Overview of the Postmile System and GIS Resources

Eileen Cunningham
Office of System & Freight Planning
Division of Transportation Planning

Presentation Overview

- Introduction to Transportation Systems Network (TSN)
- Overview of the Postmile System
- Using a Sequence Listing
- Finding a Postmile Location
- Postmile Tool in ArcMap
- Required vs. Optional TCR Maps
- GIS Data Types and Availability

Introduction to Transportation Systems Network (TSN)

- Collision Data
- State Highway Inventory
- TASAS Coordinators

Transportation Systems Network (TSN)

- Database maintained by Traffic Accident Surveillance and Analysis System (TASAS) Branch, Division of Research Innovation and System Information (DRISI)
- Combination of two databases
  - Collision database
  - State highway inventory database

Collision Data

- Caltrans codes and records all accidents on or associated with a state highway in the database
  - Based on California Highway Patrol (CHP) data stored in Statewide Integrated Records System (SWITRS)
- This is the data source for statistical reporting on highway safety
  - Reports: Table B, C, Wet Table C and TASAS Selective Accident Retrieval (TSAR)

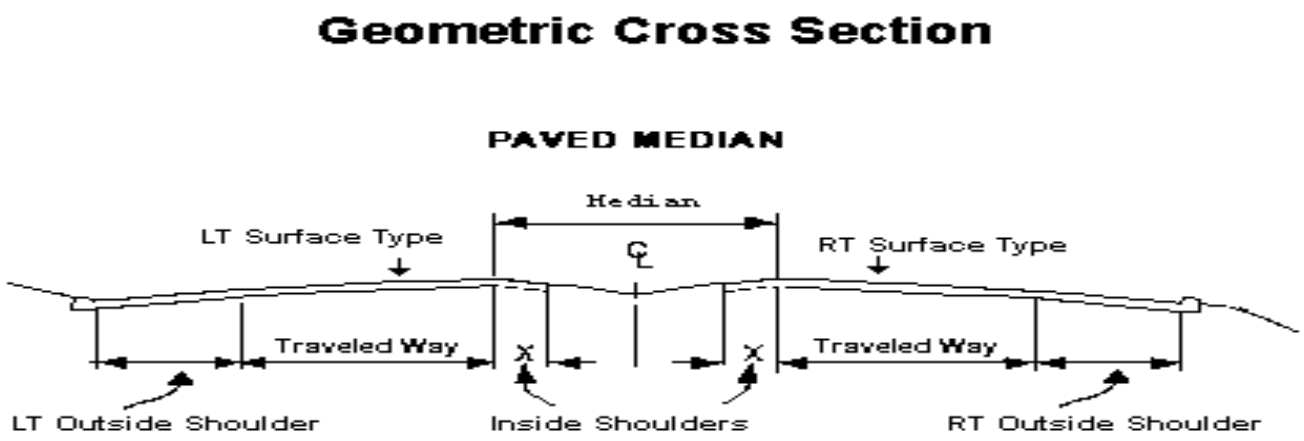
State Highway Inventory

- Describes the physical characteristics of
  - State highways
  - Intersections
  - Ramps

State Highway Inventory

- Location:
  - District, route, county and postmile identification
- Highway group:
  - Divided, undivided, independent alignment or unconstructed
- Descriptions:
  - Bridges, ramps, intersections, etc.
- Average Daily Traffic (ADT)
- Federal classifications
- Geometric features and attributes:
  - Access control, roadbed and median information
- TSAR Reference Card (pgs. 6-8):
  - http://onramp.dot.ca.gov/tsi/ohsip/tasas/TASAS%20TSAR%20Reference%20Card.pdf

