

CORPORATE GIS STANDARDS

METADATA

TABLE OF CONTENTS

I.	Introduction	2
A.	Purpose	2
B.	Reference	2
C.	Metadata Definition	2
II.	Creation and Maintenance	2
III.	Submittal Requirements	3
IV.	Specific Requirements	3
A.	Corporate GIS Spatial Data Standards	3
B.	Corporate GIS Database Standards	4
C.	Corporate GIS Cartography Standards	5
D.	Corporate GIS Analysis Standards	5
E.	Corporate GIS Document Imaging Standards	6
F.	Corporate GIS Application Standards	7
G.	Corporate GIS Project Standards	7
V.	Other Related Standards and Information to Reference	7
	APPENDIX – Categorical Metadata Entry Guide	8
	APPENDIX – Alphabetical Metadata Entry Guide	16

CORPORATE GIS STANDARDS

METADATA

I. Introduction

A. Purpose

Compliance with these standards will facilitate data sharing, integration and compatibility among users of the city GIS System. The objective of these standards is to provide guidelines that enable the creation of complete and consistent metadata for GIS data by City and County of Denver GIS users and their contractors.

B. Reference

It is the responsibility of the user to ensure they are using the most recent version of the standards. The most recent version for all Corporate GIS Standards can be found at <http://mydenver/DenverGIS> Standards.

Inquiries should be directed to:

David Luhan
GIS Supervisor
City and County of Denver
(720) 865-2670
DenverGIS@ci.denver.co.us

C. Metadata Definition

Metadata is typically defined as “data about data”. Metadata describes the content, quality, condition, and other characteristics of data. Depending on the type of data it is describing, for example, spatial vs. database, metadata will require that different categories of information be entered.

II. Creation and Maintenance

1. Spatial Metadata

- a. Must adhere to Federal Geographic Data Committee (FGDC) standards found at: www.fgdc.gov/.
- b. Submission of Metadata should be HTML or XML format. The Corporate GIS prefers XML format.
- c. ArcGIS users should use ArcCatalog to create and maintain metadata for Corporate GIS submission.
- d. ArcView users may use an HTML editor, or other FGDC compliant metadata generator. See the following URL for an ArcView Extension

CORPORATE GIS STANDARDS

METADATA

that creates FGDC metadata.

<http://www.csc.noaa.gov/metadata/text/download.html>.

- e. If neither of these options is available, provide an Excel spreadsheet.
2. Database Metadata
 - a. Build database metadata into the data dictionary
 - b. Coordinate system metadata must be submitted in an Excel spreadsheet.
3. Cartography Metadata
 - a. Single map metadata must be submitted as a readme file, and should be present on the map itself.
 - b. Map series metadata must be XML format.
4. Analysis Metadata
 - a. Analysis metadata must be submitted in an Excel spreadsheet.
5. Document Imaging Metadata
 - a. Document imaging metadata must be submitted in an Excel spreadsheet.
6. Application Metadata
 - a. Application metadata must be submitted as a readme file.
7. Project Metadata
 - a. Project metadata must be submitted as a readme file.

III. Submittal Requirements

See the appendix for a list of standard data that must be submitted for ALL spatial data, databases, maps, and applications.

IV. Specific Requirements

A. Corporate GIS Spatial Data Standards

The following fields are required for spatial metadata. All entries must have standardized responses. See the appendix, *Spatial Metadata Entry Guide* for a guide to each field, including examples and standard entries.

FORMAT
CITATION
ORIGINATOR
PUBLICATION DATE

CORPORATE GIS STANDARDS

METADATA

TITLE
DESCRIPTION
 ABSTRACT
 PURPOSE
TIME PERIOD OF CONTENT
 TIME PERIOD INFORMATION
 CURRENTNESS REFERENCE
STATUS
UPDATE FREQUENCY
KEYWORDS
ACCESS CONSTRAINTS
USE CONSTRAINTS
POINT OF CONTACT
SECURITY INFORMATION
NATIVE DATASET ENVIRONMENT
CROSS REFERENCE
DATA QUALITY INFORMATION
ATTRIBUTE ACCURACY
POSITIONAL ACCURACY
LINEAGE
 SOURCE INFORMATION
 SOURCE SCALE DENOMINATOR
 TYPE OF SOURCE MEDIA
 SOURCE TIME PERIOD OF CONTENT
 PROCESS STEP
ENTITY AND ATTRIBUTE INFORMATION
 ENTITY TYPE LABEL
 ENTITY TYPE DEFINITION
 ENTITY TYPE DEFINITION SOURCE
 ATTRIBUTE LABEL
 ATTRIBUTE DEFINITION
 ATTRIBUTE DEFINITION SOURCE
 ATTRIBUTE DOMAIN VALUES
 ATTRIBUTE DOMAIN VALUES DEFINITION
LOOK UP TABLES
METADATA DATE
FLIGHT DATE
CONTROL SOURCE

B. Corporate GIS Database Standards

Metadata for databases will be built into the Database Dictionary. Additionally, coordinate system metadata is required for databases with coordinate information.

