

3.4.3

Caltrans Linear Referencing System: Lessons Learned

Presenter

Robert Ratcliff
California DOT
Robert_Ratcliff@dot.ca.gov

Co-Presenter

The California Department of Transportation (Caltrans) maintains a variety of information related to its transportation system. Although each data element has unique characteristics, they all must be referenced spatially by a geographic location. Some data elements are spatially referenced by actual coordinates (x, and y) taken from GPS readings. However, roughly 80 percent of this information is referenced by postmile as described in the Transportation System Network (TSN). A postmile is a unique identifier of a location along a Caltrans roadway. Postmiles in TSN do not have x,y coordinates, but do have a description of a real world location, including:

- “County” indicates the county which the data element is located,
- “Route” indicates the route that the data element exists upon, and
- “Postmile Location” indicates the location along the abovementioned route.

Caltrans has recently developed a Linear Referencing System (LRS) application for geographically locating (determining x and y geographic coordinates) data that is referenced by postmile. The application also provides users with means to validate postmiles and to determine the nearest valid postmile value for a given x,y coordinate. The LRS application has been implemented for approximately 5 months. This presentation will describe both lessons learned in development, operation and maintenance of the LRS as well as new activities to upgrade the application as a web service.