Calaveras County
Spatial Data Standards

Introduction:
This document describes the Spatial Data Standards for Calaveras County's GIS Project. The following standards were developed through the Spatial Data Standards Workgroup of the GIS Technical Committee. Standards included in this document are:

- Spatial Coordinate System and Projection
- Spatial Accuracy
- Spatial Data Storage
- GIS Metadata Format

Spatial Coordinate System and Projection:
Calaveras County has decided to adopt the coordinate system and projection standards for counties in the USA. For Calaveras County this will be the State Plane Coordinate System, NAD 83, the California Zone 3 projection, in Feet as follows.

Projection Information:
Projection: Lambert Conformal Conic
First Standard Parallel: 37.066667
Second Standard Parallel: 38.433333
Longitude of Central Meridian:-120.500000
Latitude of Projection Origin: 36.500000
False Easting: 6561666.666667
False Northing: 1640416.666667
Coordinate System: State Plane
Units: Feet
Datum: NAD83
Fipszone: CA III
Zone: 0403

Spatial Accuracy:
The Calaveras County Spatial Accuracy Standard will be divided into three categories based on expected use of the data as follows.

- **Local** Standard is 1: 12,000
- **General** Standard is 1:24,000
- **County** Standard is 1:100,000

Each Spatial data layer will be assigned one of these standards prior to being entered into the Spatial Data Server, CCGGIS.

What do these standards mean?
These “accuracy” standards are intended to set a map scale at which the data can be assumed to be “accurate”. A user can assume that any line or point on the map can be trusted to be a true representation of that feature in space given the know error in the capture method. For

instance, if GPS locations are collected for some point features for which known error is +/-3 meters, you can say that they are accurate at the local standard because when viewed at a 1:12,000 scale a point would not appear to move within that range of error (+/- 3 meters). Similarly, if you had data that you new was accurate to +/- 100 feet, you could say that it is accurate at the County scale because at a 1:100,000 map scale, a 100 foot variation in a features location would not be detectable.

Why did we choose these standards?

- We chose the **Local** standard because at that map scale features collected with a Trimble GeoExplore 3 (the county standard GPS unit), after post processing, would maintain their spatial integrity.
- We chose the **General** Standard because it is the USGS 7 1/2 minute quadrangle map scale, which is a widely used standard.
- We chose the **County** standard because it is suitable for countywide data layers, and most of the published data the county would acquire should fall within this standard.

Spatial Data Storage:

The Calaveras County Spatial Data Storage Standard will be based on the Tri-Services Spatial Data Standard (TSSDS), developed by the CADD/GIS Technology Center (CGDC). The CGTC has been endorsed as the Federal Geographic Data Committee (FGDC) Facilities, Infrastructure, and Environmental Working Group. This standard is becoming widely implemented in state and local government agencies.

The TSSDS is based on a three-tiered Entity system. The broadest Entity is the Set, which contains the Entity Classes, which in turn contains the Entity Types, which include the data set of interest.

Examples of Entity Sets would be:
Transportation, Boundary, Cadastral, Environmental, Building, Planning, etc.
Examples of Entity Classes for Transportation would be:
Vehicle, Pedestrian, Air, RailRoad, etc.
Examples of Entity Types for the Vehicle Class of the Transportation Set would be:
Road Centerline, Bridges, Signage, Pavement Types, etc

The actual data layer (coverage or shapefile) would be named using abbreviations of the Entity Set, Class, and Type to create an eight character file name. The Format would be

SSCCCTTT.cov for coverages

SSCCCTTT_x.shp for shapefiles

Where
S = Entity Set
C = Entity Class
T = Entity Type
x = a feature type designator for shapefiles (x-point; l-line; p-polygon)
cov = ArcInfo coverage file extension.
shp = ArcView shapefile file extension.

So, the Road Centerline layer would have the names (coverage and shapefile) as follows:

Coverage: trvehrcl.cov
Shapefile: trvehrcl_l.shp

A detailed Spatial Data Catalogue will be maintained to facilitate finding data layers. Here is an example for the Transportation Entity Set:

Entity Set Directory	Entity Class Directory	Entity Type Directory	Shapefile Name	Coverage Name	Image Name	Access Constraints (yes or no)	MetaData File
Transportation	Vehicle	Road Centerline	trvehrcl _l	trvehrcl		no	
Transportation	AirField Facility	AirField Area	traflafd _p	traflafd		no	
Transportation	Air	Emergency LandingZone	trairelz _x	trairelz		no	
Transportation	Vehicle	Bridges	trvehbrd_l	trvehbrd		no	

GIS Metadata Format:

GIS metadata is summarized in the form attached. An Access database is being developed to store the metadata, and Active Server Pages will be used to develop data entry and search forms for ease of use. The forms will have drop down lists wherever possible to make entry of metadata as painless and accurate as possible. A more detailed guide to using the metadata form will be developed once the final design of the database and entry forms are complete.