

GUIDELINES FOR THE SUBMISSION OF DIGITAL MAPS

Introduction

The <<jurisdiction>> maintains a Geographic Information System (GIS) for use by many departments for a variety of public-service uses. An important public service that will be tied to the maintenance of the GIS is the dispatching of emergency first responders (such as police, fire, and paramedics).

We rely on public safety agencies for keeping our communities safe. Planning and preparedness are required to help reduce the loss of life and/or property from natural and human-caused emergencies. Because all emergencies have a geographic component (a location), a well-maintained GIS can help public safety agencies by providing first responders with the best information to make optimized safety decisions under stressful conditions.

In addition, GIS also assists with other important public-service uses, such as current and long range planning, and public works facility and asset inventory and maintenance.

To maintain the efficiency and effectiveness of these public safety/public service activities, the <<jurisdiction>> requires tentative maps, final maps, and improvement plans to be submitted in digital format so that additions and updates to land records and infrastructure in the GIS database are accomplished as quickly and efficiently as possible. This requirement is in addition to hardcopy submission requirements. The intent of these standards is to enable the required hardcopy and digital submission to be produced from the same digital data without significant modification. (Those modifications include a global specification of a 'CONTINUOUS' line type, and in some cases the aggregating/disaggregating of layer contents to conform to the standards' layer listing (See Table A).)

Additionally, the submitted digital data may be used for computational purposes in reviewing the map, maintaining digital land bases, or used in a document management system. **A disclaimer of liability will be placed on all digital files and file copies. The recorded hardcopy will continue to be the official document.**

Format Requirements

The format for digital submission of specified plans and maps shall be one of the following:

- AutoCad DWG (Release 2000 or newer)
- DXF
- ESRI shapefile
- ESRI personal geodatabase
- XML

Submission Requirements

1. The model space of the submitted drawings should contain the entire project (showing project boundary, lot lines, rights-of-way, improvements, etc.), and it should not be divided into sheets (used for plotting purposes.)
2. No externally referenced data is permitted. All data referenced is to be included in the file submitted.
3. No lines are to be constructed with deliberate gaps.
4. Maps will be oriented to geographic north.
5. Annotation layers will be used to provide attribute data on each object where text is requested. Text insertion points are to be middle justified. Where text relates to an area, the text insertion point must lie within enclosed area boundary.
6. Blocks will not be permitted as a valid data element for point feature symbology.
7. Units will be decimal units.
8. Scale will be 1:1

Data Layer Requirements

Based on the requirements of the specific project, the submitted digital file will contain a certain number of layers from Table A. The entities in the named layers in Table A are assumed Proposed (to be done by this drawing). Layers containing other than proposed entities shall add to the layer name “-existing” (to remain), “-remove” (existing to be removed), “-abandon in place” (applied mostly to subsurface structures), “-Old” (centerlines of record etc.), and/or “-Future” (alignments/facilities not done by this set of drawings). In addition to the digital file, the applicant will also submit an edited version of the attached spreadsheet (see Appendix A – Example of LayerNamesCrossTab.xls) which lists the Applicants’ internal layer names with the corresponding layer name in the agency’s standard. This will result in a ‘translation table’ being created, so that the agency can extract and name file layers for inclusion into the agency’s GIS database.

TABLE A.

Note: All other data not required by the GIS, but useful to the enterprise, can be transmitted on other logical data layers.