SPATIAL REFERENCE

CORPORATE GIS STANDARDS

METADATA

COORDINATE SYSTEM
MAP PROJECTION
PLANAR COORDINATE INFORMATION
GEODETTIC MODEL

DATA QUALITY INFORMATION
SOURCE INFORMATION
PROCESS STEP
ACCURACY

C. Corporate GIS Cartography Standards

The following pieces of information are recommended on individual maps.

ORIGINATOR
PUBLICATION DATE
TITLE
LOCATION
TIME PERIOD OF CONTENT
 TIME PERIOD INFORMATION
 CURRENTNESS REFERENCE
USE CONSTRAINTS
POINT OF CONTACT
POSITIONAL ACCURACY
LINEAGE
 SOURCE INFORMATION
 SOURCE SCALE DENOMINATOR
 TYPE OF SOURCE MEDIA
 SOURCE TIME PERIOD OF CONTENT

Map published as part of a series may include additional information, such as:

UPDATE FREQUENCY
CROSS REFERENCE

D. Corporate GIS Analysis Standards

All required Spatial metadata is required for analysis submittals. The following special fields are also required. All entries must have standardized responses. See the appendix, *Metadata Entry Guide* for a guide to each field, including examples and standard entries.

DATA REVIEW COMMITTEE MEMBERS
FINAL GIS DATA
DEFINITIONS AND USE OF DATASETS

CORPORATE GIS STANDARDS

METADATA

E. Corporate GIS Document Imaging Standards

Metadata for document imaging must meet the criteria for the Enterprise Document Management System Standards and include:

- FORMAT
- CITATION
- ORIGINATOR
- PUBLICATION DATE
- TITLE
- DESCRIPTION
 - ABSTRACT
 - PURPOSE
- TIME PERIOD OF CONTENT
 - TIME PERIOD INFORMATION
 - CURRENTNESS REFERENCE
- STATUS
- UPDATE FREQUENCY
- KEYWORDS
- ACCESS CONSTRAINTS
- USE CONSTRAINTS
- POINT OF CONTACT
- SECURITY INFORMATION
- NATIVE DATASET ENVIRONMENT
- CROSS REFERENCE
- DATA QUALITY INFORMATION
- ATTRIBUTE ACCURACY
- POSITIONAL ACCURACY
- LINEAGE
 - SOURCE INFORMATION
 - SOURCE SCALE DENOMINATOR
 - TYPE OF SOURCE MEDIA
 - SOURCE TIME PERIOD OF CONTENT
 - PROCESS STEP
- ENTITY AND ATTRIBUTE INFORMATION
 - ENTITY TYPE LABEL
 - ENTITY TYPE DEFINITION
 - ENTITY TYPE DEFINITION SOURCE
 - ATTRIBUTE LABEL
 - ATTRIBUTE DEFINITION
 - ATTRIBUTE DEFINITION SOURCE
 - ATTRIBUTE DOMAIN VALUES
 - ATTRIBUTE DOMAIN VALUES DEFINITION

CORPORATE GIS STANDARDS

METADATA

LOOK UP TABLES
METADATA DATE
GIS DATASET RELATIONSHIP AND LINKS
EDMS SYSTEM
EDMS ACCESS POINTS

F. Corporate GIS Application Standards

G. Corporate GIS Project Standards

Submitted .MXDs, .APRs and .AEPs should include the following information in a readme file.

LAYERS
FORMAT
VERSION
EXTENSIONS OR ADD-INS
PURPOSE
SYMBOLGY

V. Other Related Standards and Information to Reference

1. FGDC Standards: www.fgdc.gov/
2. Protecting Your Investment in Data with Metadata, on-line Virtual Campus class at www.esri.com/

CORPORATE GIS STANDARDS

METADATA

APPENDIX – Categorical Metadata Entry Guide

The fields indicated by underline are required for metadata entry. All entries should have standardized responses. The text below provides descriptive explanations, and/or examples for the use of each metadata category. Standard values are indicated by text delimited with quotes.

Identification Information:

Citation:

Citation Information:

Originator: CCOD Department or Agency submitting the data. Please spell out this information (no acronyms)

Publication Date: MM/DD/YY

Title: Brief, descriptive title of the data. Avoid using the layer name.

Geospatial Data Presentation Form: “Vector digital data”, “Raster digital data”

Online Linkage: Leave blank

Format: What format the data is in.

