

## **Capturing Flood Control Right-of-Way Parcel Information**

By

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### **Abstract**

The Contra Costa County Public Works Department's Flood Control Division had to transfer hard-copy map information to a GIS format. These maps detail the right-of-way parcels owned by the County. In addition to outlining the boundaries of these parcels, many of these maps contain hand-written notes and additional information. In most cases the information contained in the notes and maps is unique with no backups and the person maintaining the information had long since retired. The goals were to capture right-of-way boundaries and attributes to graphically show data and create an archive of the right-of-way information. Users will be able to view the information to determine who owns the land and to determine possible encroachment issues. Once in a digital format, right-of-way information can be easily maintained and changes can be tracked. Additionally, the information can be easily backed up and kept safe in the event of a catastrophe.

### **Project Introduction**

The County of Contra Costa, California was incorporated in 1850 as one of the original 27 counties of the State of California, with the City of Martinez as the County Seat. It is one of the nine counties in the San Francisco-Oakland Bay Area. The County is the ninth most populous county in California, with its population reaching approximately 930,000 as of January 1, 2000.

The Contra Costa County Flood Control and Water Conservation District is a special district and political subdivision of the State of California. The District is a dependent special district, that is, the County Board of Supervisors is the governing board of directors of the District. The District was formed in 1951 with special legislation for Contra Costa County. The District is located within the Contra Costa County Public Works Department, and assists in the planning, development and implementation of drainage systems and clean water programs within Contra Costa County. The District also plans, develops, and implements regional drainage facilities in incorporated and unincorporated areas.

The Computer Services Division provides computer related support services to the Public Works Department, including Geographic Information Systems (GIS) services. GIS staff maintains numerous local geographic databases of entities and attributes for specific applications in the Public Works Department. They also perform data collection, verification, and mobilization functions for the different division through the use of advanced field equipment such as GPS units and data loggers. They also provide the

ability to do ad hoc analysis on numerous Department projects, which entail geographic data and its management.

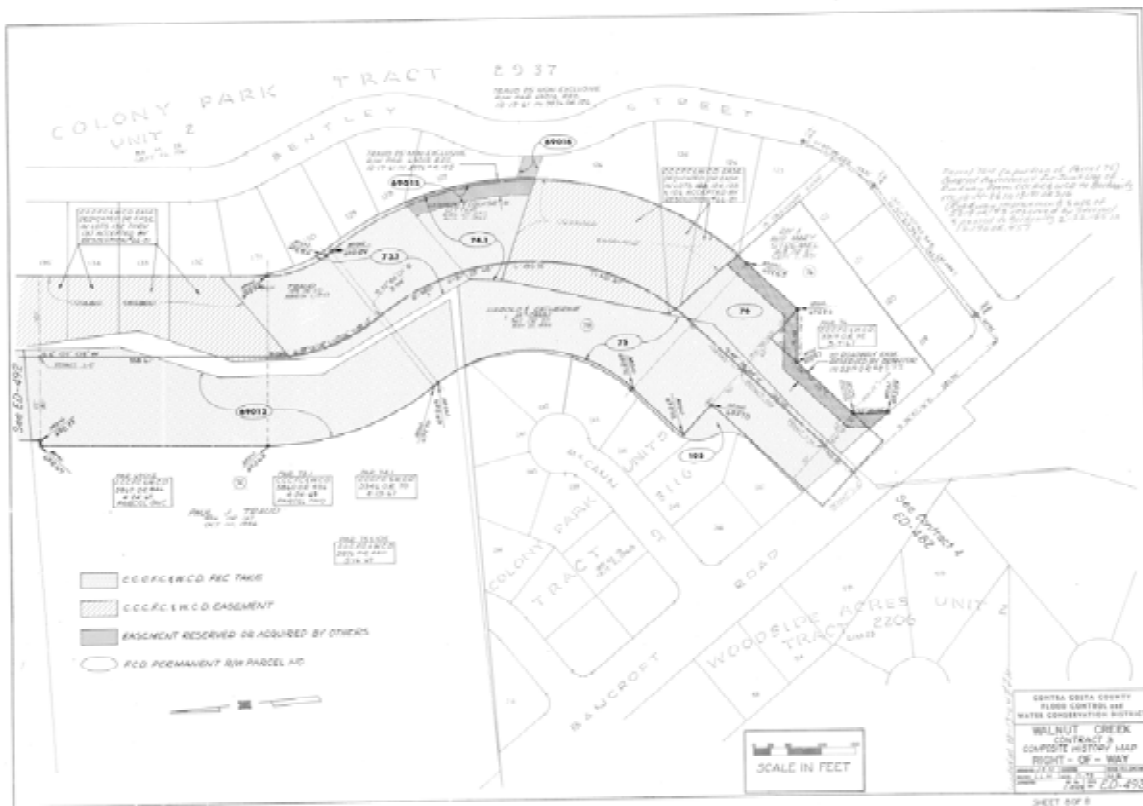
As a part of a study conducted by the Computer Services Division, numerous data sources were identified to be “at risk” due to the medium they were stored in and their rarity. One of these were the paper maps pertaining to the Flood Control Right of Way maps. The Flood Control District decided to transfer this hard-copy map information to a digital GIS format. These maps detail the right-of-way parcels owned and maintained by the Flood Control District. In addition to outlining the boundaries of these parcels, many of these maps contain hand-written notes and additional information. In most cases the information contained in the notes and maps is unique and no backups exist. The purpose of the project was twofold:

1. Capture right-of-way boundaries and attributes to graphically show data.
2. Create an archive of the right-of-way information.

