

*American National Standard
for Information Technology—
Geographic Information Framework –
Data Content Standards
For Cadastral Data: Base*

American National Standard
for Information Technology

Geographic Information Framework
Data Content Standards
For Cadastral Data
(Part XXX)

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Foreword

The primary purpose of the standard is to facilitate the exchange of Cadastral data related within the Geospatial One Stop. This standard also seeks to establish a common baseline for the publication of core cadastral data for public agencies and private enterprises. The Cadastral Data Content Standard, (FGDC Standard 003) provides the content information and provides additional information beyond this minimum core. The Cadastral Data Content Standard seeks to decrease the costs of acquiring and exchanging Cadastral Data for local, tribal, state, and federal users and creators of Cadastral Data. Benefits of adopting the standard also include the long-term improvement of the geospatial Cadastral Data, improved integration of assessment and ownership data, and streamlined maintenance procedures.

This is the third edition of this standard. However, this standard was preceded in development by a number of other standards, including the National Spatial Data Infrastructure (NSDI) Cadastral Data Content Standard (FGDC Standard 003) and the standards for Cadastral Core Data and extensions. The FGDC Cadastral Data Content Standard serves as the starting point for this standard and the other related standards.

This standard has been developed to fulfill one of the objectives of the NSDI, i.e., to create common geospatial data for seven critical data themes. These core themes are considered Framework data, reflecting their critical importance as geographic infrastructure. The Geospatial One Stop initiative is in part an e-government initiative of the federal government designed to expedite development of the seven Framework layers. This standard has been developed in response to the Geospatial One Stop initiative to realize the goals and objectives of the NSDI. Geospatial One Stop is an implementation of the NSDI.

Suggestions for improvements of this standard will be welcome. They should be sent to

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This standard was processed and approved for submittal to ANSI by the Accredited Standards Committee – INCITS/L1. Committee approval of this Standard does not necessarily imply that all committee members voted for its approval.

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**American National Standard for Information Technology
Geographic Information Framework
Data Content Standards
(ANSI X.X.X2003)**

1 Scope of this Standard

This standard defines the components of Cadastral Data for the Geospatial One Stop. The primary purpose of the standard is to facilitate the exchange of cadastral data. It is the intent of the standard to set a common baseline that will facilitate the exchange of the cadastral information by providing a spatial index of the information that is available.

This standard provides the information necessary to identify the existence of parcel level cadastral information and the source of that information. The Geospatial Metadata provided with the information will provide information on the contact, distribution, and access requirements for the data. Additional information on the content of the full parcel or cadastral data sets, accuracy and spatial projection information is also provided with the metadata.

This standard is not intended to support homeland security, citizen query and access, real estate records or other application based information. This is the minimum information necessary to facilitate locating the existence of parcel level information and identifying the source. This data along with the appropriate metadata will provide the information on where to get the information to support applications.

The Cadastral Data Content Standard and its supporting standards such as the Cadastral Core plus assessment and address would be necessary to locate a site address and the value of property. These standards are related to this minimum core Geospatial One Stop standard in that they all evolve from application based views of the Cadastral Data Content Standard. These other standards will be necessary to support applications and business process requirements.

As with any framework theme, cadastral data works in harmony with other data sets. For example to determine whether there is parcel or cadastral information available in a specified city, users will need to navigate to that geography and then verify that the minimum core parcel information and its metadata have been made available for that area.

The standard can be implemented using a variety of software packages and is designed to accommodate data encoded without geometry as well as to support the exchange of data encoded in a variety of geographic information systems. The standard accommodates assets associated with the transportation system that are typically used for navigation, safety, and measurement.

The standard applies to National Spatial Data Infrastructure (NSDI) Framework Cadastral data produced or disseminated by or for the federal government. According to Executive Order 12906, Coordinating Geographic Data Acquisition and Access: the National Spatial Data Infrastructure (Clinton, 1994, Sec. 4., Data Standards Activities), federal agencies collecting or producing geospatial data, either directly or indirectly (e.g., through grants, partnerships, or contracts with other entities), shall ensure, prior to obligating funds for such activities, that data

will be shared in a manner that meets all relevant standards adopted through the Federal Geographic Data Committee (FGDC) process.

1.1 Issues

The following is a brief discussion of issues that are of particular importance to this standard.

The Cadastral Data Standard proposed for the Geospatial One Stop includes an attribute for parcel identifiers called Parcel ID. It also includes an Alternate Parcel ID to support multiple agencies having different Parcel IDs for the same parcel. This issue discusses some of the details and design concerning the Parcel ID attribute. In the course of this discussion, some related topics such as Parcel ID maintenance and linkage to related data sets, are also reviewed.

The Parcel Identifier (Parcel ID) is defined as a label or tag for a parcel that is unique within a jurisdiction. The parcel identifier can be a numeric or alpha-numeric, but it must uniquely identify an ownership parcel, which may include multiple polygons, within a system. The type of parcel that is being identified depends on the system. For example if a county is managing tax parcels, then the parcel identifier uniquely identifies tax parcels. Other types of parcels might be ownership parcels or documented transaction parcels, which are parcels that represent land related transactions, such as Case Actions in the Bureau of Land Management or Tracts in the US Forest Service. In the latter case the parcel identifier points to the documented transaction that created the parcel.

The business process analysis for the Geospatial One Stop Cadastral Data identifies three potential uses for the Parcel ID. These are:

1. **Locating more information about the parcel** – In this use the parcel identifier is a key to finding additional details about the parcel from the source that posted the core data. For example, if a county publishes tax parcels the parcel identifier could provide the linkage to retrieve tax billing or tax assessment information from the County. There has been substantial discussion of how this might occur. As examples the parcel identifier might be a hyperlink to a published database that contained added attribute information, or the parcel number might link to an assessment sketch and digital photo, or the parcel identifier might be supplied to a county official who would then provide that information either free or for a fee. The options can vary greatly, but the concept is that the parcel identifier is maintained by the agency or jurisdiction that is posting the core data and it is unique within the producer's data system. How information is extracted from the producer's system is not discussed in this issue discussion nor is it discussed in Geospatial One Stop. Information about who to contact is the Geospatial Data Content Metadata, examples provided in Annex B and C of this standard.
2. **Linkage for value added information** – For this task the parcel identifier is used in other systems that have information about the parcel that is not maintained by the parcel producer. For example, a mortgage company might use the parcel identifier to link core data and parcel maps to mortgages. The third party, the mortgage company,

keeps the additional information about the mortgage but the core data with its parcel identifier provides a national context for the mortgage information. Another example might be emergency relief payments from the Federal Emergency Management Agency (FEMA) that could be tied to a core data parcel identifier. The relief payment information would be maintained and tracked by FEMA and the parcel identifier would provide a linkage between the payment system and the core data set. The potential for value added information is limitless. The Geospatial One Stop Cadastral Data does not support these applications but it provides the information to facilitate data exchange for locating this type of information

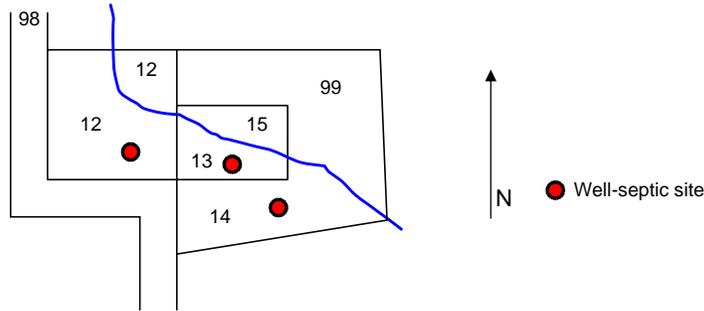
- 3. Provide a geographically significant national identifier** – In this use the parcel identifier is related to a point in or near the parcel and the identifier is geographically significant in that the general location of the parcel can be ascertained from the identifier. In this use the parcel identifier is used as surrogate for the parcel polygon and provides a relatively rapid point mapping system for parcel information. Building a parcel point map and then coloring the points based on whether the parcel has improvements has been suggested by one user as a quick method for analyzing information from multiple counties and the federal agencies in the case of a wild fire. This application is not supported by the Geospatial One Stop Cadastral Data because only the information necessary to facilitate exchange has been included. There are standards for Cadastral Core Plus based on the Cadastral Data Content Standard that would support this application. Other uses for a nationally unique geographically significant parcel identifier include the provision of a universal system for independent relative parcel locations. That is, because points are a simple geometric feature, they could be mapped in almost any software, even a spreadsheet or a hand held device, and could be used for a wide variety of consumer and business applications. In these uses or applications the parcel identifier provides access to core data plus some rudimentary mapping functions.