"ARCE" ARC/INFO Export format

"ARCG" ARC/INFO Generate format

"ARCGDB" ARCGIS Geodatabase with URL

"ASCII" ASCII file, formatted for text attributes, declared format

"COORD" User-created coordinate file, declared format

"DEM" Digital Elevation Model format (U.S. Geological Survey)

"DGN" Microstation format (Intergraph Corporation)

"DLG" Digital Line Graph (U.S. Geological Survey)

"DTED" Digital Terrain Elevation Data (MIL-D-89020)

"DWG" AutoCAD Drawing format

"DXF" AutoCAD Drawing Exchange Format

"ERDAS" ERDAS image files (ERDAS Corporation)

"GRASS" Geographic Resources Analysis Support System

"IGDS" Interactive Graphic Design System format (Intergraph)

"SHP" ArcView Shapefile Format

"SDTS" Spatial Data Transfer Standard

"TIFF" Tagged Image File Format

Description:

Abstract: Description of the data in 200 words or less, including, what it is, geographic extent, source, lineage, update history, projection, scale, accuracy and any additional data of use to the person who may use the data.

Purpose: Intended use of the data, including in caveats about potential areas of misuse.

Supplemental Information: Any additional supplemental information not provided above. In 50 words or less.

Time Period of Content:

Time Period Information:

Range of Dates/Times:

Beginning Date: Date that the data set was initially created

Ending Date: Most recent update or publication date

Currentness Reference: Publication date, MM/DD/YY

CORPORATE GIS STANDARDS

METADATA

Status: The state of the data set.

Progress: "Complete", "In Work", "Planned"

Update Frequency: "Continually" "Daily" "Weekly" "Monthly" "Annually" "Unknown" "As needed" "Irregular" "None planned"

Spatial Domain:

Bounding Coordinates: The geographic areal domain of the data set.

West Bounding Coordinate: Western-most coordinate of the limit of coverage expressed in the CCOD standard Projection; Numeric x minimum

East Bounding Coordinate: Eastern-most coordinate of the limit of coverage expressed in the CCOD standard Projection; Numeric x maximum

North Bounding Coordinate: Northern-most coordinate of the limit of coverage expressed in the CCOD standard Projection; Numeric y maximum

South Bounding Coordinate: Southern-most coordinate of the limit of coverage expressed in the CCOD standard Projection; Numeric y minimum

Keywords: A keyword is a work or phrase that signifies the meaning or main ideas of a data set. They often are used as an index to the contents of a data set. The standards provide for four types of keywords: theme (the subject of the data set, such as streets, parcels, etc.), place (the geographic location of the data set, such as Globeville Neighborhood, City Park), stratum (the vertical location of the data set, such as bedrock, stratosphere), and temporal (time references for a data set, such as historical, contemporary).

Theme:

Theme Keyword Thesaurus: Not required

Theme Keyword: Streets

Theme Keyword: Transportation

Place:

Place Keyword Thesaurus: Not required

Theme Keyword: Globeville

Theme Keyword: Washington St.

Theme Keyword: Corridor

Stratum:

Place Keyword Thesaurus: Not required

Theme Keyword: Hydrography

Theme Keyword: Subsurface

Temporal:

Place Keyword Thesaurus: Not required

Theme Keyword: Historical

Access Constraints:

Restrictions and legal prerequisites for accessing the data set. This is determined by the agency. These include any access constraints applied to assure the protection of privacy or

CORPORATE GIS STANDARDS

METADATA

intellectual property, and any special restrictions or limitations on obtaining the data set. May include, but are not limited to "Intranet", "Internet", "All Users", "By Agency".

Use Constraints:

Restrictions and legal prerequisites for using the data set. This is determined by the agency. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the data set.

Point of Contact: Contact information for the individual in the purveying agency that is knowledgeable about, or responsible for the data set.

Contact Information:

Contact Person Primary:

Contact Person:

Contact Organization: CCOD agency data purveyor

Contact Position: CCOD position or working title.

Contact Address:

Address Type: Work mailing and physical address

Address:

State or Province: CO

Postal Code: 80202

Country: USA

Contact Voice Telephone:

Contact Facsimile Telephone:

Contact Electronic Mail Address:

Hours of Service: Normal hours of service.

Data Set Credit: Recognition of those (individuals, agencies, departments) who contributed to creation of the data set.

Security Information: Determined by the agency. Handling restrictions imposed on the data set because of homeland security, privacy, or other concerns.

Security Classification: "Top secret" "Secret" "Confidential" "Restricted" "Unclassified" "Sensitive" free text

Native Data Set Environment: A description of the data set in the producer agency's processing environment, including items such as the name of the software (including version), the computer operating system, file name (including host-, path-, and filenames), and the data set size.