LAYER	DATA OR FEATURE	DATA ELEMENT
BLDACCESS	Building Access Locations	Point
BLOFF	Blow-offs	Point
BLOFFTXT	Blow-offs Text	Annotation
BNDTXT	Boundary text, survey calls, etc.	Annotation
CL	Street Centerlines	Continuous Line
CPLINE	Community Plan Boundary Line	Continuous Line
CPTEXT	Community Plan Designation	Annotation
CURBGUTTER	Curbs and Gutters	Continuous Line
DECOMGRANITE	Outline of Decomposed Granite	Continuous Line
DETBASIN	Proposed Detention Basin	Continuous Line
DRIVEWY	Driveway Locations	Continuous Line
ELEV	Elevator Locations	Point
ENGRDS	Engineered Roads (curb-to-curb)	Continuous Line
EXESMNT	Existing easements	Continuous Line
FACILITY	Laundry, Security, Hazardous Materials Storage, Other Buildings	Point
FENCE	Fences	Continuous Line
FIRECON	Fire Dept. Connection to Water Tank	Point
GATE	Gates (locked & unlocked)	Point
GOLF	Golf Course Features (greens, fairways, tees, clubhouse)	Point
GPLINE	General Plan Boundary Line	Continuous Line
GPS-POINT	County Control Points	Point
GPS-TXT	Control Point description	Annotation
GPTXT	General Plan Designation	Annotation
HARDSURFACE	Outline of Hard Surface Areas not Composed of Decomposed Granite	Continuous Line
HYDRANT	Fire Hydrants, Standpipes	Point
KNOX	Knox Box Locations	Point
LOTLINE	Lot Lines	Continuous Line
LOTNUM	Lot Numbers	Annotation
MEDIAN	Outline of Medians	Continuous Line
METEBNDS	Traverse information	Annotation
MONTEXT	Monument Description	Annotation
MONUMENT	Monument Point	Point
NEWBLDGFP	New Building Footprints	Continuous Line
NEWESMENT	New Road & Open Space Easements (private & public)	Continuous Line
NEWESTXT	New Easement descriptions	Annotation
PARKING	Parking (Curb-to-Curb)	Continuous Line
PEDRAMP	Pedestrian Ramp	Continuous Line
PROPCONT	Proposed Contours	Continuous Line
ROW	Street right-of-way	Continuous Line
SALAT	Sewer Lateral	Continuous Line
SALIFT	Sanitary Sewer Lift Station	Point
SALIFTTXT	Sanitary Sewer Lift Station Text	Annotation
SAMH	Sanitary Sewer Manhole	Point
SAMHTXT	Sanitary Sewer Manhole Text	Annotation
SAPIPE	Sanitary Sewer Pipe	Continuous Line
SAPIPETXT	Sanitary Sewer Pipe Text	Annotation
SETBACK	Building Setback Line	Continuous Line
SHRUB	Outline of Shrub Areas	Continuous Line
SHUTOFF	Utility Shutoffs (natural gas, propane, electrical, water, etc.)	Point
SIDEWALK	Outline of Sidewalks	Continuous Line
SIGN	Street Sign	Point
SITENUM	Address Numbers	Point
STAIRS	Stairwell Locations	Point
STARTPT	Starting Point	Point
STBMP	Storm Water BMP	Continuous Line/Point
STMH	Manholes and Junction Boxes	Point
STMHTXT	Manholes and Junction Box Text	Annotation
STPIPE	Storm Pipes and Culverts	Continuous Line
STPIPTXT	Culvert and Pipe Text	Annotation
STRLIT	Street Light	Point
STRNAME	Street Name Text	Annotation
SUBBOUND	Subdivision Boundary Lines	Continuous Line
TANK	Water Tank	Point
TURF	Outline of Turf or Grass Areas	Continuous Line
UNITPTS	Unit Locations	Point
WALINE	Water Line	Continuous Line
WALINETXT	Water Line Text	Annotation
WATBOD	Water Bodies (ponds, pool, spa)	Continuous Line
WAVAL	Water Valve	Point
WAVALTXT	Water Valve Text	Annotation
ZONELINE	Zoning Boundary Line	Continuous Line
ZONETXT	Zoning Designation	Annotation

Digital File Submission Procedure

The digital file will be submitted by CD, DVD, or via ftp upload to the following addresses:

<< Agency Mailing Address>>

<<Agency ftp site, including username and password>>

File Naming Conventions

Filenames for digital submission shall be appropriately assigned based on the alphanumeric project numbers assigned at the time the application is received by the <jurisdiction> (**Insert Example:** *Project.dxf* or *Project.gdb*). For projects with multiple exhibits, i.e., General Plan Amendment and Rezone, each file shall be named with the appropriate abbreviations (**Example:** *GP_Project.dxf* or *RZ_Project.gdb*). The following is a listing of standard County abbreviations. Other naming conventions may be required by the local jurisdiction. Contact the local jurisdiction for specific naming conventions:

TM = Tentative Map
TPM = Tentative Parcel Map
SM = Final Subdivision Map
PM = Final Parcel Map
IP = Improvement Plan
GPA = General Plan Amendment
RZ = Rezone

Media Requirements

The following methods of data transfer are considered acceptable for digital submission of data:

1. CD or DVD media
2. Via email (subject to local agency approval)
3. File Transfer Protocol (FTP) (if available)

Explanatory Data

All digital data will require an **accompanying metadata text file**. The file will be in ASCII file (.txt extension) format using the same naming convention as the digital data file being submitted. This file will contain the following information:

Project Name:
File Name:
Date:
Contact Name:
Contact Phone:
Contact Email:
Master Parcel Number and adjacent current parcel numbers (APN):
Layer name translation table:
Epoch:
Control point order accuracy:
Vertical datum referenced:

Data Integrity Requirements

The following requirements pertain to the mathematical integrity of the geometric data. This section is considered optional for tentative maps (*items 1-7 are applicable to final maps; 4-7 are applicable to engineering plans*).

1. The maximum error allowable between theoretically coincident points will be .03 feet (9mm).
2. The maximum error allowable between points on a line and the line will be .02 feet (6mm).
3. The difference between distances calculated by the inverse between the coordinates of points in the digital submission and the annotated distance shall not exceed .01 feet (3mm).
4. The difference in seconds between the rounded value of the inverse coordinates of points in the digital submission and the annotated bearings shall not exceed +/- one second.
5. Logical areas will be transmitted as a closed figure. Line end nodes will be snapped to adjoining line node to ensure this requirement.
6. Annotation submitted digitally will be identical to annotation submitted on the hardcopy maps. Draw lines will represent their annotated values.
7. When displaying coordinates, the entire number to the fifth decimal place for the coordinate will be shown (i.e., no constants will be applied).

Horizontal Control

1. The County of San Diego maintains horizontal control systems of varying accuracy. For the purposes of this standard, the County's California Spatial Reference Network (Real Time Network) or first order or better control points will be used.

2. Subdivision Mapping

a) The project boundary shall be tied to the County of San Diego's horizontal control system. The Licensed Surveyor or Civil Engineer authorized to practice surveying shall be required to tie the Project Boundary to a minimum of two such control monuments in accordance with the County of San Diego's Subdivision Regulations.

b) All mapping control shall conform to the provisions of the California Resources Code, Section 8801 et seq. If coordinates are shown, 1) they shall be based on the California State Plane Coordinate System, Zone 6, NAD83, in US survey feet, and 2) the map shall call out the order and show the epoch of the control points used in the survey. If a Geodetic Grid factor is shown, the appropriate elevation shall also be stated for the conversion point.

3. Engineer Plans and GIS Maps

The Licensed Surveyor or Civil Engineer shall be required to tie the Project to a minimum of two County of San Diego first order or better control monuments. Coordinates of the control points shall be shown and, 1) they shall be based on the California State Plane Coordinate System, Zone 6, NAD83, in US survey feet, and 2) shall call the epoch of the control points used in the survey.

Review of Digital Data

All digital data will be reviewed for the following criteria:

1. Correct layering.
2. No duplicate linear or point elements.
3. Closure of the geometry of all logical areas.
4. Verification that digital and hardcopy maps are consistent.
5. Correct geographical position (i.e., correct coordinate values for final submissions).

The submitting party will be responsible for correcting any errors and delivering the new correct digital file prior to approval by the <<jurisdiction>>.

APPENDIX A – Example of LayerNamesCrossTab.xls

This table provides a translation of layer naming by the submitting entity to the standard layer naming convention.

STANDARD LAYER NAME	SUBMITTED LAYER NAME
....	
....	
LOTLINE	198Lot
LOTNUM	198Lnum
MEDIAN	198med
METEBNDS	survtext
MONTEXT	montext
MONUMENT	surv-x
NEWBLDGFP	bld-out
NEWESMENT	n-ease
....	
....	

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APPENDIX B – Data Layer and Map Submittal Type

The following table lists the layer contents of the required files for each type of map submission.