Because the Core Data for the Geospatial One Stop is to provide parcel level information across multiple jurisdictions, it is reasonable to explore the potential to have a parcel identifier in the core data that meets these needs. The Modeling Advisory Team has taken the approach of a Source System Parcel Identifier with an identification of the Source. Concatenating the Source to the Source Parcel ID would be a unique number. The parcel identifier would provide the index number, or other key value to obtain more information about a parcel in the data producers systems. The parcel identifiers would be defined by the parcel producers and would conform to their existing systems. In some cases parcel producers may need to consider how they provide uniqueness but the premise of this approach is to not disturb current data producer's parcel identification methods. In this case an agency or jurisdiction code could be appended to the parcel identifier to provide uniqueness across the core data sets or the jurisdiction code for the provider could be stored as a separate attribute.

The following sections describe some of the underlying technical and use considerations for the Source System Parcel Identifiers.

In the Source System Parcel Identifiers approach the parcel producers generate and maintain the parcel identifiers. Some of the technical and use considerations are described using typical examples.

Hogan County – Example 1



ParcelID	Owner	Exempt	Site Add	Land Val	Improv Val
12	Mary	N		10,000	75,000
13	Joe	N		12,000	75,000
14	Bob	N		7,000	40,000
15	Ester	N		6,000	0
99	USFS	Y		0	0
98	ROW	Y		0	0

ParcelID	Septic Permit	Building Permit
12	2234	786
13	2235	788
14	2236	789

Hogan County has a parcel map with parcel identifiers that are unique across the county. The county has mapped tax parcels, but has also accounted for all the area in the county. That is, while parcels that are subject to property tax have been the focus of the mapping, tax-exempt lands, such as roads and federal lands, have also been mapped and given a number. In this example, all rights of way have been tagged as Tax Parcel ID 98 and all Federal Lands have been tagged as Tax Parcel ID 99. Other departments in Hogan County also use the Parcel IDs for related information such as septic and building permits. In Hogan County the Parcel ID is added to the septic and building permit applications and provides a way for other departments to determine owner and value information about the parcel where the septic and building permits are located.

In Hogan County Example 1 the Parcel ID for the Geospatial One Stop Core Data would be linked to the Hogan County information through the Hogan County assigned tax number. This information may include the Tax Roll and other related information in the County. The parcel map includes parcel outlines and examples of tables with related data that is tied to Parcel IDs. While none of this related information is provided through the Geospatial One Stop Core Data, within the County providing the core data this additional data may exist.

Note also in Hogan County that the Parcel IDs are unique within the County. In Example 1 the Parcel ID for Bob's land is 14 and PID 14 would not be used for any other parcel in the County so that a unique link to the tax roll and other information can be made from this identifier. Note also in Hogan County all rights of way are tagged as 98 throughout the County and that all federal lands are tagged as 99. This means that PIDs 98 and 99 may apply to multiple polygons but they link to the same record in the tax roll and other systems. Note also that Parcel ID 12 in Example 1 applies to two polygons. This also does not violate the non-repeating rule because again Parcel ID 12 links to the unique tax roll information for that tax parcel. The multiple polygons may not always be contiguous as they are in Example 1, they could also be non-contiguous.

Parcel information changes frequently and is therefore a dynamic set of information. When maintenance is done, parcel information is updated and the tax roll, related information and the parcel outline, as shown on the parcel map, may be changed. Also the update frequency will vary widely across the County. Some jurisdictions may do nightly updates while others may only do weekly, quarterly or even yearly updates.

Parcel changes may be handled in a number of ways. The complete data set for the County may be replaced or only the parcel changes may be updated. If the complete data set is replaced then the current information is always what is available but it may be difficult to detect what has changed. For larger jurisdictions replacing the entire data set may take an inordinate amount of time and may not be feasible. In these cases only the changes may be updated. Again the current information is what will be available but there may be technical issues with posting only changes such as maintaining a continuous and integrated parcel map. An advantage to posting only changes is that it may be possible to link parcel data sets to the GeoCommunicator so that users could subscribe to a notice of change service and be notified of the changed parcel information.

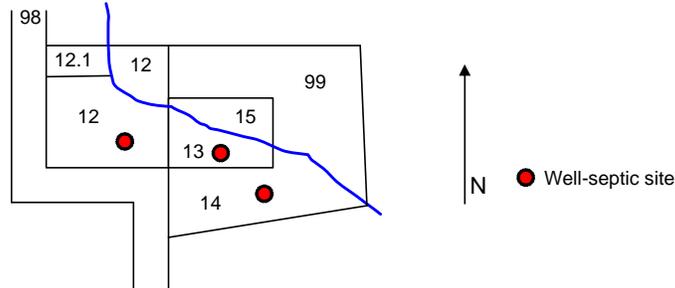
There are two additional issues regarding data maintenance. The first is how historical information will be tracked. Historical information is not included in the Geospatial One Stop criteria and therefore was not included in the Geospatial One Stop Cadastral Data. The historical and change tracking functions do exist in other Cadastral Standards and these other standards would be needed to implement this view of information. Many jurisdictions do not track ongoing updates and instead "snapshot" the information at various points in time to establish an archive. There are many strategies for tracking historical parcel information and these issues have not been thoroughly discussed in Geospatial One Stop. For the initial version of the Cadastral Data for the Geospatial One Stop, the published information will be the currently

available data with the understanding that jurisdictions will have varied timelines for updates and for posting changes and updates.

Reuse of Parcel IDs

The second maintenance issue has to do with how new Parcel IDs are assigned. In Example 2, a new parcel has been created along with a new tax roll entry.

Example 2 – Hogan County Tax Parcel Split



Local Government Tax/Assessment Table					
ParcelID	Owner	Exempt	Site Add	Land Val	Improv Val
12	Mary	N		8,000	75,000
12.1	Red	N		2,000	0
13	Joe	N		12,000	75,000
14	Bob	N		7,000	40,000
15	Ester	N		6,000	0
99	USFS	Y		0	0
98	ROW	Y		0	0

Local Government Related Table		
ParcelID	Septic Permit	Building Permit
12	2234	786
13	2235	788
14	2236	789

In this example, Mary has sold a portion of her land to Red. The land values have been apportioned accordingly and a Parcel ID has been assigned to Red's land (12.1) and the parcel, Parcel ID 12, has remained with Mary's land.

The reuse of parent Parcel IDs is a common practice in many jurisdictions. In these jurisdictions the Parcel ID helps track the parent-child relationships among the parcels. These systems are founded on early hard copy map, text dependent systems. The other term for the parent-child parcel relationship is sometimes called remainder parcels. That is, Mary's parcel is a remainder

after the northwestern portion was sold. Remainder parcels also occur with subdivisions. In these cases only part of a parcel is included in the subdivision and there may be “remainder areas”. There is also concern in some jurisdictions about losing tax records. By keeping a parcel number active, that is reusing it and keeping it in the system, there is some assurance that the records for that parcel, perhaps past due taxes and other linkages, such as the link to the well and septic records are not lost.

The reuse of the Parcel ID for parent or remainder parcels can create problems in tracking historical parcel information and in third party use of the parcel information. Historical parcel tracking is not part of the Geospatial One Stop concepts but the applications for third parties or value added systems to connect to Parcel information is an important use. Just as the reuse of parcel numbers provides continuity for County systems, it can provide continuity for third party users as well. For example, if a mortgage company linked their records to a parcel identifier and that number was reused for a now smaller remainder or parent parcel, the linkage to mortgage system, would exist, but it would be to a different area of land. If a jurisdiction or agency reuses parcel numbers then this will need to be made clear to the downstream users, and other information such as the area or the date of creation may be necessary to track changes.