Cross Reference: Information about other, related data sets that are likely to be of interest.

Data Quality Information: A general assessment of the quality of the data set.

Attribute Accuracy: An assessment of the accuracy of the identification of entities and assignment of attribute values in the data set. Accuracy assessment for measures on a continuous scale shall be performed using procedures similar to those used for positional

CORPORATE GIS STANDARDS

METADATA

accuracy (providing a numerical estimate of expected discrepancies). The report of a test of attribute accuracy shall include the data of the test and the dates of the materials used. In the case of different dates, the report shall describe the rates of change in the phenomena classified. Spatial variations in attribute accuracy may be reported in a quality overlay. Accuracy tests for categorical attributes may be performed by one of the following methods. All methods shall make reference to map scale in interpreting classifications.

Deductive Estimate Any estimate, even a guess based on experience, is permitted, The basis for the deduction shall be explained. Statements such as "good" or "poor" should be explained in as quantitative a manner as possible.

Tests based on Independent Samples. A misclassification matrix shall be reported as counts of sample units cross-tabulated by the categories of the sample and of the tested material. The sampling procedure and the location of sample units shall be described.

Tests Based on Polygon Overlay. A misclassification matrix shall be reported as areas. The relationship between the two maps shall be explained; as far as possible, the two sources should be independent and on should have higher accuracy.

Attribute Accuracy Report: An explanation of the accuracy of the identification of the entities and assignments of values in the data set and a description of the tests used.

Logical Consistency Report: A report on logical consistency shall describe the fidelity of relationships encoded in the data structure of the digital spatial data. The report shall detail the tests performed and the results of the tests.

Tests of Valid Values. Tests for permissible values may be applied to any data structure. Such a test can detect gross blunders, but it does not ensure all aspects of logical consistency.

General Tests for Graphic Data. A layer containing lines may be subjected to the following general questions:

- Do lines intersect only where intended?
- Are any lines entered twice?
- Are all areas completely described?
- Are there any overshoots or undershoots?
- Are any polygons too small, or any lines too close?

Different tests may be applied to address these questions, but the quality report shall contain a description of the tests applied or a reference to documentation of the software used. The report shall state whether all inconsistencies were corrected or it shall detail the remaining errors by case.

Completeness Report: The quality report shall include information about selection criteria, definitions used and other relevant mapping rules. For example, geometric thresholds such as minimum area or minimum width shall be reported. In encoding spatial entities, standard geocodes (such as described in the FIPS codes for States, counties, municipalities, and places) shall be employed if possible. Deviations from standard definitions and interpretations shall be described. The report on completeness shall describe the relationship between the objects represented and the abstract universe of all such objects. In particular, the report shall describe the exhaustiveness of a set of features. Exhaustiveness concerns spatial and taxonomic (attribute) properties, both of which can be tested. A test for spatial completeness can be obtained from topological tests for logical consistency. Tests for taxonomic completeness operate by comparison of a master list of geocodes to the codes actually

CORPORATE GIS STANDARDS

METADATA

appearing in the file. The procedures used for testing and the results shall be described in the quality report.

Positional Accuracy: An assessment of the accuracy of the positions of spatial objects.

Horizontal Positional Accuracy: An estimate of accuracy of the horizontal positions of the spatial objects.

Horizontal Positional Accuracy Report: An explanation of the accuracy of the horizontal coordinate measurements and a description of the tests used.

Vertical Positional Accuracy: An estimate of accuracy of the vertical positions of the spatial objects.

Vertical Positional Accuracy Report: An explanation of the accuracy of the vertical coordinate measurements and a description of the tests used.

Lineage: Information about the events, parameters, and source data, which constructed the data set, and information about the responsible parties.

Source Information: list of sources and a short discussion of the information contributed by each.

Source Citation: Reference for a source data set.

Citation Information:

Originator: Original source of the data.

Publication Date: Original publication date.

Title: Original publication title.

Geospatial Data Presentation Form: Original source format.

Source Scale Denominator:

Type of Source Media: "paper" "stable-base material" "microfiche" "microfilm", "audiocassette" "chart" "filmstrip" "transparency" "videocassette" "videodisc", "videotape" "physical model" "computer program" "disc" "cartridge tape", "magnetic tape" "online" "CD-ROM" "electronic bulletin board" "electronic mail system" free text

Source Time Period of Content: Time period(s) for which the source data set corresponds to the ground.

Time Period Information:

Range of Dates:

Beginning Date: MM/DD/YY

Ending Date: MM/DD/YY

Source Currentness Reference: The basis on which the source time period of content information of the source data set is determined.

Source Citation Abbreviation: Abbreviation for the source citation

Process Step:

Process Description: A description of the processes undertaken to create the data and any QC steps.