LAYER	DATA OR FEATURE	Fire Pre-plan	Tent. Maps	GP/ZC Map	Imprv Plan	Final / Pcl Maps
BLDACCESS	Building Access Locations	X			X	
BLOFF	Blow-offs		X		X	
BLOFFTXT	Blow-offs Text		X		X	
BNDTXT	Boundary text, survey calls, etc.		X			X
CL	Street Centerlines		X		X	X
CPLINE	Community Plan Boundary Line			X		
CPTXT	Community Plan Designation			X		
CURBGUTTER	Curbs and Gutters		X		X	
DECOMGRANITE	Outline of Decomposed Granite		X		X	
DETBASIN	Proposed Detention Basin		X		X	X
DRIVEWY	Driveway Locations	X	X		X	
ELEV	Elevator Locations	X			X	
ENGRDS	Engineered Roads (curb-to-curb)	X	X		X	
EXESMNT	Existing easements		X		X	X
FACILITY	Laundry, Security, Hazardous Materials Storage, Other Buildings	X				
FENCE	Fences	X			X	
FIRECON	Fire Dept. Connection to Water Tank	X			X	
GATE	Gates (locked & unlocked)	X				
GOLF	Golf Course Features (greens, fairways, tees, clubhouse)	X			X	
GPLINE	General Plan Boundary Line			X		
GPS-POINT	County Control Points		X		X	X
GPS-TXT	Control Point description		X		X	X
GPTXT	General Plan Designation			X	X	
HARDSURFACE	Outline of Hard Surface Areas not Composed of Decomposed Granite		X		X	
HYDRANT	Fire Hydrants, Standpipes	X			X	
KNOX	Knox Box Locations	X			X	
LOTLINE	Lot Lines	X	X	X	X	X
LOTNUM	Lot Numbers		X	X	X	X
MEDIAN	Outline of Medians	X	X		X	
METEBNDS	Traverse information		X		X	X
MONTEXT	Monument Description		X		X	X

MONUMENT	Monument Point		X		X	X
NEWBLDGFP	New Building Footprints	X	X		X	X
NEWESMENT	New Road & Open Space Easements (private & public)		X		X	X
NEWESTXT	New Easement descriptions		X		X	X
PARKING	Parking (Curb-to-Curb)	X	X		X	X
PEDRAMP	Pedestrian Ramp	X	X		X	
PROPCONT	Proposed Contours		X			
ROW	Street right-of-way	X	X		X	X
SALAT	Sewer Lateral		X		X	
SALIFT	Sanitary Sewer Lift Station		X		X	
SALIFTTXT	Sanitary Sewer Lift Station Text		X		X	
SAMH	Sanitary Sewer Manhole		X		X	
SAMHTXT	Sanitary Sewer Manhole Text		X		X	
SAPIPE	Sanitary Sewer Pipe		X		X	
SAPIPETXT	Sanitary Sewer Pipe Text		X		X	
SETBACK	Building Setback Line		X			
SHRUB	Outline of Shrub Areas	X	X		X	
SHUTOFF	Utility Shutoffs (natural gas, propane, electrical, water, etc.)	X				
SIDEWALK	Outline of Sidewalks	X	X		X	
SIGN	Street Sign		X		X	
SITENUM	Address Numbers	X		X		
STAIRS	Stairwell Locations	X			X	
STARTPT	Starting Point		X		X	
STBMP	Storm Water BMP		X		X	
STMH	Manholes and Junction Boxes		X		X	
STMHTXT	Manholes and Junction Box Text		X		X	
STPIPE	Storm Pipes and Culverts		X		X	
STPIPTXT	Culvert and Pipe Text		X		X	
STRLIT	Street Light		X		X	
STRNAME	Street Name Text	X	X	X	X	
SUBBOUND	Subdivision Boundary Lines		X	X	X	
TANK	Water Tank	X			X	
TURF	Outline of Turf or Grass Areas	X	X		X	
UNITPTS	Unit Locations	X	X		X	
WALINE	Water Line		X		X	
WALINETXT	Water Line Text		X		X	
WATBOD	Water Bodies (ponds, pool, spa)		X		X	
WAVAL	Water Valve		X		X	
WAVALTXT	Water Valve Text		X		X	
ZONELINE	Zoning Boundary Line			X		
ZONETXT	Zoning Designation			X		

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