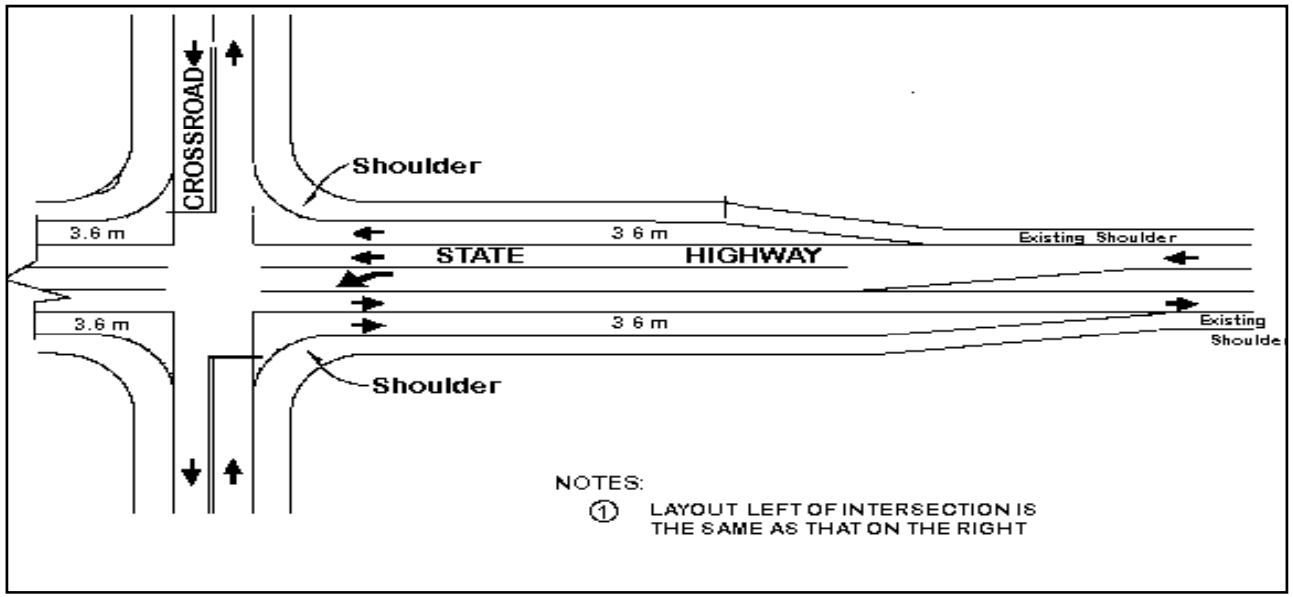
State Highway Data



Source: TASAS Branch, OHSIP, DRISI

- Access control
- Median
- Traveled way
- Special features
- Shoulders

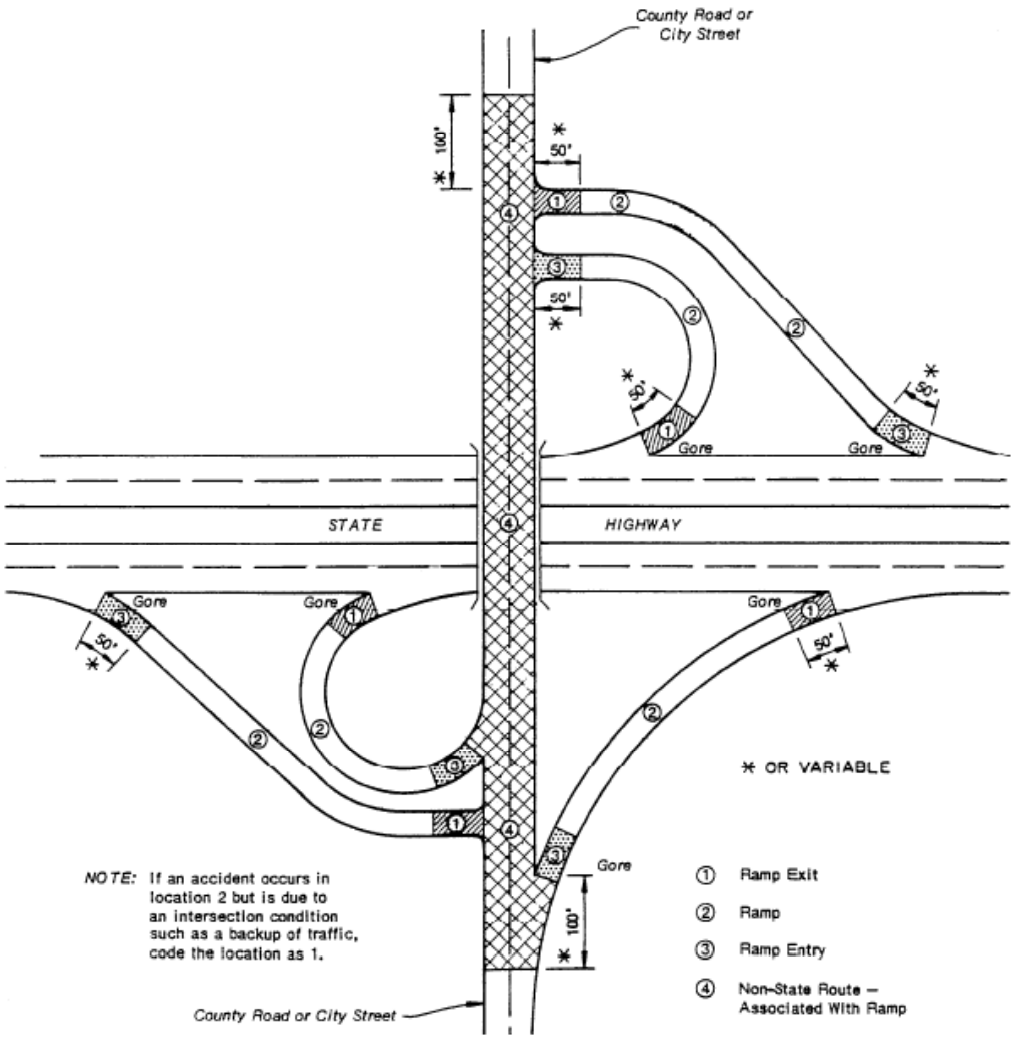
Intersection Data



Source: TASAS Branch, OHSIP, DRISI

- Intersection Type
- Control Type
- Number of Thru Lanes
- Channelization
- Traffic Flow
- Lighting

Ramp Data



Source: Collision Coding Manual, TASAS Branch, OHSIP, DRISI

- Ramp Type
- On/Off Indicator

Data Updates

- The highway inventory is continuously updated by TASAS as they receive As-Built Plans for:
  - New Highways
  - Realigned highways
  - Relinquished highways
  - Notification from district TASAS coordinators
- Refer questions regarding TSN to your TASAS Coordinator
  - http://onramp.dot.ca.gov/tsi/ohsip/tasas/districtinformation/distphone.pdf