CORPORATE GIS STANDARDS

METADATA

Spatial Data Organization Information: The mechanism used to represent spatial information in the data set.

Indirect Spatial Reference: An indirect spatial reference is any way to describe a location without using coordinates. Indirect spatial reference methods usually use a geographic feature, such as a county, state, township or section of the Public Land Survey System, or a road, to uniquely identify a place. The reference may use the name of the feature) for example "Westmoreland County") or a code that identifies the feature (such as a county FIPS code). Other examples of indirect spatial references include street addresses, linear reference systems, and River Reach codes.

Direct Spatial Reference Method: "Point" "Vector" "Raster"

Spatial Reference Information: The description of the reference frame for, and the means to encode, coordinates in the data set.

Horizontal Coordinate System Definition: The reference frame or system from which linear or angular quantities are measured and assigned to the position that a point occupies.

Coordinate system name:

Projected coordinate system name:

NAD_1983_HARN_StatePlane_Colorado_Central_FIPS_0502_Feet

Geographic coordinate system name: GCS_North_American_1983_HARN

Map projection:

Map projection name: Lambert Conformal Conic

Lambert conformal conic:

Standard parallel: 38.450000

Standard parallel: 39.750000

Longitude of central meridian: -105.500000

Latitude of projection origin: 37.833333

False easting: 3000000.000316

False northing: 999999.999996

Planar coordinate information:

Planar coordinate encoding method: coordinate pair

Coordinate representation:

Abscissa resolution: 0.000410

Ordinate resolution: 0.000410

Planar distance units: survey feet

Geodetic model:

Horizontal datum name: North American Datum of 1983/1992 (HPGN)*

Ellipsoid name: Geodetic Reference System 80

Semi-major axis: 6378137.000000

Denominator of flattening ratio: 298.257222

Vertical Coordinate System Definition: The reference frame or system from which vertical distances (altitudes or depths) are measured.

Altitude System Definition: The reference frame or system from which altitudes (elevations) are measured.

CORPORATE GIS STANDARDS

METADATA

Altitude Datum Name: The identification given to the surface taken as the surface of reference from which altitudes are measured.

Altitude Resolution: The minimum distance possible between two adjacent altitude values, expressed in Altitude Distance Units of measure.

Altitude Distance Units: "meters" "feet" free text

Entity and Attribute Information: Details about the information content of the data set, including the entity types, their attributes, and the domains from which attribute values may be assigned.

Detailed Description: Description of the entities, attributes, attribute values, and related characteristics encoded in the data set.

Entity Type: The definition and description of a set into which similar entity instances are classified.

Entity Type Label (May Repeat for many entities): The name of the entity type. Example: EOP

Entity Type Definition: The description of the entity type. Example: line features representing the road edge of pavement

Entity Type Definition Source: The authority of the definition. This may be the individual agency.

Attribute: A defined characteristic of an entity.

Attribute Label (May Repeat for many attributes): The name of the attribute. Example: Type

Attribute Definition: The description of the attribute. Example: Identifying label to describe the type or road surface between the two road edges

Attribute Definition Source: The authority of the attribute.

Attribute Domain Values: The valid values that can be assigned for an attribute. Example: Alley

Attribute Domain Values Definition: Definition of the previous domain value. Example: alley edge from original ASI data conversion

Attribute Domain Values: alley2

Attribute Domain Values Definition: alley edge from plat/plan drawing

Look Up Tables: Any associated lookup tables that describe attribute codes.

Overview Description: summary of, and citation to detailed description of, the information content of the dataset.

Entity and Attribute Overview: Detailed summary of the information contained in a dataset. Example: The Road Edge of Pavement map layer contains line and area features that represent road surface areas and associated edges.

Metadata Reference Information

Metadata Date: Metadata creation date MM/DD/YY

Metadata Standard Name: FGDC Content Standards for Digital Geospatial Metadata

Flight Date: Flight date for raster data.

Control Source: Control sources for flight control points.

CORPORATE GIS STANDARDS

METADATA

Location (Cartographic): The descriptive location that the map covers. For example, "Northwest Denver".

Data Review Committee Members (Analysis): Agency subject matter experts (SMEs) or committee members providing QA/QC.

Final GIS Data (Analysis): The file name of the final GIS dataset created from the analysis.

Definitions and Use of Datasets (Analysis): A definition of the intended use of the dataset.

GIS Dataset Relationship and Links (Document Imaging): A description of the relationship and the fields used as links to the EDMS.

EDMS System (Document Imaging): The EDMS System, i.e. the software, that the data is intended to be used with.

EDMS Access Points (Document Imaging): The methods or interfaces available to access the EDMS. May be through API, or backend through SQL, etc.

Layers (Project): A list of the layers included in the project.