Retirement of Parcel IDs

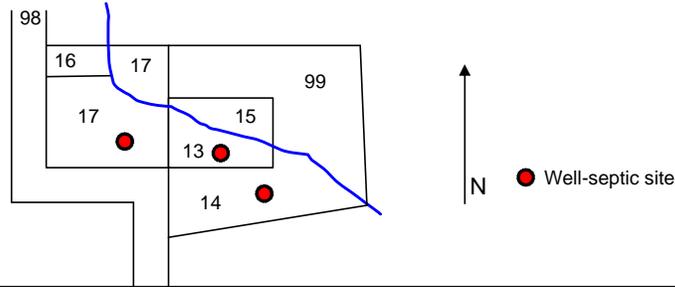
Not all jurisdictions reuse Parcel IDs. Example 3 shows how the new parcel might be handled in an area where new parcel identifiers are assigned with every new parcel. In this example, the resulting new parcels have both been assigned a new number. The old record has been noted as inactive. This note of inactivity would probably be in a separate field, but for the purposes of explanation it is shown in the exempt field. The exempt field is not in the Geospatial One Stop Cadastral Data because it is not needed to support the facilitation of data exchange.

There are several outcomes of this process. The Well and Septic records that were tied to Parcel ID 12 are no longer linked to the active tax records. The former Parcel ID 12 has now become Parcel ID 16 and Parcel ID 17. At the time the new parcels are created, the Well and Septic Records could be updated to point to the correct Parcel ID. In this case a determination would need to be made as to which parcel gets the Well and Septic Records. In Example 3 this is relatively straightforward, but in actual practice it is not always this clear. The other problem is that the person or department maintaining the parcel records may not be responsible for the Well and Septic Permits. In this case editing the Well and Septic records would not be possible and the separate person or department would need to be notified of the changes so that the updates could be made.

In this case storing the X, Y and possibly Z or elevation value of the Well and Septic location could solve the changing Parcel ID problem. If the physical location of the permitted facility is stored, either in a table or on a map, then the link to parcel information can be done spatially. For example, a simple point in polygon analysis could be run to determine which parcel should be related to the permit. This process could be run any time a query is done so that the current information is always retrieved and the maintenance workload for linking these two systems is reduced.

The second question with generating new Parcel IDs is when to do it. That is, should a new Parcel ID be assigned anytime the geometry changes? If any parcel has a new legal description does it get a new Parcel ID? Example 3 is a clear example of assigning a new Parcel ID, but what if there is a boundary adjustment between two parcels? How much area change should occur before there is a new Parcel ID? Or, are new Parcel IDs only assigned when there is a new parcel created either by splitting an existing parcel or merging or combining two existing parcels? The answers to these questions may vary from place to place and thus create slight variations in what the parcel identifier means within a jurisdiction and how it can subsequently be applied.

Example 3 – Hogan County Tax Parcel Split – With New Parcel Numbers



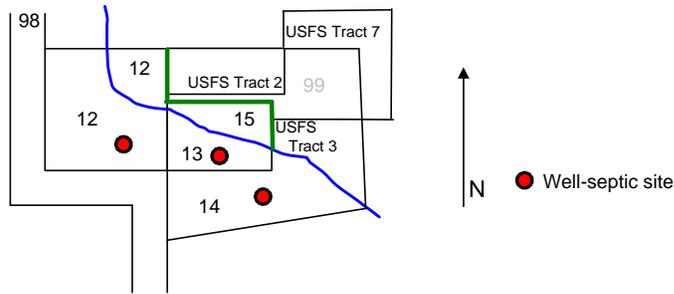
Local Government Tax/Assessment Table					
ParcelID	Owner	Exempt	Site Add	Land Val	Improv Val
17	Mary	N		8,000	75,000
16	Red	N		2,000	0
13	Joe	N		12,000	75,000
14	Bob	N		7,000	40,000
15	Ester	N		6,000	0
99	USFS	Y		0	0
98	ROW	Y		0	0
12	Mary	inactive			

Local Government Related Table		
ParcelID	Septic Permit	Building Permit
12	2234	786
13	2235	788
14	2236	789

In this example, Mary has sold a portion of her land to Red. The land values have been apportioned accordingly and new Parcel IDs have been assigned to Red's land (16) and the remainder or parent parcel has also been assigned a new Parcel ID, (17). The record for Parcel ID 12 has been noted as inactive. In some systems a separate table may indicate which new parcels were created out Parcel ID 12.

Linking published parcel data to existing information may create overlapping parcel definitions. That is, in any one area there may be more than one jurisdiction or entity that is maintaining information about the same parcel. In Example 4, the US Forest Service also has parcel information for this portion of Hogan County.

Hogan County – Example 4 – USFS Parcel Data



Local Government Tax/Assessment Table					
ParcelID	Owner	Exempt	Site Add	Land Val	Improv Val
12	Mary	N		10,000	75,000
13	Joe	N		12,000	75,000
14	Bob	N		7,000	40,000
15	Ester	N		6,000	0
99	USFS	Y		0	0
98	ROW	Y		0	0

USFS Tract Information		
ParcelID	Case Number	Restrictions
USFS Tract 2	KA-234	Reserved Oil and Gas
USFS Tract 3	AR-92	Recreation
USFS Tract 7	KA-301	None

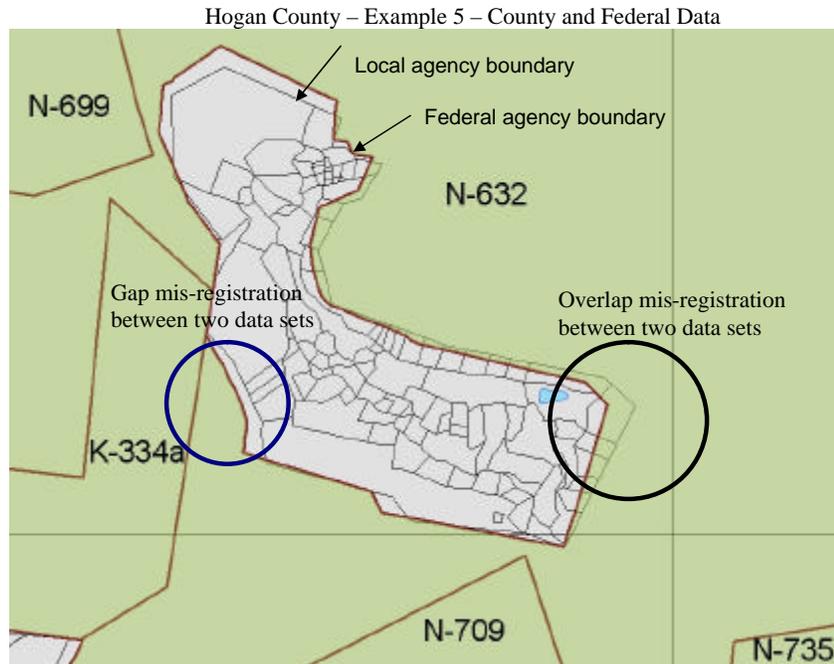
In this example the US Forest Service has parcel information for the area they manage. There are three tracts shown, Tracts 2, 3 and 7. The US Forest Service has related tables with additional information such as rights and restrictions, acquisition dates, boundaries and resources information. The US Forest Service Tracts are the parcels describing the extent of US Forest Service management. There may be areas within the a National Forest that are not held by the federal government, called inholdings, but for the purposes of this example the US Forest Service holdings are as illustrated with continuous, non-overlapping tracts.

In Example 4 the common boundary, shown in green, between the US Forest Service and County match, but within Forest lands the Forest Service shows more detail, three tracts instead of the one large parcel shown by the County. Forest Service Tract 7, in Example 4, extends beyond the one county parcel.

As Example 4 illustrates, the one parcel mapped by the County has three parcels on federal government side. In this example of federal lands, the US Forest Service parcel identifier links to US Forest Service records and the County identifier links to County records. This is an overlapping information situation because there are two agencies that are managing information about parcels with similar geographic extent.

In Example 4 the common boundary between the US Forest Service and the County are in agreement. The two agencies have agreed to the spatial representation of the common boundary and this is shown as a green line in Example 4. This is an example of horizontal spatial integration. That is, there is a spatially seamless representation of the parcels across jurisdictional boundaries.

