



# Regional GIS Basemap Maintenance

## Best Practices and Lessons Learned

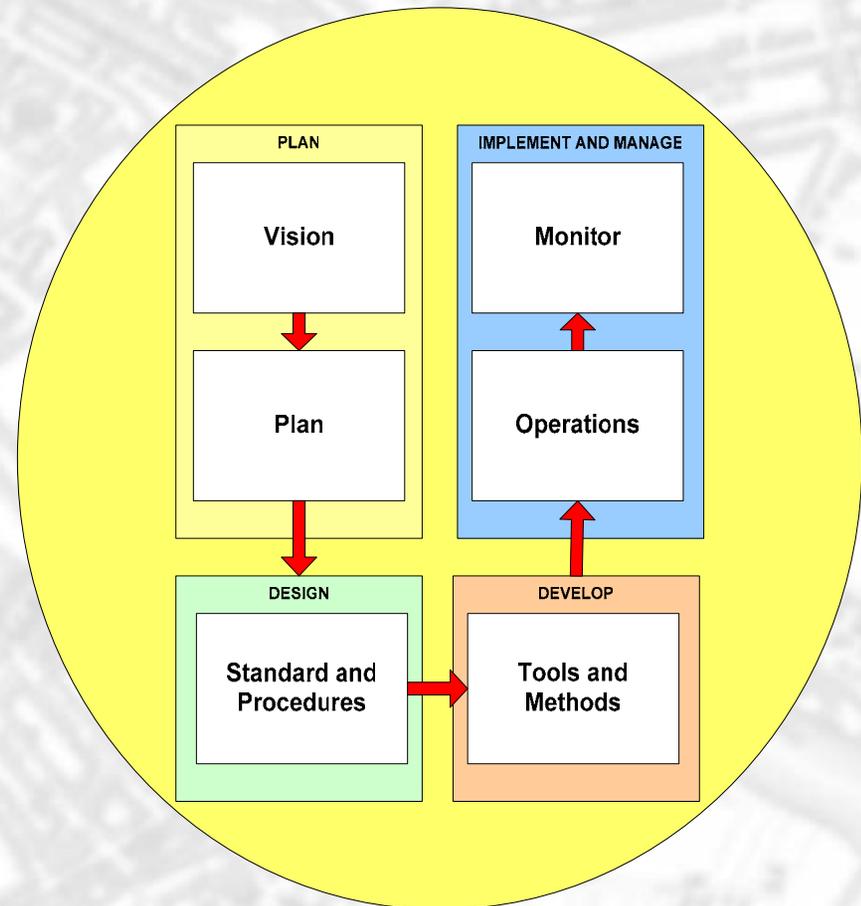
Santa Clara County Regional GIS Basemap  
Sacramento Regional GIS Cooperative

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# Getting Started



- **Establishing a vision**
  - What do you want to do?
  - Who will do what & level of commitment required
  - Identify stakeholders, sponsors and benefits
- **Develop a plan**
- **Define standards and procedures**
- **Develop tools & methods**
- **Implement, monitor, revise**



# Santa Clara County GIS Basemap

## A Regional Cooperative Approach



- **Parcels, street network, addresses, orthophotos**
- **County maintains master data set**
- **Update sources**
  - Cities perform updates for their areas – ETL required
  - Cities provide new subdivisions and addresses as input
  - County assessor – key change file, ownership changes
- **Monthly reconciliation with Assessor active role**
- **Quarterly distribution to subscribers- active process**