Format (Project): The format of the project: "APR", "MXD", or "AEP"

Version (Project): The version of the software used to create the project.

Extension or Add-ins (Project): Any extensions or add-ins required to run the project. Please turn off any unnecessary extensions or add-ins.

Purpose (Project): The intended purpose of the project.

Symbology (Project): The name of any symbology used for the project.

CORPORATE GIS STANDARDS

METADATA

APPENDIX – Alphabetical Metadata Entry Guide

Abscissa resolution: 0.000410

Abstract: Description of the data in 200 words or less, including, what it is, geographic extent, source, lineage, update history, projection, scale, accuracy and any additional data of use to the person who may use the data.

Access Constraints: Restrictions and legal prerequisites for accessing the data set. This is determined by the agency. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the data set. May include, but are not limited to "Intranet", "Internet", "All Users", "By Agency".

Address Type: Work mailing and physical address

Altitude Datum Name: The identification given to the surface taken as the surface of reference from which altitudes are measured.

Altitude Distance Units: "meters" "feet" free text

Altitude Resolution: The minimum distance possible between two adjacent altitude values, expressed in Altitude Distance Units of measure.

Altitude System Definition: The reference frame or system from which altitudes (elevations) are measured.

Attribute: A defined characteristic of an entity.

Attribute Accuracy: An assessment of the accuracy of the identification of entities and assignment of attribute values in the data set. Accuracy assessment for measures on a continuous scale shall be performed using procedures similar to those used for positional accuracy (providing a numerical estimate of expected discrepancies). The report of a test of attribute accuracy shall include the data of the test and the dates of the materials used. In the case of different dates, the report shall describe the rates of change in the phenomena classified. Spatial variations in attribute accuracy may be reported in a quality overlay. Accuracy tests for categorical attributes may be performed by one of the following methods. All methods shall make reference to map scale in interpreting classifications.

Attribute Accuracy Report: An explanation of the accuracy of the identification of the entities and assignments of values in the data set and a description of the tests used.

Attribute Definition: The description of the attribute. Example: Identifying label to describe the type or road surface between the two road edges

Attribute Definition Source: The authority of the attribute.

Attribute Domain Values: The valid values that can be assigned for an attribute. Example: Alley

Attribute Domain Values Definition: Definition of the previous domain value. Example: alley edge from original ASI data conversion

Attribute Domain Values: alley2

CORPORATE GIS STANDARDS

METADATA

Attribute Domain Values Definition: alley edge from plat/plan drawing

Attribute Label (May Repeat for many attributes): The name of the attribute. Example: Type

Beginning Date: Date that the data set was initially created

Bounding Coordinates: The geographic areal domain of the data set.

Completeness Report: The quality report shall include information about selection criteria, definitions used and other relevant mapping rules. For example, geometric thresholds such as minimum area or minimum width shall be reported. In encoding spatial entities, standard geocodes (such as described in the FIPS codes for States, counties, municipalities, and places) shall be employed if possible. Deviations from standard definitions and interpretations shall be described. The report on completeness shall describe the relationship between the objects represented and the abstract universe of all such objects. In particular, the report shall describe the exhaustiveness of a set of features. Exhaustiveness concerns spatial and taxonomic (attribute) properties, both of which can be tested. A test for spatial completeness can be obtained from topological tests for logical consistency. Tests for taxonomic completeness operate by comparison of a master list of geocodes to the codes actually appearing in the file. The procedures used for testing and the results shall be described in the quality report.

Contact Organization: CCOD agency data purveyor

Contact Person: Agency contact

Contact Position: CCOD position or working title.

Control Source: Control sources for flight control points

Coordinate system name: State Plane

Country: USA

Cross Reference: Information about other, related data sets that are likely to be of interest.

Currentness Reference: Publication date, MM/DD/YY

Data Quality Information: A general assessment of the quality of the data set.

Data Review Committee Members (Analysis): Agency subject matter experts (SMEs) or committee members providing QA/QC.

Data Set Credit: Recognition of those (individuals, agencies, departments) who contributed to creation of the data set.

Deductive Estimate Any estimate, even a guess based on experience, is permitted, The basis for the deduction shall be explained. Statements such as "good" or "poor" should be explained in as quantitative a manner as possible.

Definitions and Use of Datasets (Analysis): A definition of the intended use of the dataset.

Denominator of flattening ratio: 298.257222

CORPORATE GIS STANDARDS

METADATA

Detailed Description: Description of the entities, attributes, attribute values, and related characteristics encoded in the data set.

Direct Spatial Reference Method: "Point" "Vector" "Raster"

East Bounding Coordinate: Eastern-most coordinate of the limit of coverage expressed in the CCOD standard Projection; Numeric x maximum

EDMS Access Points (Document Imaging): The methods or interfaces available to access the EDMS. May be through API, or backend through SQL, etc.