TASAS Coordinators

DISTRICT TASAS COORDINATORS AND CONTACTS				
Dist	Coordinator*/Contact	Public Phone No.	E-Mail Address	FAX No.
01	Marsha Davenport*	(707) 445-6584	Marsha Davenport/D01/Caltrans/CAGov	(707) 441-5826
	Clark Davis	(707) 445-6584		
02	Gerry Reyes*	(530) 225-3479	Gerry Reyes/D02/Caltrans/CAGov	(530) 225-3299
	Dwight Winterlin	(530) 225-3287	Dwight Winterlin/D02/Caltrans/CAGov	(530) 225-3299
03	Truc Nguyen*	(530) 741-5729	Truc Nguyen/D03/Caltrans/CAGov	(530) 741-5762
	Darryl Chambers	(530) 741-5721	Darryl Chambers/D03/Caltrans/CAGov	
	Lori Marino	(530) 741-5730	Lori Marino/D03/Caltrans/CAGov	
04	Kapsoon Capulong*	(510) 286-4596	Kapsoon Capulong/D04/Caltrans/CAGov	(510) 286-4618
05	Steve Cadenasso*	(805) 549-3057	Steve Cadenasso/D05/Caltrans/CAGov	(805) 549-3045
06	Dan Singh*	(559) 488-4109	Dan J Singh/D06/Caltrans/CAGov	(559) 488-6878
	Jaswir Johl	(559) 488-4018	Jaswir S Johl/D06/Caltrans/CAGov	
	Trinidad Anguiano	(559) 488-7394	Trinidad Anguiano/D06/Caltrans/CAGov	
07	Seyed Torabzadeh*	(213) 897-0085	Seyed Torabzadeh/D07/Caltrans/CAGov	(213) 897-0570
	Joel Fonseca	(213) 897-0664	Joel Fonseca/D07/Caltrans/CAGov	(213) 897-4674
	Leo Knight	(213) 897-0562	Leo Knight/D07/Caltrans/CAGov	
08	Andrew Machen*	(909) 383-7510	Andy Machen/D08/Caltrans/CAGov	(909) 383-5903
	Julie Griffin	(909) 383-4331	Julie Griffin/D08/Caltrans/CAGov	(909) 383-4510
	Sybille Phillips	(909) 383-4158	Sybille Phillips/D08/Caltrans/CAGov	(909) 383-4158
	Manoj Kar	(909) 383-6237	Manoj Kar/D08/Caltrans/CAGov	
	Grace Miles	(909) 383-4313	Grace Miles/D08/Caltrans/CAGov	(909) 383-6254
09	Greg Weirick*	(760) 872-5224	Greg Weirick/D09/Caltrans/CAGov	(760) 872-5253
	Steve Wisniewski	(760) 872-0790	Steve Wisniewski/D09/Caltrans/CAGov	(760) 872-5253
	Sara Greer	(760) 872-0648	Sara Greer/D09/Caltrans/CAGov	(760) 872-0678
10	Duane Hawkes*	(209) 948-7119	Duane Hawkes/D10/Caltrans/CAGov	(209) 948-7651
11	Charles Gray*	(619) 688-3233	Charles Gray/D11/Caltrans/CAGov	(619) 688-6644
	Linda Greene	(619) 688-3236	Linda Greene/D11/Caltrans/CAGov	(619) 688-6644
	Sonya Ellyazidi	(619) 688-3251	Sonya Ellyazidi/D11/Caltrans/CAGov	
12	Jason Osman*	(949) 724-4907	Jason Osman/D12/Caltrans/CAGov	(949) 756-2817
	Phil Rabalais	(949) 724-2810	Phillip Rabalais/D12/Caltrans/CAGov	(949) 756-2914
HQ	Eric Y Wong	(916) 654-6839	Eric Y Wong/D03/Caltrans/CAGov	(916) 654-6583
	Andy Campros	(916) 226-1822	Andrew Campros/HQ/Caltrans/CAGov	(916) 654-3637
	Hau Doan	(916) 654-4318	Hau Doan/HQ/Caltrans/CAGov	(916) 654-3637
	Garth Fok	(916) 654-5037	Garth Fok/D03/Caltrans/CAGov	(916) 654-6583
	Loi Huynh	(916) 654-2677	Loi Huynh/D03/Caltrans/CAGov	(916) 654-3637
	Henry Pham	(916) 654-5422	Henry T Pham/D03/Caltrans/CAGov	(916) 654-3637
	Debbie Silva	(916) 653-3076	Debbie Silva/HQ/Caltrans/CAGov	(916) 654-6583
	Jenny Vo	(916) 654-2619	Jenny Vo/D03/Caltrans/CAGov	(916) 654-6583
	Weili Zhao	(916) 654-4837	Weili Zhao/HQ/Caltrans/CAGov	(916) 654-3637