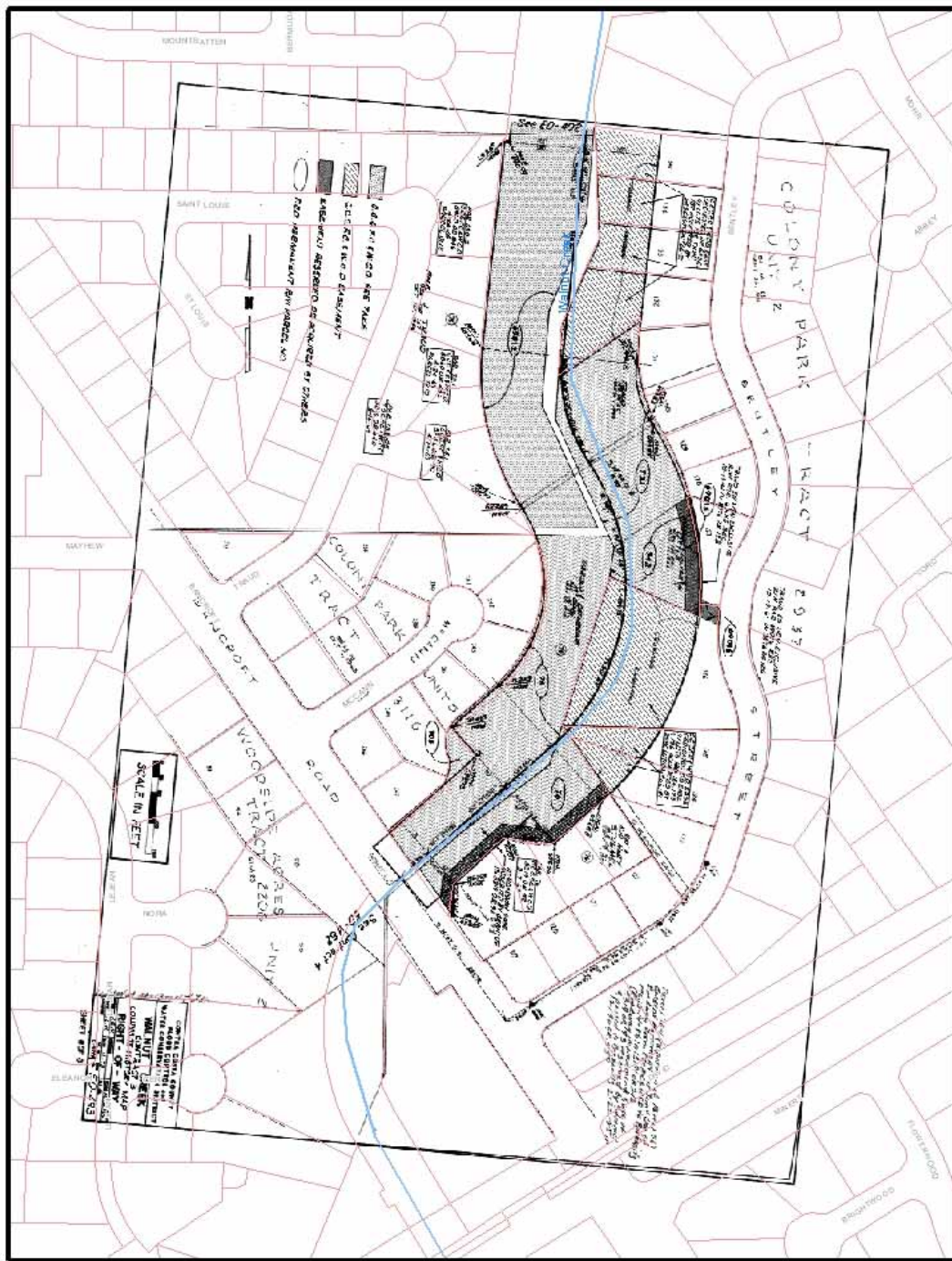
### Project Elements

In order to accomplish the project goals, four major steps needed to be completed:

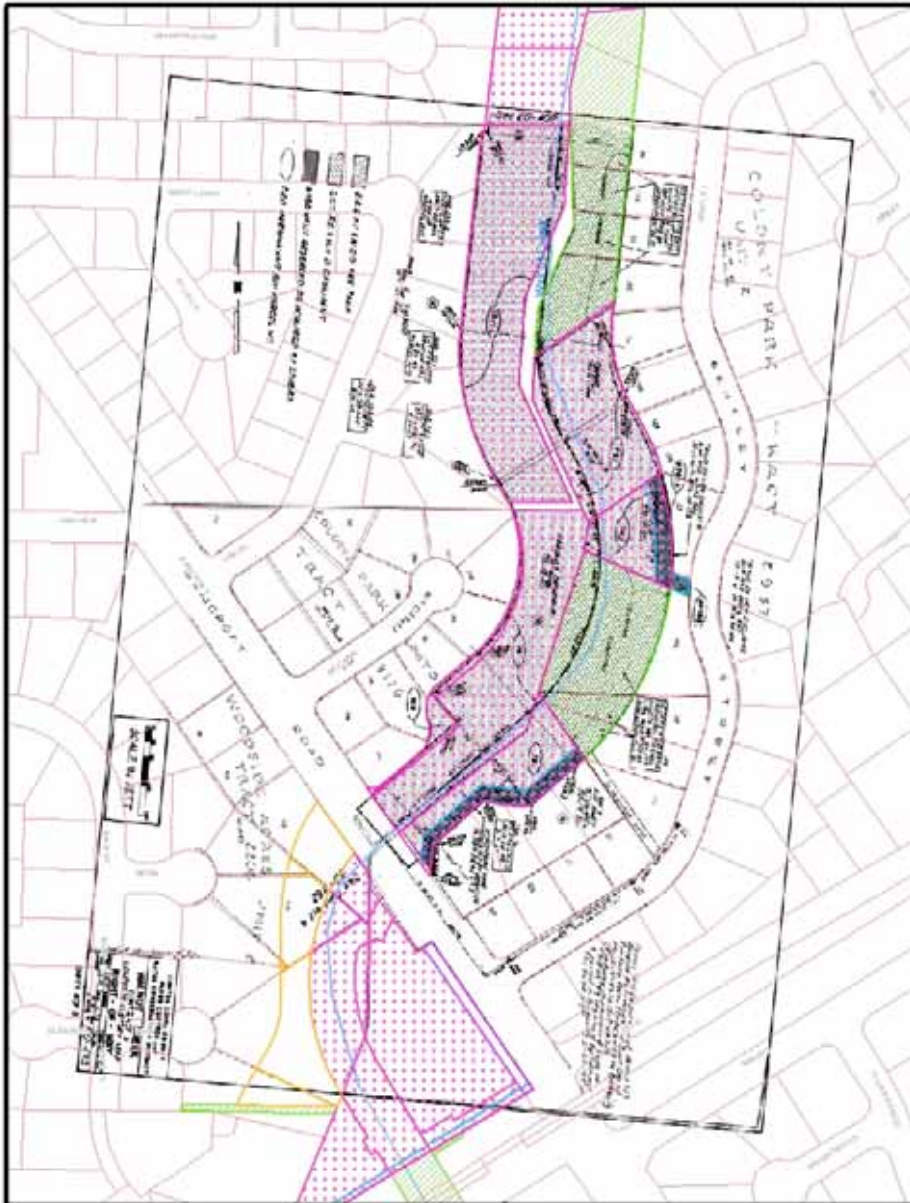
1. Scan the hard-copy maps to create TIFF files.



2. Georeference and rectify these scanned maps, using our assessor's parcel layer and road centerline layer as references.



3. With the rectified scans as a guide, create parcels and edit attributes using ArcMap. (Heads-up digitizing.)



4. Data entry of additional descriptive information into an Oracle database.

**Flood Control Drawings** Record Type [v] DELETE DRAWING

Composite Drawing Date Category Id Date Surveyed Field Book Scale

Drawing Number  
Drawing Desc  
Main Location Composite?

**Flood Control R/W Documents** DELETE DOCUMENT

Fc Pd Number  
Instrument Type Recording Reference  
Recording Agency Date Recorded

Book	Page	Pd

Comments

Type	Name

Items in blue can be selected from list by double-clicking in text area.

Record: 1/1

Start Developer/2000 For... Desktop 1:31 PM

Data was entered from a multitude of handwritten log sheets for twenty-one creeks.

Users could access the information via a web browser, ArcExplorer, ArcGIS, or a custom GIS application. Users would be able to view the information to determine who owns the land and to determine possible encroachment issues. Once in a digital format, right-of-way information can be more easily maintained and changes can be tracked. Additionally, the information can be easily backed up, and kept safe in the event of a catastrophe.

Future challenges will be to implement ArcSDE to link the Oracle database to the graphical GIS data. Another challenge will be to establish an ongoing maintenance cycle to update the data sets.

## **Conclusions**

The primary two goals of this project were met by capturing the right-of-way boundaries and attributes to graphically show data as well as creating an archive of the right-of-way information for safe keeping in the event of a catastrophe.

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