EDMS System (Document Imaging): The EDMS System, i.e. the software, that the data is intended to be used with.

Ellipsoid name: Geodetic Reference System 80

Ending Date: Most recent update or publication date

Entity and Attribute Overview: Detailed summary of the information contained in a dataset. Example: The Road Edge of Pavement map layer contains line and area features that represent road surface areas and associated edges.

Entity and Attribute Information: Details about the information content of the data set, including the entity types, their attributes, and the domains from which attribute values may be assigned.

Entity Type: The definition and description of a set into which similar entity instances are classified.

Entity Type Label (May Repeat for many entities): The name of the entity type. Example: EOP

Entity Type Definition: The description of the entity type. Example: line features representing the road edge of pavement

Entity Type Definition Source: The authority of the definition. This may be the individual agency.

Extension or Add-ins (Project): Any extensions or add-ins required to run the project. Please turn off any unnecessary extensions or add-ins.

False easting: 3000000.000316

False northing: 999999.999996

Final GIS Data (Analysis): The file name of the final GIS dataset created from the analysis.

Flight Date: Flight date for raster data.

Format: What format the data is in.

"ARCE" ARC/INFO Export format

"ARCG" ARC/INFO Generate format

"ARCGDB" ARCGIS Geodatabase with URL

"ASCII" ASCII file, formatted for text attributes, declared format

CORPORATE GIS STANDARDS

METADATA

"COORD" User-created coordinate file, declared format
"DEM" Digital Elevation Model format (U.S. Geological Survey)
"DGN" Microstation format (Intergraph Corporation)
"DLG" Digital Line Graph (U.S. Geological Survey)
"DTED" Digital Terrain Elevation Data (MIL-D-89020)
"DWG" AutoCAD Drawing format
"DXF" AutoCAD Drawing Exchange Format
"ERDAS" ERDAS image files (ERDAS Corporation)
"GRASS" Geographic Resources Analysis Support System
"IGDS" Interactive Graphic Design System format (Intergraph
"SHP" ArcView Shapefile Format
"SDTS" Spatial Data Transfer Standard
"TIFF" Tagged Image File Format

Format (Project): The format of the project: "APR", "MXD", or "AEP"

General Tests for Graphic Data. A layer containing lines may be subjected to the following general questions:

- Do lines intersect only where intended?
- Are any lines entered twice?
- Are all areas completely described?
- Are there any overshoots or undershoots?
- Are any polygons too small, or any lines too close?

Different tests may be applied to address these questions, but the quality report shall contain a description of the tests applied or a reference to documentation of the software used. The report shall state whether all inconsistencies were corrected or it shall detail the remaining errors by case.

Geographic coordinate system name: GCS_North_American_1983_HARN

Geospatial Data Presentation Form: "Vector digital data", "Raster digital data"

GIS Dataset Relationship and Links (Document Imaging): A description of the relationship and the fields used as links to the EDMS.

Horizontal Coordinate System Definition: The reference frame or system from which linear or angular quantities are measured and assigned to the position that a point occupies.

Horizontal datum name: North American Datum of 1983/1992 (HPGN)*

Horizontal Positional Accuracy: An estimate of accuracy of the horizontal positions of the spatial objects.

Horizontal Positional Accuracy Report: An explanation of the accuracy of the horizontal coordinate measurements and a description of the tests used.

Hours of Service: Normal hours of service.

Indirect Spatial Reference: An indirect spatial reference is any way to describe a location without using coordinates. Indirect spatial reference methods usually use a geographic feature, such as a county, state, township or section of the Public Land Survey System, or a road, to uniquely identify a place. The reference may use the name of the feature) for example "Westmoreland County") or a code that identifies the feature (such as a county FIPS code). Other

CORPORATE GIS STANDARDS

METADATA

examples of indirect spatial references include street addresses, linear reference systems, and River Reach codes.

Keywords: A keyword is a word or phrase that signifies the meaning or main ideas of a data set. They often are used as an index to the contents of a data set. The standards provide for four types of keywords: theme (the subject of the data set, such as streets, parcels, etc.), place (the geographic location of the data set, such as Globeville Neighborhood, City Park), stratum (the vertical location of the data set, such as bedrock, stratosphere), and temporal (time references for a data set, such as historical, contemporary).

Latitude of projection origin: 37.833333

Layers (Project): A list of the layers included in the project.

Lineage: Information about the events, parameters, and source data, which constructed the data set, and information about the responsible parties.

Location (Cartographic): The descriptive location that the map covers. For example, "Northwest Denver".

Logical Consistency Report: A report on logical consistency shall describe the fidelity of relationships encoded in the data structure of the digital spatial data. The report shall detail the tests performed and the results of the tests.