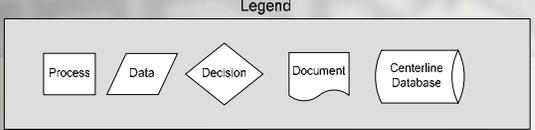
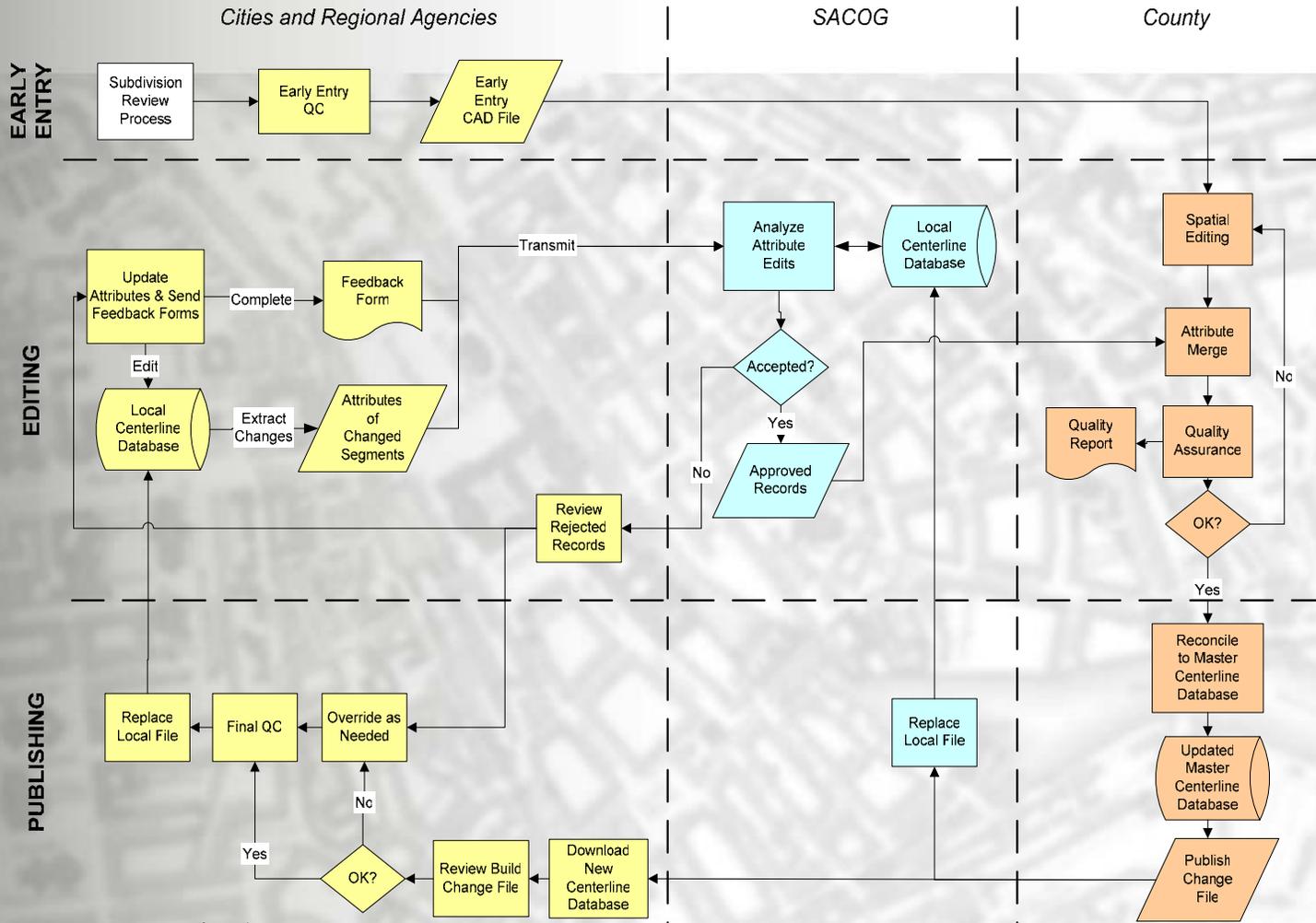
# Sacramento Regional GIS Cooperative

## Coordinated basemap maintenance



- **Parcels, street network, orthophotos, addresses**
- **County maintains parcels & posts updated data to FTP site monthly for subscriber download**
- **Street network maintenance through web based editing tool**
  - Development funded through UASI grant
  - Leveraged existing Geoprise ArcIMS browser
  - Cities, County, SACOG, Regional Fire participate in edits

