encourage state coordinated data publishing the levels of stewardship are focused on state level activities. The roles or compliance of the individual county or other parcel producing organizations are described in the characteristics of the levels of stewardship.

Parcel Data

The Cadastral Core Data Standard identifies an essential minimum data content that needs to be shared and standardized across organizations. In concert with data standards compliance, the projects will also be required to honor any and all proprietary data to protect the privacy of individuals and honor the sovereignty of Tribal Nations.

Parcel data are the points or polygons that represent the surface landowner. Typically this data set is the real estate tax parcel data maintained by local

governments but may also include state owned lands such as state parcels or state building sites, federally managed lands, Tribal lands or other public or real estate tax exempt lands.

Table 1
Levels of State Stewardship for Parcel Data

Level	Inventory/Distribution/Access/Standardization
Level 1 - Inventory	<p>Data inventory complete, county contacts established and the state has begun implementing its strategy to create a sustainable parcel stewardship program.</p> <ul style="list-style-type: none"> • Counties have identified contacts for the parcel data. • State is maintaining county data and contact inventory. • State has an identified Cadastral Contact or Coordinator. • Cadastral business plan has begun or may already be in place.
Level 2 - Data Library	<p>The State assembles parcel data from producers in a central location or to a central contact at the state on a yearly basis. The data is assembled and stored on a county-by-county basis</p> <ul style="list-style-type: none"> • Individual county files are stand alone. • Attribute content is as provided by the counties or data producers. • Attribute content may be less than the complete core data set. • Data are available upon request from the state contact. • Data may or may not be provided through a web site or ftp site. • Individual county information is in separate files and/or separate media.
Level 3 - Data Library with Standardized Attributes	<p>The State assembles parcel data from producers in a central location or to a central contact at the state on a yearly basis. Attributes related to the parcel data are standardized. The attribute standardization may be done at the state or at the producer level.</p> <ul style="list-style-type: none"> • Individual county files are stand alone. • Attributes have standard field names and field types. • Attribute content may be less than the complete core data set. • Data are available upon request from the state contact. • Data may or may not be provided through a web site or ftp site • Individual county information is in separate files and/or separate media
Level 4 - Web Delivery of Data Library	<p>The State assembles parcel data from producers in a central location or to a central contact at the state on a yearly basis. Attributes related to the parcel data are standardized. The attribute standardization may be done at the state or at the producer level. Access to the data is not dependent on contacting a person or office but can be reached through FTP or web site access. The access may be login and does not have to be publicly available.</p> <ul style="list-style-type: none"> • Individual county files are stand alone. • Attributes have standard field names and field types. • Attribute content may be less than the complete core data set. • Data are available through a web portal or FTP for download (may

	require login or may be freely available).
Level 5 – Web Delivery of Data Library with Complete Core Data	<p>The State assembles a complete set of core data from parcel producers with standardized attributes that are connected to the geometry. The attribute standardization may be done at the state or at the producer level.</p> <ul style="list-style-type: none"> • Individual county files are stand alone. • Attributes have standard field names and field types. • Attribute content is the complete core data set for emergency response. • Data are available through a web portal or FTP for download (may require login or may be freely available).
Level 6 - Seamless Statewide Data	<p>The State assembles a complete set of core data from parcel producers with standardized attributes and connected to geometry. The attribute standardization may be done at the state or at the producer level. The geometry is continuous and seamless across the state.</p> <ul style="list-style-type: none"> • Geometry is seamless and continuous across the state. • Publicly managed lands (federal, state and locally owned lands) may exist as gaps in the coverage or in the attributes • Attributes have standard field names and field types. • Attribute content is the complete core data set. • Data are available through a web portal or FTP for download (may require login or may be freely available).
Level 7 - Seamless Statewide Data with State and Federal Lands	<p>The State assembles a complete set of core data from all parcel producers in the state, including federal agencies and state lands parcel producers, with standardized attributes and connected to geometry. The attribute standardization may be done at the state or at the producer level. The geometry is continuous and seamless across the state.</p> <ul style="list-style-type: none"> • Geometry is seamless and continuous across the state. • Attributes have standard field names and field types. • Attribute content is the complete core data set. • Data are available through a web portal or FTP for download (may require login or may be freely available).