Longitude of central meridian: -105.500000

Look Up Tables: Any associated lookup tables that describe attribute codes.

Map projection name: Lambert Conformal Conic

Metadata Date: Metadata creation date MM/DD/YY

Metadata Standard Name: FGDC Content Standards for Digital Geospatial Metadata

Native Data Set Environment: A description of the data set in the producer agency's processing environment, including items such as the name of the software (including version), the computer operating system, file name (including host-, path-, and filenames), and the data set size.

North Bounding Coordinate: Northern-most coordinate of the limit of coverage expressed in the CCOD standard Projection; Numeric y maximum

Online Linkage: Leave blank

Ordinate resolution: 0.000410

Originator: Original source of the data, or CCOD Department or Agency submitting the data. Please spell out this information (no acronyms)

Overview Description: summary of, and citation to detailed description of, the information content of the dataset.

Place Keyword Thesaurus: Not required, examples: Globeville, Washington St., Corridor

CORPORATE GIS STANDARDS

METADATA

Planar coordinate encoding method: coordinate pair

Planar distance units: survey feet

Point of Contact: Contact information for the individual in the purveying agency that is knowledgeable about, or responsible for the data set.

Positional Accuracy: An assessment of the accuracy of the positions of spatial objects.

Postal Code: 80202

Process Description: A description of the processes undertaken to create the data and any QC steps.

Progress: "Complete", "In Work", "Planned"

Projected coordinate system name:

NAD_1983_HARN_StatePlane_Colorado_Central_FIPS_0502_Feet

Publication Date: MM/DD/YY, Original publication date.

Purpose: Intended use of the data, including in caveats about potential areas of misuse.

Purpose (Project): The intended purpose of the project.

Security Classification: "Top secret" "Secret" "Confidential" "Restricted" "Unclassified" "Sensitive" free text

Security Information: Determined by the agency. Handling restrictions imposed on the data set because of homeland security, privacy, or other concerns.

Semi-major axis: 6378137.000000

Source Citation: Reference for a source data set.

Source Citation Abbreviation: Abbreviation for the source citation

Source Currentness Reference: The basis on which the source time period of content information of the source data set is determined.

Source Information: list of sources and a short discussion of the information contributed by each.

Source Time Period of Content: Time period(s) for which the source data set corresponds to the ground.

South Bounding Coordinate: Southern-most coordinate of the limit of coverage expressed in the CCOD standard Projection; Numeric y minimum

Spatial Data Organization Information: The mechanism used to represent spatial information in the data set.

Spatial Reference Information: The description of the reference frame for, and the means to encode, coordinates in the data set.

CORPORATE GIS STANDARDS

METADATA

Standard parallel: 38.450000

Standard parallel: 39.750000

State or Province: CO

Status: The state of the data set.

Supplemental Information: Any additional supplemental information not provided above. In 50 words or less.

Symbology (Project): The name of any symbology used for the project.

Tests based on Independent Samples. A misclassification matrix shall be reported as counts of sample units cross-tabulated by the categories of the sample and of the tested material. The sampling procedure and the location of sample units shall be described.

Tests Based on Polygon Overlay. A misclassification matrix shall be reported as areas. The relationship between the two maps shall be explained; as far as possible, the two sources should be independent and on should have higher accuracy.

Tests of Valid Values. Tests for permissible values may be applied to any data structure. Such a test can detect gross blunders, but it does not ensure all aspects of logical consistency.

Theme Keyword Thesaurus: Not required, examples, Streets, Transportation

Title: Brief, descriptive title of the data. Avoid using the layer name, or Original publication title.

Type of Source Media: "paper" "stable-base material" "microfiche" "microfilm", "audiocassette" "chart" "filmstrip" "transparency" "videocassette" "videodisc", "videotape" "physical model" "computer program" "disc" "cartridge tape", "magnetic tape" "online" "CD-ROM" "electronic bulletin board" "electronic mail system" free text

Update Frequency: "Continually" "Daily" "Weekly" "Monthly" "Annually" "Unknown" "As needed" "Irregular" "None planned"

Use Constraints: Restrictions and legal prerequisites for using the data set. This is determined by the agency. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the data set.

Version (Project): The version of the software used to create the project.

Vertical Coordinate System Definition: The reference frame or system from which vertical distances (altitudes or depths) are measured.

Vertical Positional Accuracy: An estimate of accuracy of the vertical positions of the spatial objects.

Vertical Positional Accuracy Report: An explanation of the accuracy of the vertical coordinate measurements and a description of the tests used.

CORPORATE GIS STANDARDS

METADATA

West Bounding Coordinate: Western-most coordinate of the limit of coverage expressed in the CCOD standard Projection; Numeric x minimum