# Sacramento Regional Centerline Basemap Update Workflow



Preliminary Workflow  
September 8, 2004

# Sacramento Regional Centerline Basemap Update Workflow - Automation Opportunities



Cities and Regional Agencies

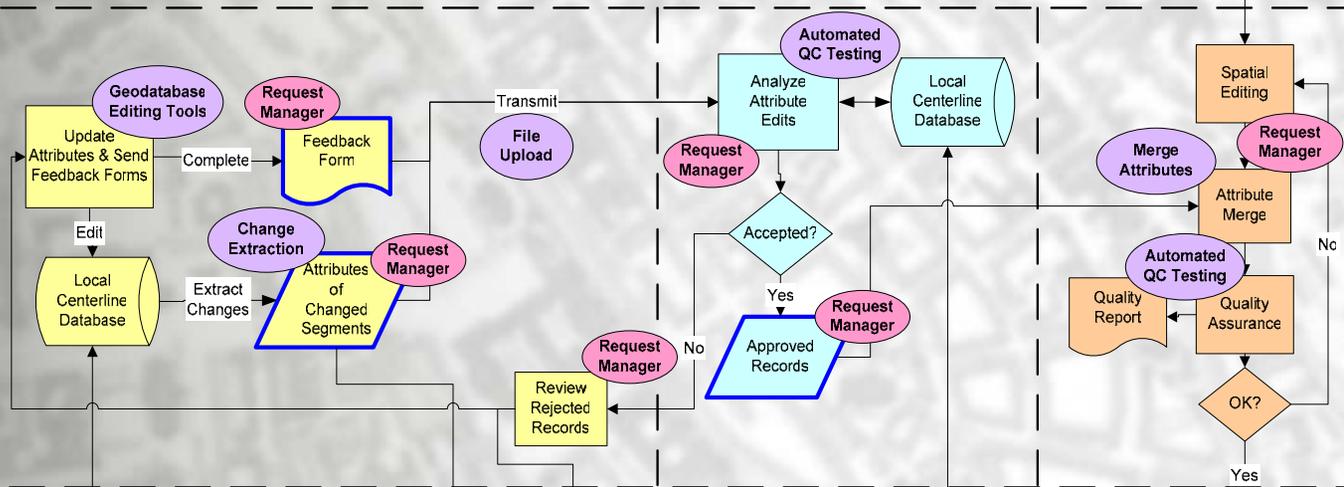
SACOG

County

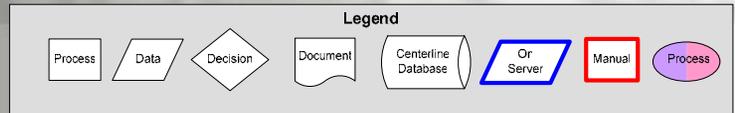
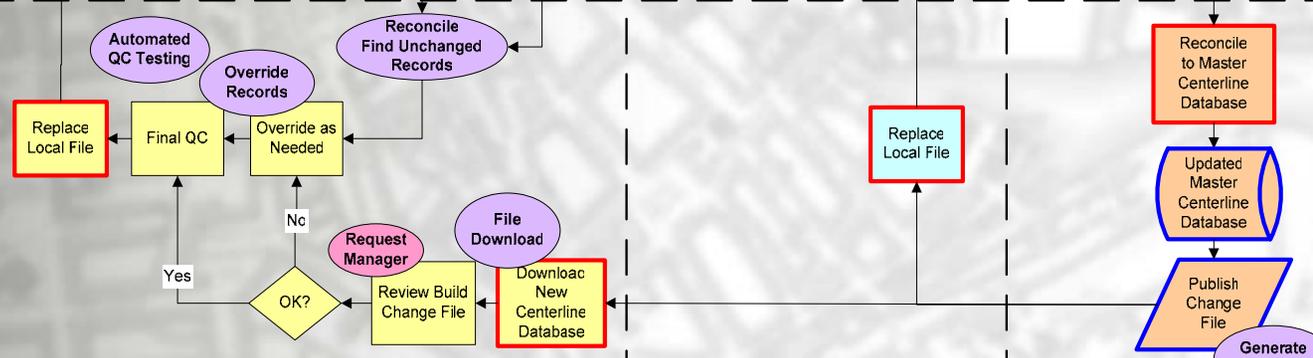
EARLY ENTRY