Even if there were not spatial horizontal integration, the parcel identifier for each agency would still point to the additional records in each agency's databases.



In Example 5, the red outline shows the federal representation of an inholding. In this case the federal representation shows the outline of one parcel that is not managed by the federal agency. In this example there are no federal records for this area, but its outline has been described. The County records show many parcels, indicated in a light green outline. The County Parcel ID points to the County records for the parcels within the County's delineation of the parcels. There

is some mis-registration between the federal and county mapping, but this does not hamper the ability to identify core parcel attributes and to find linkages to the two agencies records.

The exception to this is the area shown inside the blue circle where there is an apparent gap between the two agency data sets. In this area the County information would point to a federal parcel with an indication of exempt from taxes and there would not be a corresponding record in the federal data sets. Likewise overlap creates the appearance of uncertainty in who owns some areas, such as the area shown in the black circle in Example 5. In these areas there would be federal records and county tax records for the same land each showing different ownership and status.

If the county wanted to incorporate the federal data into their parcel maps and likewise if the federal agency wanted to incorporate the county parcels into their system, then this spatial misrepresentation would need to be resolved within the two systems. An agreed upon spatial representation would make it easier to fully incorporate records from the two agencies. It would also eliminate the uncertainty in the gap and overlap areas.

If the parcel identifier points to records in source agency files then the other core data for each parcel would be generated by the related records in the source agency files. Every agency that maintains parcel information can publish their information and the downstream users will be able to see a summary of all available parcel information for an area. The Parcel ID would point to additional information in the agency's and the jurisdiction's databases. The individual variances on the definition, form, format, and content of the Parcel ID would vary. However, appending local Parcel ID's with an agency or jurisdiction code could attain national uniqueness.

2 Normative References

The following standards contain provisions, which through reference in this text constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

- [1] ANSI NCITS 320-1998, *Spatial Data Transfer Standard (SDTS)*.
- [2] FGDC-STD-001-1998, *Content Standard for Digital Geospatial Metadata (version 2.0)*.
- [3] FGDC-STD-003, *Cadastral Data Content Standard*
- [4] FGDC-STD-002.7-2000, *SDTS Part 7: Computer-Aided Design and Drafting (CADD) Profile*.
- [5] FGDC-STD-007.1-1998, *Geospatial Positioning Accuracy Standard, Part 1, Reporting Methodology*.
- [6] FGDC-STD-007.3-1998, *Geospatial Positioning Accuracy Standard, Part 3, National Standard for Spatial Data Accuracy*.

- [7] FGDC-STD-007.4-2002, *Geospatial Positioning Accuracy Standard, Part 4: Architecture, Engineering Construction, and Facilities Management*.
- [8] INCITS 353:2001, *Spatial Data Standard for Facilities, Infrastructure, and Environment*.
- [9] ISO 19115, *Geographic Information—Metadata*.
- [10] Executive Order 12906, April 13, 1994, edition of the Federal Register, Volume 59, Number 71, pp. 17671-17674.
- [11] U.S. CADD/GIS Technology Center, *Spatial Data Standards for Facilities, Infrastructure and the Environment*, V2.2

3 Definitions

Definitions applicable to this standard listed below.

4 Symbols (and abbreviations)

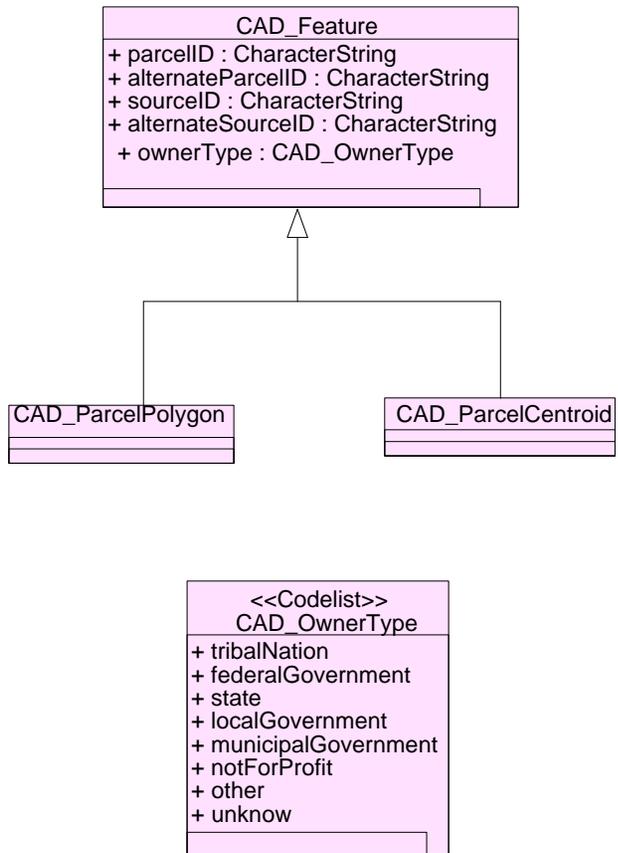
Symbols and associated abbreviations applicable to this standard are listed below.

5 The GOS Feature Meta Model

Semantics

A feature is an abstraction of a real world phenomenon that is of interest to the application. Instances of features that share common characteristics are organized in classes. Classes are object realizations of the Metaclasses defined in the ISO Rules for Application Schemas Standard (ISO 19109), and instances of the types described in the ISO Feature Catalogs Standard (ISO 19110).

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	Name / Role name	Definition	Obligation / Condition	Maximum occurrence	Data type	Domain
1.	CAD_Cadastral Feature				Class	
2.	parcelID	The unique identifier for the parcel as defined by the jurisdiction identified in the SourceID. It should be unique across the jurisdiction.	M	1	CharacterString	Free text
3.	alternateParcelID	The supplementary identifier for the parcel as defined by the jurisdiction identified in the AlternateSourceID. Facilitates data sharing because it identifies another source of information for the parcel	O	n	CharacterString	Free text
4.	sourceID	The designation for the agency, organization or jurisdiction that assigns and maintains the Parcel ID. Federal Information Processing System codes (FIPS codes) should be used where possible	M	1	CharacterString	Free text
5.	alternateSourceID	The designation for the agency, organization or jurisdiction that assigns and maintains the AlternateParcelID. The SourceID should use the Federal Information Processing System codes (FIPS codes) where possible.	O	n	CharacterString	Free text
6.	ownerType	type of ownership is the classification of primary surface owner. This is a conditional field in the sense that if it is available it should be provided	O	1	Class	CAD_OwnerType <<Codelist>>

7.	CAD_ParcelPolygon	The geographic extent of the parcel, the parcel boundaries forming a closed polygon. The collection of parcel outlines forms the parcel map. The parcel polygon may not be part of the data set that is published or distributed, but if it is available it should be included. If parcel outlines are not available parcel centroids would be desirable.				
8.	CAD_PacelCentroid	A point within the parcel that can be used to attach related information. The parcel centroid provides a general point location of the parcel				

Normative Annex A. UML notations

The material in this annex is drawn from ISO/TS 19103: Geographic information - Conceptual schema language and ISO 19115: Geographic information - Conceptual schema language. The diagrams that appear in this Standard are presented using the Unified Modeling Language (UML) static structure diagram with the ISO Interface Definition Language (IDL) basic type definitions and the UML Object Constraint Language (OCL) as the conceptual schema language. The UML notations used in this standard are described in Figures 9 and 10.

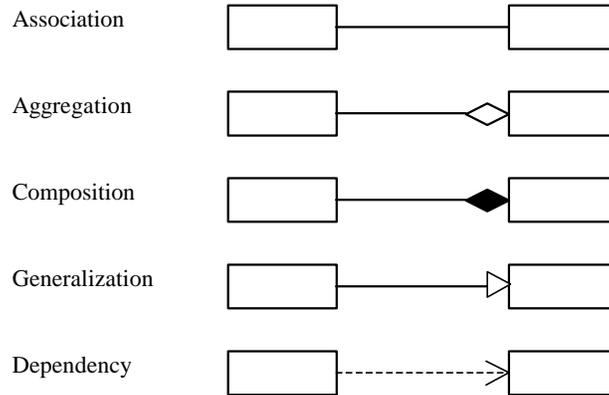


Figure A-1–UML notation

UML model relationships

Associations

An association is used to describe a relationship between two or more classes. UML defines three different types of relationships, called association, aggregation and composition. The three types have different semantics. An ordinary association shall be used to represent a general relationship between two classes. The aggregation and composition associations shall be used to create part-whole relationships between two classes. The direction of an association must be specified. If the direction is not specified, it is assumed to be a two-way association. If one-way associations are intended, the direction of the association can be marked by an arrow at the end of the line.

