

CALTRANS LINEAR REFERENCING SYSTEM (LRS)

All Roads LRS Overview and Status

Keith Chervunkong
Caltrans GIS LRS Branch
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Caltrans Linear Referencing System

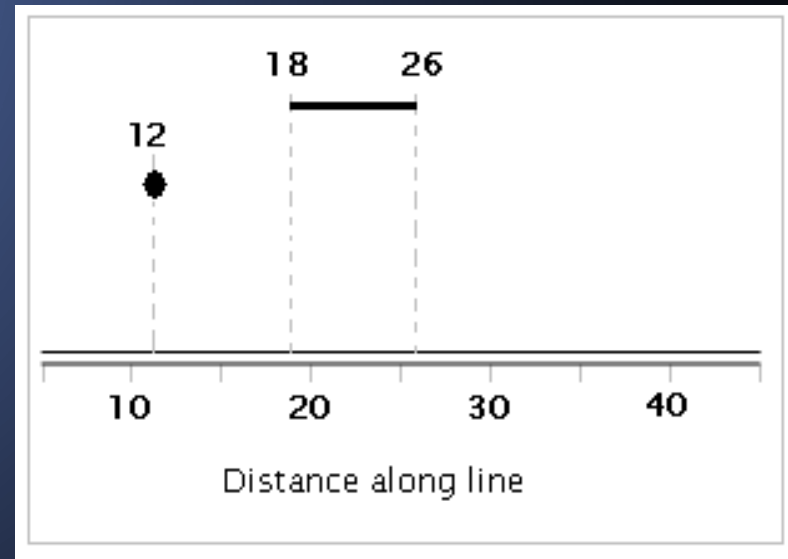
Purpose:

Provide overview of the Caltrans All Roads LRS and the status of updates.

What is a Linear Referencing System (LRS)?

Linear referencing is the method of storing geographic locations by using relative positions along a measured linear feature.

Distance measures are used to locate events along the line.



ArcGIS Resources,

http://resources.arcgis.com/en/help/main/10.2/index.html#//What_is_linear_referencing/003900000000100000/

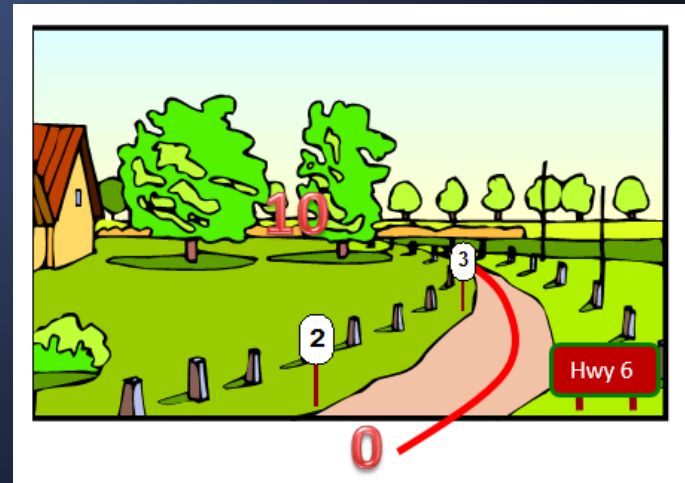
What is Dynamic Segmentation and Events?

The process of creating GIS features from tabular data.

Events refer to data that is located by its association to an LRS route and measure location.

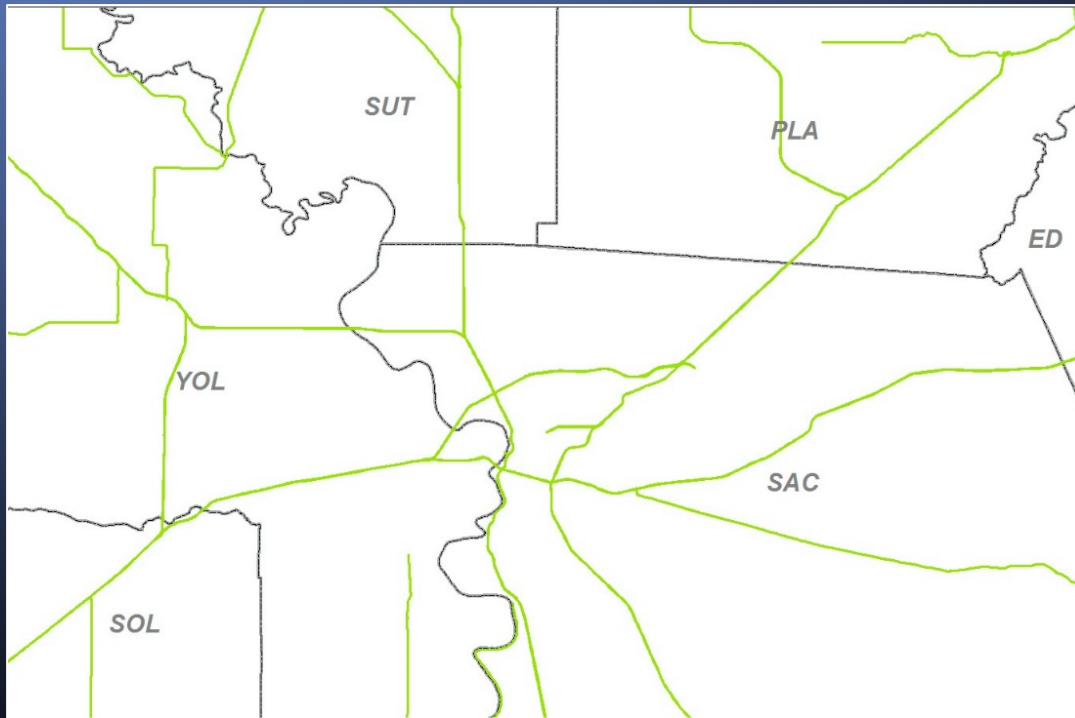
Route	PM_Beg	PM_End
6	2.000	3.000
6	3.000	3.019
6	3.019	4.500
6	4.500	7.298

Tabular data



LRS route with measures – in red

Dynamic Segmentation - Example



**LRS Base Layer -
Routes**



All Roads LRS



All Roads Network of Linear Referenced Data – (ARNOLD)

- July 2012 Federal Highway Administration (FHWA) new requirement for State DOT's
 - All public roads to be linear referencing system (LRS) enabled
 - Integral to Highway Performance Monitoring System (HPMS) annual submittal



Caltrans All Roads LRS Timeline

- All Roads 2016 NAIP (2017)
 - Cleanup geometry to match 2016 NAIP
 - High precision counties – 1:2,500/1:1,200
 - Alameda, Contra Costa, Imperial, Los Angeles, Marin, Monterey, Napa, Orange, Riverside, San Benito, San Bernardino, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Tulare, and Ventura.
 - Standard precision counties – 1:10,000
 - Completed April 2019
- Roads & Highways LRS Statewide Implementation – **In progress**
 - Migrate All Roads LRS to ESRI Roads & Highways
 - Project completion, Dec. 2020
- All Roads LRS Next Step
 - Additional high precision counties
 - Upgrade standard precision counties to high precision
 - Clean additional geometry statewide
 - Completion 2022



Caltrans LRS Long Term

- Transition to ESRI Roads & Highways
- Engage and coordinate with Local agencies for updates and data sharing
 - Survey Monkey
 - Butte, Sacramento, Shasta, Santa Clara, Los Angeles, Mono, Nevada, San Luis Obispo, Solano, and Merced.
 - Portal Pilot Project
 - CalOES



Thank you

chingsou.chervunkong@dot.ca.gov