EDITING

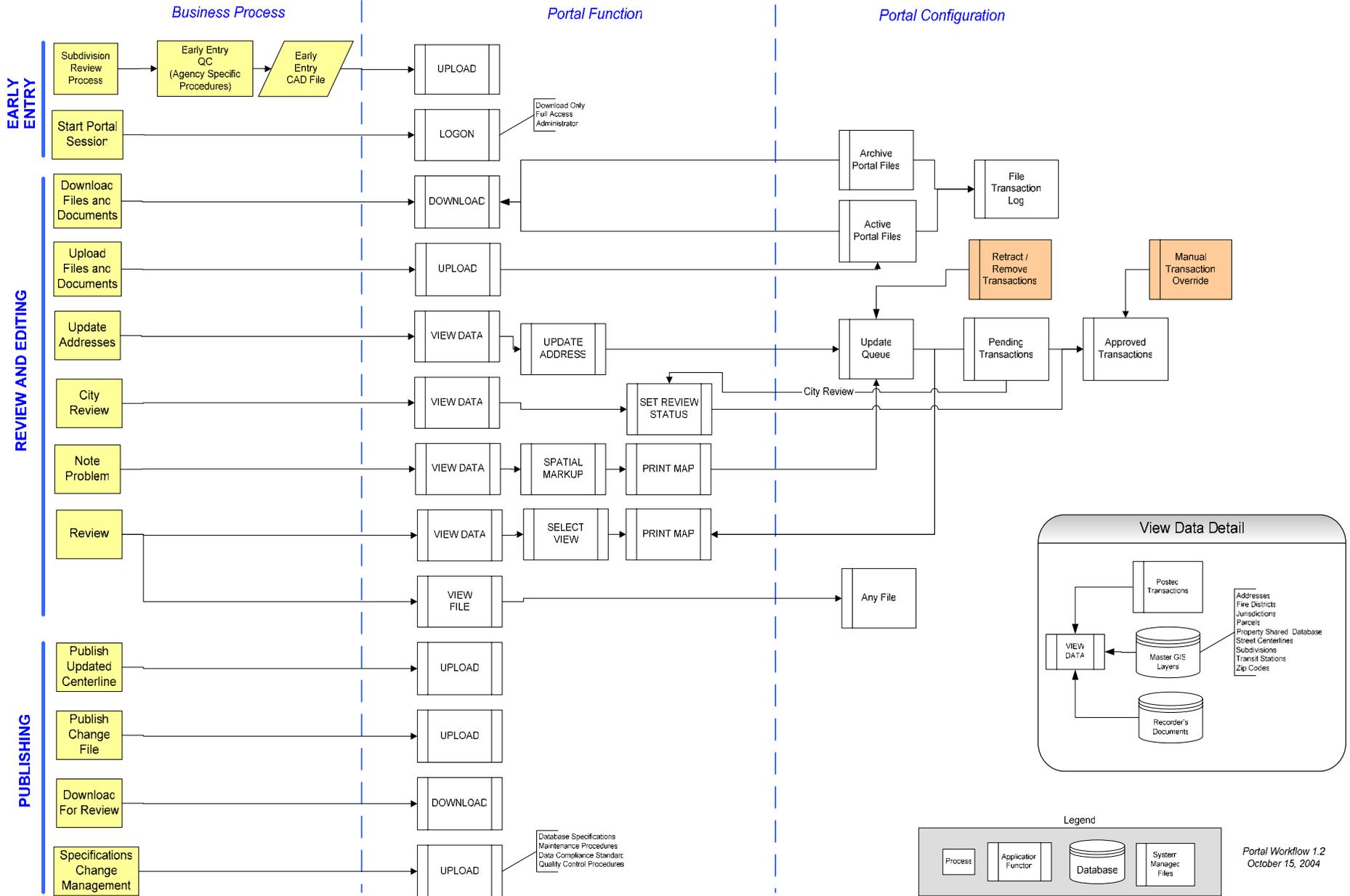


PUBLISHING



Preliminary Workflow  
September 8, 2004

# Sacramento Regional Centerline Basemap Portal Workflow



# Editing Portal Goals



- **Enhance maintenance process**
  - Standard toolset for consistency
  - Coordinate edits and approval
  - Streamline build process from common database
  - Reduce monthly database build effort and duration
  
- **Fulfill individual agency needs**
  - Accountability through transaction management
  - Individual agency view regardless of posting status
  
- **Improve data access**
  - Secure site for data upload and download

## Extract Features

The 'Extract Features' option allows a user to select an area and to then extract the spatial and database features pertaining to the selected area. This capability enables agencies with a small area of interest to acquire only the relevant data rather than having them download the entire extent.

The screen shot to the right shows the first screen the user will see when invoking an 'Extract Features.' The first drop down box, identified by "Select By" allows the user to specify how they'd like to select features from the map.