An aggregation association is a relationship between two classes in which one of the classes plays the role of container and the other plays the role of the contained. A composition association is a strong aggregation. In a composition association, if a container object is deleted, then all of its contained objects are deleted as well. The composition association shall be used

when the objects representing the parts of a container object cannot exist without the container object.

Generalization

A generalization is a relationship between a superclass and the subclasses that may be substituted for it. The super-class is the generalized class, while the subclasses are specified classes.

Instantiation / Dependency

A dependency relationship shows that the client class depends on the supplier class/interface to provide certain services, such as:

- Client class accesses a value (constant or variable) defined in the supplier class/interface;
- Operations of the client class invoke operations of the supplier class/interface;
- Operations of the client class have signatures whose return class or arguments are instances of the supplier class/interface.

An instantiated relationship represents the act of substituting actual values for the parameters of a parameterized class or parameterized class utility to create a specialized version of the more general item.

Roles

If an association is navigable in a particular direction, the model shall supply a “role name” that is appropriate for the role of the target object in relation to the source object. Thus in a two-way association, two role names will be supplied.

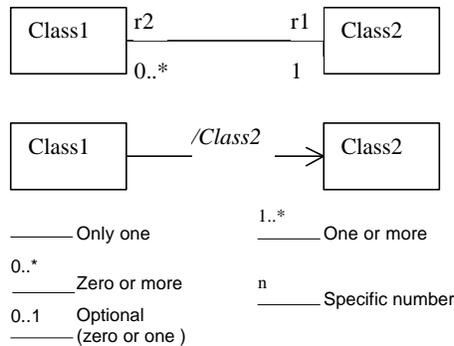


Figure A-2–UML roles

Figure 10 represents how role names and cardinalities are expressed in UML diagrams. The role name “r1” is Class1’s relationship to Class2. The role name “r2” is Class2’s relationship to Class1. The cardinalities show that “zero or many” Class1s are related to “exactly one” Class2.

Figure 2 also shows how derived classes will be expressed. The diagram indicates that Class1 is a derived class of Class2. Any attributes and aggregates of Class1 are also derived from Class2.

UML model stereotypes

A UML stereotype is an extension mechanism for existing UML concepts. It is a model element that is used to classify (or mark) other UML elements so that they in some respect behave as if they were instances of new virtual or pseudo metamodel classes whose form is based on existing base metamodel classes. Stereotypes augment the classification mechanisms on the basis of the built-in UML metamodel class hierarchy. Below are brief descriptions of the stereotypes used in this Standard:

- a) <<DataType>> descriptor of a set of values that lack identity (independent existence and the possibility of side effects). Data types include primitive predefined types and user-definable types. A DataType is thus a class with few or no operations whose primary purpose is to hold the abstract state of another class.
- b) <<CodeList>> used to describe a more open enumeration. <<CodeList>> is a flexible enumeration. Code lists are useful for expressing a long list of potential values. If the elements of the list are completely known, an enumeration should be used; if the only likely values of the elements are known, a code list should be used.
- c) <<Abstract>> class (or other classifier) that cannot be directly instantiated. UML notation for this to show the name in italics.
- d) <<Package>> cluster of logically related components, containing sub-packages.
- e) <<Leaf>> package that contains definitions, without any sub-packages.

Informative Annex B. Sample Cadastral Metadata – Wake County North Carolina

Metadata also available as

Metadata:

- [Identification Information](#)
- [Data Quality Information](#)
- [Spatial Data Organization Information](#)
- [Spatial Reference Information](#)
- [Entity and Attribute Information](#)
- [Distribution Information](#)
- [Metadata Reference Information](#)

Identification Information:

Citation:

Citation Information:

Originator: Wake County GIS

Publication Date: 1999

Title: Cadastral - Wake County

Geospatial Data Presentation Form: Map

Publication Information:

Publication Place: Raleigh, North Carolina

Publisher: Wake County GIS

Other Citation Details: Data is updated daily

Description:

Abstract:

Property related information, including parcel and lot boundaries, right-of-way lines, easements, and subdivision information for all of Wake County.

Purpose:

This data set was created to assist governmental agencies and others in making resource management decisions through use of a Geographic Information System (GIS).

Supplemental Information: System filename : GIS3\$D\LIBRARY\CADASTRE\TILES

Time Period of Content:

Time Period Information:

Range of Dates/Times:

Beginning Date: 1700

Ending Date: Present

Currentness Reference: Data creation and revision dates

Status:

Progress: In work

Maintenance and Update Frequency: Continually

Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -79
East_Bounding_Coordinate: -78.25
North_Bounding_Coordinate: 36.2
South_Bounding_Coordinate: 35.5
Keywords:
Theme:
Theme_Keyword_Thesaurus: None
Theme_Keyword: property maps
Theme_Keyword: tax maps
Theme_Keyword: parcels
Theme_Keyword: cadastre
Theme_Keyword: cadastral
Place:
Place_Keyword_Thesaurus:
William S. Powell, The North Carolina GAZETTEER, A Dictionary of Tar Heel Places,
(Chapel Hill: University of North Carolina Press), August 1984.
Place_Keyword: North Carolina
Access_Constraints: None
Use_Constraints:
Wake County Geographic Information Services shall not be held liable for any errors in these data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. These data cannot be construed to be a legal document. Primary sources from which these data were compiled must be consulted for verification of information contained in these data.
Point_of_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Anne Payne
Contact_Organization: Wake County GIS
Contact_Address:
Address_Type: Mailing address
Address: P. O. Box 550
City: Raleigh
State_or_Province: NC
Postal_Code: 27602
Country: U.S.A.
Contact_Voice_Telephone: (919)856-6383
Contact_Facsimile_Telephone: (919)856-6389
Contact_Electronic_Mail_Address: apayne@co.wake.nc.us
Hours_of_Service: 8:00 - 5:00
Native_Data_Set_Environment:
Data is currently maintained on a WINDOWS NT server. Data is currently maintained in ARC/INFO GIS format.

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Attribute data are transferred from Deeds and subdivision plats. No other accuracy checks are made.

Logical_Consistency_Report:

Software checks for topology consistency. Software ensures that there are no duplicate lines, overshoots or undershoots.

Completeness_Report:

All boundary lines represented on deeds and plats transferred to digital files; map definition conforms to the "Technical Specifications for Base, Cadastral and Digital Mapping" (NC Land Records Management Program, NC Attorney General's Office)

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

The original database delivered by the conversion vendor was compiled according to the "Technical Specifications for Base, Cadastral and Digital Mapping" (NC Land Records Management Program, NC Attorney General's Office) For updates, information from deeds and plats is digitized or entered using coordinate geometry and adjusted to the surrounding existing linework

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: ASI Landmark, Inc.

Publication_Date: 1989

Title: Orthophotographs

Geospatial_Data_Presentation_Form: map

Publication_Information:

Publication_Place: Cary, North Carolina

Publisher: ASI Landmark, Inc.

Other_Citation_Details: Contracted by Wake County

Source_Scale_Denominator: 1200

Type_of_Source_Media: mylar

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1988

Ending_Date: 1989

Source_Currentness_Reference: Photography capture dates

Source_Citation_Abbreviation: Orthos

Source_Contribution:

Hardcopy orthophotography used as a Reference base for cadastral mapping.