Attribute standardization means that the attributes from the various data producers have been processed or converted to a single common state attribute standard including standardizing the attribute name, field length and type. In some states the parcel producers may already be collecting and publishing their information in a standard format and no further processing is required. The Subcommittee has guidelines for these standards if the state does not have an existing standard. Standardization includes parcel numbers from individual counties or producers that are processed to be unique for the state.

Seamless Parcel Data means that individual counties have been combined into a single file rather than files separated into individual counties. Differences in geometry at county or other data producer boundaries are resolved sufficiently to support business needs.

Complete Core Attribute Data means the emergency recovery and emergency mitigation attributes in Table 1. Based on reviews of many nationally occurring business processes these attributes serve a large number of business needs and will advance the Cadastral NSDI use and applicability. Additional attributes such as zoning and subsurface owners increases the number of applications that the data can be used for but may reduce the number of participants in a state program.

Table 2
Summary of the levels and the functionality in each level
The check mark indicates what is available at each level of stewardship

	Level						
	1	2	3	4	5	6	7
Data Content							
Data provided to a central location.		✓	✓	✓	✓	✓	✓
Data is updated annually.		✓	✓	✓	✓	✓	✓
Metadata included for data sets		✓	✓	✓	✓	✓	✓
Attribute content has standardized field names and field types.			✓	✓	✓	✓	✓
Attribute content may be less than the complete core data set.		✓	✓	✓			
Attribute content includes the complete core data set.					✓	✓	✓
Individual producer data is combined into a seamless coverage						✓	✓
Data for publicly managed lands from the public land steward is included in the seamless coverage							✓
Inventory and Data Access							
State Maintaining County Data Status and Contact Inventory.	✓	✓	✓	✓	✓	✓	✓
Data is available upon request from the state contact.		✓	✓				
Data is available through a web portal or FTP for download (may require login or may be freely available).			✓	✓	✓	✓	✓

Cadastral Reference Data (PLSS and other Reference Information)

The Subcommittee recognizes that Cadastral Framework information, such as the Public Land Survey System, points of common control such as geodetic points or section corners and other boundaries such as municipal and subdivision boundaries are an important part of building an integrated and maintainable parcel data set. Providing a trusted source for Cadastral Reference information is important for defining administrative boundaries and many other themes.

Data Standardization (Content and Positional)

Content - The level of content standardization should conform, at a minimum, to the FGDC “Core Data Standard” which is a subset of the Cadastral Data Content Standard (see Website for this publication www.nationalcad.org). Beyond the Core Data Standard the Cadastral Data Content Standard provides definitions and relationships for boundary, corner and transaction information.

Positional - In addition, to data content standards, steps must be taken to standardize on the positions of boundaries and corners. Compliance with the agreed upon positions will allow data from multiple sources to be “merged on demand” independent of administrative or jurisdictional boundaries. Efforts should be taken to collaborate and reach mutual agreement on geographical positions among all affected parties. It is understood, however, that this may not always be possible without a field survey. In these instances, conflicts should be highlighted in the data to make users aware of the issue prior to publication and subsequent use. If a data steward has been identified for a particular corner or boundary, positional updates need to be posted to the steward to assure that all systems that rely on this information will benefit from improved positional information. The FGDC Subcommittee for Cadastral Data is developing data steward guidelines that will be posted to the web site.

Data Documentation

Data characteristics such as accuracy and vintage shall be documented in accordance with the minimum FGDC Spatial Meta Data Standards. One of the advantages of adopting the data standards is that documentation related to data elements is provided by the standard. Examples of the other metadata that is included in the metadata standards are found at <http://www.fgdc.gov/metadata/constan.html>

Data Integrity

Data integrity describes the currency of the data and the level of maintenance. Data integrity will be retained through the transfer and reformatting of data into

the standards. Data shall not be recollected, recreated or changed unless its quality can be improved and the results reported and agreed upon by the data steward. Data errors or problems will be reported to the data steward for resolution. If there is not a formal data steward arrangement in place, the steward is presumed to be the data provider. Cadastral data should reflect as accurately as possible the position of monumentation on the ground and reflect the content and position of boundaries as documented in legal cadastral survey records.

Data Models

We encourage all production data (operation and maintenance data) to comply with the Cadastral Data Content Standard. The levels of compliance with the cadastral Data Content Standard are described in the standard as well as in the standard educational materials and in supporting compliance checklist documents. The Subcommittee works with commercial software providers to assist in implementing the Content Data Standard. Examples of these implementation models and linkages can be found on the nationalcad (<http://www.nationalcad.org>) web site under the reference documents section.