- **Extent** - Selects features from the current map extent.
- **Polygon** - Allows the user to draw a polygon on the map to select features (inside the polygon).
- **City of...** - Allows the user to select all features from within a city.
- **County...** - Allows the user to select all features for the entire County.
- **Unincorporated** - Allows the user to select features within all the unincorporated areas of the County.

The date selection and status drop down boxes are used to specify what data is to be extracted from the database. The extract features tool will extract not only the spatial records from the selected area, but also the appropriate records from the database (GIS\_CENTERLINES\_EDIT table).

The screenshot shows a software dialog box titled "Extract Features" with a subtitle "Feature Extraction Step 1". It contains several sections:

- Select By:** A dropdown menu with "Please Select..." and a list of options: Extent, Polygon, City of Citrus Heights (highlighted), City of Elk Grove, City of Folsom, City of Galt, City of Isleton, City of Rancho Cordova, City of Sacramento, County of Sacramento, and Unincorporated.
- End Date:** A dropdown menu set to "2005" and a calendar for the month of May. The calendar shows dates from 24 to 31, with the 1st through 4th highlighted.
- Status:** A dropdown menu with "Please Select..."
- Functions:** A section with a "Continue" button.

## Spatial Edit Request

The Spatial edit Request feature allows a user to enter a centerline edit record in the form of a spatial edit. Using the drawing tools, the user can mark up the current map and then submit the spatial request (in the form of a bookmark) to the database with just a few clicks.

**NOTE:** A spatial edit request is a private bookmark with drawing objects associated with it.

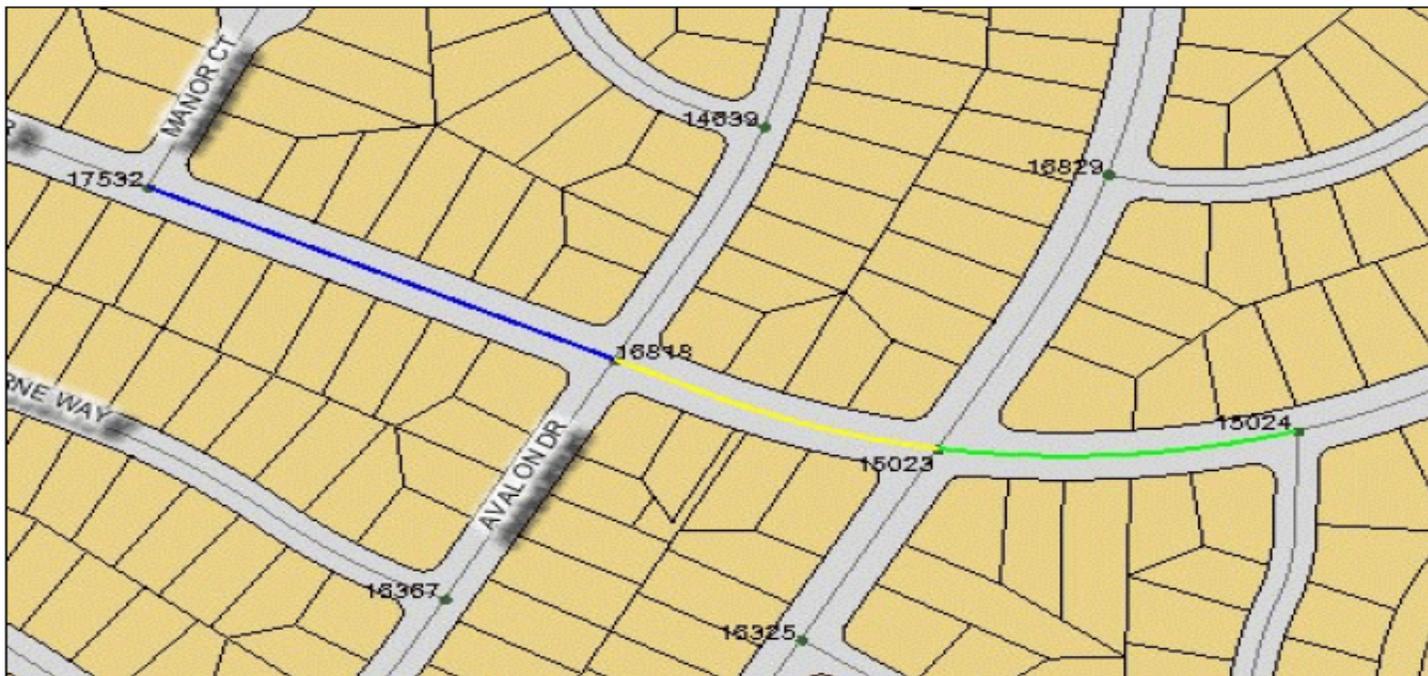
The screen shot to the right displays the spatial edit request screen. First, the user will use the standard drawing tools to mark up the current map view. The user can draw points, lines, polygons, circles, or text onto the map. Once complete, the user will then give this spatial edit request a brief name, write in some comments, and then click on the submit button. This will successfully enter the spatial edit request into the database. Once this has been done, any user can enter the admin screen (Range Edit Web Admin) and view the spatial edit request.