Source_Information:

Source_Citation:

Citation_Information:

Originator: Register of deeds
Publication_Date: Unknown
Title: Recorded deeds and plats of Wake County
Geospatial_Data_Presentation_Form: map
Publication_Information:
Publication_Place: Wake County
Publisher: Register of Deeds
Source_Scale_Denominator: 1200
Type_of_Source_Media: paper
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 1700
Ending_Date: Present
Source_Currentness_Reference:
Approximate time period of deed recordation
Source_Citation_Abbreviation: None
Source_Contribution:
Official County records of reported property Transactions including textural or graphic area delineations.
Process_Step:
Process_Description:
Contractor to Wake County produced rectified orthoimagery at scales of 1"=50' (16), 1"=100' (840), and 1"=200' (228). Prepared Deed Packs (property record card, deed, deed plat and/or copy of plat) for each parcel. Performed Cadastral Compilation. Performed field research on difficult to locate and/or map parcels. Performed Data Base Design of digital data by layer, attribute, line, point, polygon, topology, etc. Performed digital database construction by digitally capturing all lines and polygons from the worksheet, and assigning attributes (NCPIN, calculated acreage, scaled distance, street names, subdivision PINs, old parcel number, deed acreage, etc.). Where applicable, map layer components were captured as itemized in section 12.01 of the North Carolina Land Records Management Program's "Technical Specifications for Base, Cadastral, and Digital Mapping, October 1987". The NCPIN was automatically computed based upon parcel centroid location. Map data was captured to conform to the North Carolina State Plane Coordinate System. The data was topologically structured during digitizing and attribute data was input into graphically linked database manager programs. Quality control was accomplished by visually inspecting check plots of the digitized data.
Process_Date: 1991
Process_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: ASI Landmark, Inc.
Contact_Address:
Address_Type: Mailing and physical address
Address: 1903 N. Harrison St.
City: Cary

State_or_Province: North Carolina
Postal_Code: 27513
Country: U.S.A.
Contact_Voice_Telephone: (919) 677-0040
Hours_of_Service: 8:00 am - 5:00 pm, M - F
Contact_Instructions: Preferred contact is by phone.
Process_Step:

Process_Description:

Vector or digitize parcel boundaries as topological polygons from deeds, plats, ordinances, and declarations recorded in the Register of Deeds Office. Vector or digitize parcels as topological polygons from unrecorded plats submitted by surveyors, attorneys, or property owners. Research problem deeds in which property lines do not close and adjust or move property lines (topology) accordingly. Research recorded deeds when property ownership is in question and splitting or combining of property lines (topology) is needed. Research declarations recorded in Register of Deeds to set up condominiums. Assist public with problems related to incorrect or overlapping of property lines and incorrect billing of acreage. Assist other adjoining counties with problems related to alignment of County line. Expand corporate limit and fire district polygons (topology) when boundaries are changed or extended. Prepare documentation of changes made to property (ownership, acreage, legal description, fire district, corporate limit, etc.) and send to Revenue Dept. to update for next year billing or to re-bill, if necessary.

Process_Date: 1993

Process_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Anne Payne

Contact_Organization: Wake County GIS

Contact_Address:

Address_Type: Mailing address

Address: P. O. Box 550

City: Raleigh

State_or_Province: NC

Postal_Code: 27602

Country: U.S.A.

Contact_Voice_Telephone: (919)856-6383

Contact_Facsimile_Telephone: (919)856-6389

Contact_Electronic_Mail_Address: apayne@co.wake.nc.us

Hours_of_Service: 8:00 - 5:00

Process_Step:

Process_Description:

The entire cadastral data set was converted from GDS to ARC/INFO format. The data were exported from GDS to DXF, which served as an intermediary format to transfer the linework. The linework was subsequently imported into Arc/Info coverages. Items were added to the polygon attribute tables to hold the primary database key (PIN). The primary database keys (PIN) were re-established by creating a text file of PIN's, their State Plane coordinates (X,Y) which were used by Arc/Info to create label points which could then

be associated with their surrounding polygon to re-establish the link between linework and attributes.

Process_Date: 1999

Process_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Anne Payne

Contact_Organization: Wake County GIS

Contact_Address:

Address_Type: Mailing address

Address: P. O. Box 550

City: Raleigh

State_or_Province: NC

Postal_Code: 27602

Country: U.S.A.

Contact_Voice_Telephone: (919)856-6383

Contact_Facsimile_Telephone: (919)856-6389

Contact_Electronic_Mail_Address: apayne@co.wake.nc.us

Hours_of_Service: 8:00 - 5:00

Cloud_Cover: Unknown

Spatial_Data_Organization_Information:

Indirect_Spatial_Reference: North Carolina Parcel ID Number

Direct_Spatial_Reference_Method: Vector

Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: GT-polygon composed of rings

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: String

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Elliptical Arc

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Planar:

Grid_Coordinate_System:

Grid_Coordinate_System_Name: State Plane Coordinate System 1983

State_Plane_Coordinate_System:

SPCS_Zone_Identifier: 3200

Lambert_Conformal_Conic:

Standard_Parallel: 34.333

Standard_Parallel: 36.167

Longitude_of_Central_Meridian: 79

Latitude_of_Projection_Origin: 33.75

False_Easting: 2000000
False_Northing: 0
Planar_Coordinate_Information:
Planar_Coordinate_Encoding_Method: Coordinate Pair
Coordinate_Representation:
Abscissa_Resolution: 1
Ordinate_Resolution: 1
Planar_Distance_Units: survey feet
Geodetic_Model:
Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: Geodetic Reference System 80
Semi-major_Axis: 6378206
Denominator_of_Flattening_Ratio: 294.9786982

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: Property

Entity_Type_Definition: Discrete real estate parcel

Entity_Type_Definition_Source: Recorded deeds and subdivision plats

Attribute:

Attribute_Label: ACCOUNT

Attribute_Definition: Account number used by Wake County Revenue Dept.

Attribute_Definition_Source:

serial number assigned by Wake County Revenue Department

Attribute_Domain_Values:

Unrepresentable_Domain: operator-assigned

Attribute_Measurement_Frequency: Assigned once at parcel creation

Attribute:

Attribute_Label: PIN

Attribute_Definition:

North Carolina Property Identification Number based on NC State Plane Coordinate system

Attribute_Definition_Source: software computed

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 0000000000

Range_Domain_Maximum: 7999999999

Attribute_Units_of_Measure: feet

Attribute_Measurement_Resolution: 0.001

Attribute_Measurement_Frequency: As needed

Detailed_Description:

Entity_Type:

Entity_Type_Label: Blocks

Entity_Type_Definition: Map block grid based on state plane coordinate system

Entity_Type_Definition_Source: Wake County GIS

Attribute:
Attribute_Label: INDEX
Attribute_Definition: Map index number
Attribute_Definition_Source: Wake County GIS
Attribute_Domain_Values:
Unrepresentable_Domain: Map index number
Attribute_Measurement_Frequency: None planned
Detailed_Description:
Entity_Type:
Entity_Type_Label: Miscase
Entity_Type_Definition: Miscellaneous easements
Entity_Type_Definition_Source: Recorded deeds and subdivision plats
Detailed_Description:
Entity_Type:
Entity_Type_Label: RR
Entity_Type_Definition: Rail Road easements
Entity_Type_Definition_Source: Recorded deeds and subdivision plats
Detailed_Description:
Entity_Type:
Entity_Type_Label: Easement
Entity_Type_Definition: Major easements
Entity_Type_Definition_Source: Recorded deeds and subdivision plats
Detailed_Description:
Entity_Type:
Entity_Type_Label: Propmisc
Entity_Type_Definition: Miscellaneous items related to property
Entity_Type_Definition_Source: Wake County GIS
Detailed_Description:
Entity_Type:
Entity_Type_Label: Lot
Entity_Type_Definition: A deeded segment of a parcel
Entity_Type_Definition_Source: Recorded deeds and subdivision plats
Attribute:
Attribute_Label: ACCOUNT
Attribute_Definition: Account number used by Wake County Revenue Dept.
Attribute_Definition_Source: Serial number assigned by Wake County Revenue Department
Attribute_Domain_Values:
Unrepresentable_Domain: Operator assigned
Attribute_Measurement_Frequency: assigned once at lot creation
Attribute:
Attribute_Label: LOTLTR
Attribute_Definition: Assigned lot letter
Attribute_Definition_Source: Wake County GIS
Attribute_Domain_Values:
Unrepresentable_Domain: Operator assigned