The screenshot shows a web interface titled "Drawing Tools". It features a toolbar with icons for drawing a point, a line, a polygon, a circle, text, and a cross. Below the toolbar is a section for "Extra Parameters" which currently shows "N/A". The main area contains "Spatial Edit Request Instructions" in red text, followed by a "Brief Name:" label and an input field, a "Comments:" label and a larger text area with scroll arrows, and a yellow "Submit" button at the bottom.

## **Range Edit Web**

The 'Range Edit Web' feature designed for collecting attribute changes to street centerline segments. The function is accessible via the Select menu. When this option is selected, a pop-up window will appear – this is the Range Edit Web application.

Upon clicking on a street centerline segment on the map, the user will notice that the segment that was just clicked on is highlighted in Yellow. Also noticeable are the previous segment in Blue, and the next segment in Green. The screen shot below shows a typical scenario:



Once the user clicks on the map and the appropriate street segments are highlighted, the Range Edit Web application window is updated with the appropriate information for the segment selected. Please see the Range Edit Web main section for further discussion related to Range Edit Web functionality.

## ***Map Views***

Map Views allows a user to choose from a predefined list of map views that reflect custom symbolization or map layer content. This function provides a means for the user to perform specific review functions using function specific views. The user will simply select a view from a pull down list and the GIS Viewer will redisplay within the current map extent using the parameters of the selected view (e.g. all approved centerline edits in the City of Elk Grove). The following items are the available map views for the Regional GIS Viewer:

- **Aging** – Color code based on age of request relevant to established performance standard.
- **Agency** – Show all attribute updates by agency and status.
- **Churn** – Show color coded map of update frequency by segment.
- **Errors** – Show segments flagged with potential errors by error type.
- **Type** – Show Updates by type of update. Filtered by agency
- **Print Map**– This feature brings up the print module. The print module allows the user to cleanly produce a professional looking 1-page summary of the current map.

## Main Range Edit Web Screen

The Main Range Edit Web Screen is illustrated below.

**Update Address - Microsoft Internet Explorer**

Invalid Zeros  
 Overlap  Gap  
 Range Decreases  
 Actual Outside of Exhaustive  
 Parity (Even/Odd) MisMatch

Unique ID:  **ID** Editor Name:   
Err Code:  Exception:   
View:  **Comments**  
 View Latest Pending Request (L/R Segments)

LUSK DR

<b>Left</b>	Exhaustive	4001	4099	<input type="text" value="4101"/>	<input type="text" value="4199"/>	4201	4217
	Actual	4001	4021	<input type="text" value="4101"/>	<input type="text" value="4131"/>	4211	4215
<b>Right</b>	Actual	4000	4020	<input type="text" value="4100"/>	<input type="text" value="4130"/>	4200	4212
	Exhaustive	4000	4098	<input type="text" value="4100"/>	<input type="text" value="4198"/>	4200	4216

# Regional Layer Maintenance Options



## ■ Basic Solution

- Central county maintenance
- File transfer between data providers and publishers

## ■ Custom

- Collaborative maintenance tools
- Enhanced workflow
- Streamlined and consistent process
- Integrated quality tools

## ■ What works for you?

# Next Steps



- **Establish subcommittee charter**
- **Define core business needs**
- **Develop project initiatives and prioritize**
- **Seek sponsorship**
- **Focus on results – not too many conflicting items**