Attribute_Measurement_Frequency: As needed
Attribute:
Attribute_Label: LOTNUM
Attribute_Definition: Lot number from recorded plat or deed
Attribute_Definition_Source: Wake County GIS
Attribute_Domain_Values:
Unrepresentable_Domain: Operator assigned
Attribute_Measurement_Frequency: As needed
Attribute:
Attribute_Label: PIN
Attribute_Definition: North Carolina Property Identification Number
Attribute_Definition_Source: Software computed
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 0
Range_Domain_Maximum: 7999999999
Attribute_Units_of_Measure: feet
Attribute_Measurement_Resolution: 0.001
Attribute_Measurement_Frequency: As needed
Detailed_Description:
Entity_Type:
Entity_Type_Label: Inactive
Entity_Type_Definition: Property not actively billed by Wake County Revenue
Entity_Type_Definition_Source: Recorded deeds and subdivision plats
Attribute:
Attribute_Label: INACTIVE_ID
Attribute_Definition: Identification number used by Wake County Revenue Dept.
Attribute_Definition_Source: Serial number assigned by Wake County Revenue
Attribute_Domain_Values:
Unrepresentable_Domain: Operator assigned
Attribute_Measurement_Frequency: As needed
Attribute:
Attribute_Label: PIN
Attribute_Definition: North Carolina Property Identification Number
Attribute_Definition_Source: Software computed
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 0
Range_Domain_Maximum: 7999999999
Attribute_Units_of_Measure: feet
Attribute_Measurement_Resolution: 0.001
Attribute_Measurement_Frequency: As needed
Detailed_Description:
Entity_Type:
Entity_Type_Label: Olot
Entity_Type_Definition: Original lot lines of a parcel of land

Entity_Type_Definition_Source: Recorded deeds and subdivision plats

Overview_Description:

Entity_and_Attribute_Overview:

Each cadastral tile consist of several arc coverages that make up the layers of data of a cadastral map. The coverages that complete a cadastral tile are the property or parcel layer, blocks, railroads, major and miscellaneous easements, deeded and original lot lines, miscellaneous property features, and inactive properties.

Entity_and_Attribute_Detail_Citation: None

Distribution_Information:

Distributor:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Wake County GIS

Contact_Position: GIS Database Administrator

Contact_Address:

Address_Type: Mailing address

Address: P. O. Box 550

City: Raleigh

State_or_Province: NC

Postal_Code: 27602

Country: USA

Contact_Voice_Telephone: (919)856-6383

Contact_Facsimile_Telephone: (919)856-6389

Contact_Electronic_Mail_Address: apayne@co.wake.nc.us

Hours_of_Service: 8:00AM - 5:00PM

Contact_Instructions:

Phone and electronic mail preferred. For current price information use a web browser:

Metadata - <http://www.co.wake.nc.us/gis>

Distribution_Liability:

Wake County GIS is charged with the development and maintenance of the County's corporate geographic database and, in cooperation with other mapping organizations, is committed to offering its users accurate, useful, and current information about the County. Although every effort has been made to ensure the accuracy of information, errors and conditions originating from physical sources used to develop the database may be reflected in the data supplied. The user must be aware of data conditions and bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other conditions specific to certain data. The use of trade names or commercial products does not constitute their endorsement by the County.

Standard_Order_Process:

Fees:

Selected datasets on CD in either shape or .e00 format are \$100. For pricing on custom orders, use a web browser: <http://www.co.wake.nc.us/gis>

Ordering_Instructions:

Selected datasets are available in Shape file and Export File formats. All shape and .e00 files are compressed into a zipped format and they include data only. Data are also available in DXF format and are compressed using PKZIP. For more information on formats and media, use a web browser: Metadata - <http://www.co.wake.nc.us/gis>

Turnaround:

Most orders will be completed by the next business day, depending on the size of the request, media option and previous requests.

Custom_Order_Process:

FOR DIGITAL OR NON-DIGITAL DATA, contact Wake County GIS or use a web browser: <http://www.co.wake.nc.us/gis>

Technical_Prerequisites:

Data is translated quarterly into .DXF format. Files are zipped prior to distribution. Format compatibility is the user's responsibility. For more information on formats and media, use a web browser: Metadata - <http://www.co.wake.nc.us/gis>

Metadata_Reference_Information:

Metadata_Date: 19980106

Metadata_Review_Date: 20000922

Metadata_Future_Review_Date: 20001231

Metadata_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Wake County GIS

Contact_Position: GIS Database Administrator

Contact_Address:

Address_Type: Mailing address

Address: P. O. Box 550

City: Raleigh

State_or_Province: NC

Postal_Code: 27602

Country: USA

Contact_Voice_Telephone: (919)856-6383

Contact_Facsimile_Telephone: (919)856-6389

Contact_Electronic_Mail_Address: apayne@co.wake.nc.us

Hours_of_Service: 8:00AM - 5:00PM

Contact_Instructions:

Phone and electronic mail preferred. For current price information use a web browser:

Metadata - <http://www.co.wake.nc.us/gis>

Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Time_Convention: Local time

Metadata_Access_Constraints: None

Metadata_Use_Constraints:

This metadata file is to accompany the data set identified and received from WCGIS. WCGIS does not support secondary distribution. If this data file was received from

anyone besides WCGIS, this metadata file and the data set it describes may contain discrepancies.

Generated by [mg](#) version 2.4.33 on Thu Apr 26 09:06:53 2001



gisvec1.OC.Parcel

Data format: SDE Feature Class

File or table name: gisvec1.OC.Parcel

Coordinate system: Lambert Conformal Conic

Theme keywords: parcels

FGDC and ESRI Metadata:

- [Identification Information](#)
- [Data Quality Information](#)
- [Spatial Data Organization Information](#)
- [Spatial Reference Information](#)
- [Entity and Attribute Information](#)
- [Distribution Information](#)
- [Metadata Reference Information](#)
- [Binary Enclosures](#)

Metadata elements shown with blue text are defined in the Federal Geographic Data Committee's (FGDC) [Content Standard for Digital Geospatial Metadata \(CSDGM\)](#). Elements shown with green text are defined in the [ESRI Profile of the CSDGM](#). Elements shown with a green asterisk (*) will be automatically updated by ArcCatalog. ArcCatalog adds hints indicating which FGDC elements are mandatory; these are shown with gray text.

Identification Information:

Citation:
Citation information:
Originators: Oakland County GIS Utility

***Title:**
gisvec1.OC.Parcel
***File or table name:** gisvec1.OC.Parcel

Publication date: 1998
***Geospatial data presentation form:** vector digital data

***Online linkage:** [Server=oakgis02: Service=5152: Database=gisvec1: User=oc: Version=sde.DEFAULT](#)

Description:

Abstract:

A spatial representation of the parcels used to derive tax parcels. This polygon feature class is compiled from the Boundary feature class.

Parcels are characterized as continuous, non-overlapping polygons that are described by conveyance instruments, which are typically recorded in the Register of Deeds Office. All of the parcels together provide a continuous and seamless representation of the County; in other words, the parcels tessellate.

Purpose:

The primary purpose of the feature class is to compile the building blocks for the Tax Parcel feature class.

It is also useful for spatial analysis and cartographic output.

Supplemental information:

Not applicable.

***Language of dataset:** en

Time period of content:

Time period information:

Single date/time:

Calendar date: 1998

Currentness reference:

publication date

Status:

Progress: Complete

Maintenance and update frequency: Weekly

Spatial domain:

Bounding coordinates:

***West bounding coordinate:** -83.694282

***East bounding coordinate:** -83.074282

***North bounding coordinate:** 42.893598

***South bounding coordinate:** 42.426087

Local bounding coordinates:

***Left bounding coordinate:** 13304874.475923

***Right bounding coordinate:** 13469681.868077

***Top bounding coordinate:** 508595.337910

***Bottom bounding coordinate:** 340130.680090

Keywords:

Theme:

Theme keywords: parcels
Theme keyword thesaurus: TBD

Access constraints:
<http://www.co.oakland.mi.us/gis/assets/docs/EnhancedAccessPolicy.pdf>
Use constraints:
<http://www.co.oakland.mi.us/gis/assets/docs/GISDataPolicies.pdf>

Point of contact:
Contact information:
Contact organization primary:
Contact person: Anita Campbell
Contact organization: Oakland County GIS Utility
Contact position: GIS Data Services Team Leader

Contact address:
Address type: mailing address
Address:
1200 N Telegraph Rd, Bldg 49W
City: Pontiac
State or province: MI
Postal code: 48341
Country: US

Contact voice telephone: 248.858.2388
Contact facsimile telephone: 248.452.8075

Contact electronic mail address: campbella@co.oakland.mi.us

Hours of service: 8:30 a.m. to 5:00 p.m.

***Native dataset format:** SDE Feature Class
***Native data set environment:**
Microsoft Windows 2000 Version 5.1 (Build 2600) ; ESRI ArcCatalog 8.2.0.700

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Data Quality Information:

Lineage:
Process step:
Process description:
This feature class is derived from the Boundary feature class.

Process step:
Process description:

Manual quality checks occur as maintenance is committed to the parcel fabric.

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Spatial Data Organization Information:

***Direct spatial Reference method:** Vector

Point and vector object information:

SDTS terms description:

***Name:** gisvec1.OC.Parcel

***SDTS point and vector object type:** G-polygon

***Point and vector object count:** 645446

ESRI terms description:

***Name:** gisvec1.OC.Parcel

***ESRI feature type:** Simple

***ESRI feature geometry:** Polygon

***ESRI topology:** FALSE

***ESRI feature count:** 645446

***Spatial index:** TRUE

***Linear referencing:** FALSE

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Spatial Reference Information:

Horizontal coordinate system definition:

Coordinate system name:

***Projected coordinate system name:**

NAD_1983_StatePlane_Michigan_South_FIPS_2113_IntlFeet

***Geographic coordinate system name:** GCS_North_American_1983

Planar:

Map projection:

***Map projection name:** Lambert Conformal Conic

Lambert conformal conic:

***Standard parallel:** 42.100000

***Standard parallel:** 43.666667

***Longitude of central meridian:** -84.366667

***Latitude of projection origin:** 41.500000

***False easting:** 13123359.580052

***False northing:** 0.000000

Planar coordinate information:

***Planar coordinate encoding method:** coordinate pair

Coordinate representation:

***Abscissa resolution:** 0.000256

***Ordinate resolution:** 0.000256

***Planar distance units:** international feet

Geodetic model:

***Horizontal datum name:** North American Datum of 1983

***Ellipsoid name:** Geodetic Reference System 80

***Semi-major axis:** 6378137.000000

***Denominator of flattening ratio:** 298.257222

Vertical coordinate system definition:

Altitude system definition:

***Altitude resolution:** 1.000000

***Altitude encoding method:** Explicit elevation coordinate included with horizontal coordinates

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Entity and Attribute Information:

Detailed description:

***Name:** gisvec1.OC.Parcel

Entity type:

***Entity type label:** gisvec1.OC.Parcel

***Entity type type:** Feature Class

***Entity type count:** 645446

Entity type definition:

The lowest common demoninator of the polygon feature classes of the Parcel feature dataset.

Attribute:

***Attribute label:** OBJECTID

***Attribute alias:** OBJECTID

***Attribute definition:**

Internal feature number.

***Attribute definition source:**

ESRI

***Attribute type:** OID

***Attribute width:** 4

***Attribute precision:** 10

***Attribute scale:** 0

Attribute domain values:

***Unrepresentable domain:**

Sequential unique whole numbers that are automatically generated.

Attribute:

***Attribute label:** PIN

***Attribute alias:** PIN

Attribute definition:

Primary tax parcel identification number. The lowest pin value when multiple PINs are present (i.e. building condominium).

*Attribute type: String
*Attribute width: 10
*Attribute precision: 0
*Attribute scale: 0

Attribute:

*Attribute label: PINFLG
*Attribute alias: PINFLG

Attribute definition:

Flag used to identify those polygons that contain multiple PINs (i.e. building condominium).

*Attribute type: SmallInteger
*Attribute width: 2
*Attribute precision: 5
*Attribute scale: 0

Attribute:

*Attribute label: LOTUNIT
*Attribute alias: LOTUNIT

Attribute definition:

The individual lot number, unit number or name assigned to a subdivision lot or condominium unit, including park name and general common element designation. This value is supported by a recorded plat or condominium plan.

*Attribute type: String
*Attribute width: 60
*Attribute precision: 0
*Attribute scale: 0

Attribute:

*Attribute label: BLOCK
*Attribute alias: BLOCK

Attribute definition:

A number sometimes found in simultaneous conveyances to identify subdivision blocks when lot numbers are not unique. This value is supported by a recorded plat.

*Attribute type: String
*Attribute width: 20
*Attribute precision: 0
*Attribute scale: 0

Attribute:

*Attribute label: ROUCD

***Attribute alias:** ROUCD

Attribute definition:

Describes the general rights of use. In the event that the right of use (ROU) is both General Common Element and Public or Private road, the feature will be coded as road.

***Attribute type:** String

***Attribute width:** 2

***Attribute precision:** 0

***Attribute scale:** 0

Attribute domain values:

Enumerated domain:

Enumerated domain value: R

Enumerated domain value definition:

Public Right of Ingress/Egress

Enumerated domain:

Enumerated domain value: P

Enumerated domain value definition:

Private Right of Ingress/Egress

Enumerated domain:

Enumerated domain value: H

Enumerated domain value definition:

Hydrography

Enumerated domain:

Enumerated domain value: S

Enumerated domain value definition:

Subdivision Park

Enumerated domain:

Enumerated domain value: G

Enumerated domain value definition:

General Common Element

Enumerated domain:

Enumerated domain value: RR

Enumerated domain value definition:

Railroad

Attribute:

***Attribute label:** Shape

***Attribute alias:** Shape

***Attribute definition:**

Feature geometry.

***Attribute definition source:**

ESRI

***Attribute type:** Geometry

***Attribute width:** 4

*Attribute precision: 0
*Attribute scale: 0

Attribute domain values:
*Unrepresentable domain:
Coordinates defining the features.

Attribute:
*Attribute label: Shape.area
*Attribute alias: Shape.area

*Attribute type: Double
*Attribute width: 0
*Attribute precision: 0
*Attribute scale: 0

Attribute:
*Attribute label: Shape.len
*Attribute alias: Shape.len

*Attribute type: Double
*Attribute width: 0
*Attribute precision: 0
*Attribute scale: 0

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Distribution Information:

Distributor:
Contact information:
Contact organization primary:
Contact person: Erick Phillips
Contact organization: Oakland County One Stop Shop
Contact position: Supervisor

Contact address:
Address type: mailing and physical address
Address:
1200 N Telegraph Rd, Bldg 34E
City: Pontiac
State or province: MI
Postal code: 48341
Country: US

Contact voice telephone: 248.858.4070
Contact facsimile telephone: 248.858.1080

Contact electronic mail address: phillipse@co.oakland.mi.us

Hours of service: 9:00 a.m. to 4:00 p.m.

Resource description: Downloadable Data

Standard order process:
Digital form:
Digital transfer information:
Format name: Shapefiles, .tiff and MrSID

Digital transfer option:
Online option:
Computer contact information:
Network address:

Offline option:
Offline media: CD-ROM

Fees: Varies by data type and agent.

Ordering instructions:
Contact Erick Phillips of the One Stop Shop by phone.
Turnaround: 24 hrs.

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Metadata Reference Information:

***Metadata date:** 20030220

***Language of metadata:** en

Metadata contact:
Contact information:
Contact person primary:
Contact person: Anita Campbell
Contact organization: Oakland County GIS Utility
Contact position: GIS Data Services Team Leader

Contact address:

Address type: mailing address

Address:

1200 N Telegraph Rd, 49W

City: Pontiac

State or province: MI

Postal code: 48341

Country: US

Contact voice telephone: 248.858.2388

Contact facsimile telephone: 248.452.8075

Contact electronic mail address: campbella@co.oakland.mi.us

Hours of service: 8:30 a.m. to 5:00 p.m.

***Metadata standard name:** FGDC Content Standards for Digital Geospatial Metadata

***Metadata standard version:** FGDC-STD-001-1998

***Metadata time convention:** local time

Metadata extensions:

***Online linkage:** <http://www.esri.com/metadata/esriprof80.html>

***Profile name:** ESRI Metadata Profile

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Binary Enclosures:

Thumbnail:

Enclosure type: Picture



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