DISTRICT SAFETY SENIORS	
Name - District	Phone No.
Ralph Martinelli - 01	(707) 445-6376
Kristi Westoby - 02	(530) 225-3113
Mike Hagen - 03	(530) 741-5740
Bao Chan - 04	(510) 286-6148
Deb Larson - 05	(805) 549-3017
Joel Aguilar - 06	(559) 488-4123
Son Dao - 07	(213) 897-0273
Haissam Yahya - 08	(909) 383-4065
Terry Erlwein - 09	(760) 872-0650
Duper Tong - 10	(209) 948-7859
Charles Gray - 11	(619) 688-3233
Jason Osman - 12	(949) 756-4907

CALTRANS CONTACTS	
Contact	Phone No.
Vladimir Poroshin	440-0572
Help Desk	654-4216

CHP CONTACTS	
Contact	Phone No.
Carolyn Gaynor	843-4148
Roberta Tanger	843-4229
Carlos Mandujano	843-4171
FAX No.	843-4228
Valerie Smith	843-4238

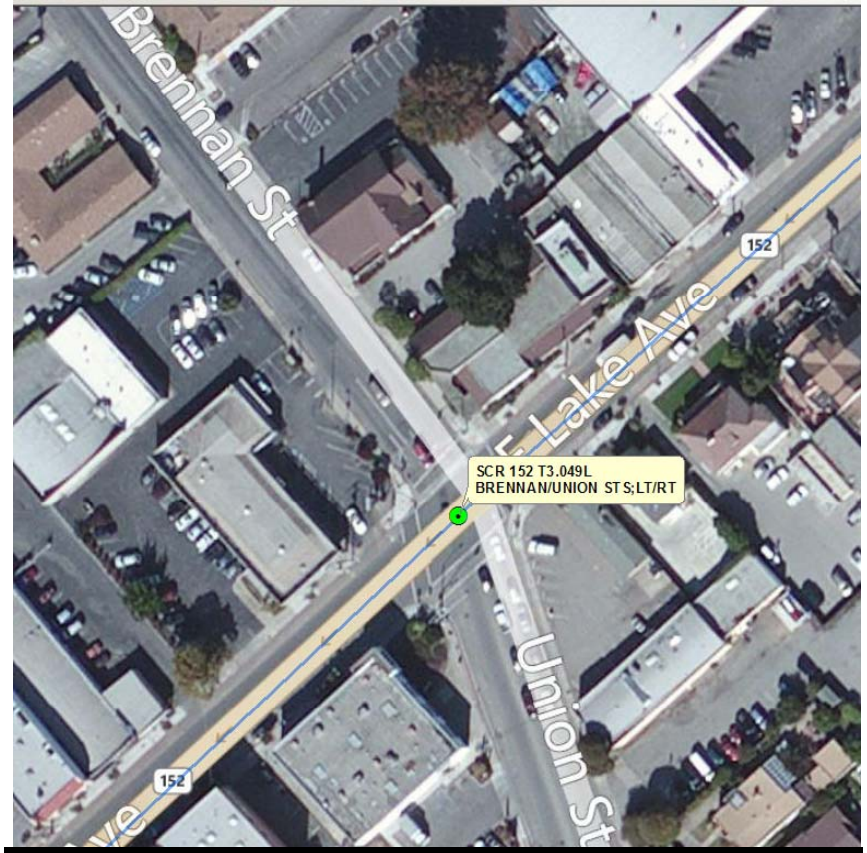
2/7/2012

Overview of the Postmile System

- Postmile System Basics
- Postmile Codes

Overview of Postmile System

- Every location on the state highway system has a postmile location
- A postmile location consists of:
  - County
  - Route number
  - Route suffix
  - Postmile prefix
  - Postmile number
  - Postmile suffix



County	Route	Route Suffix	PM Prefix	PM Number	PM Suffix
SCR	152		T	3.049	L

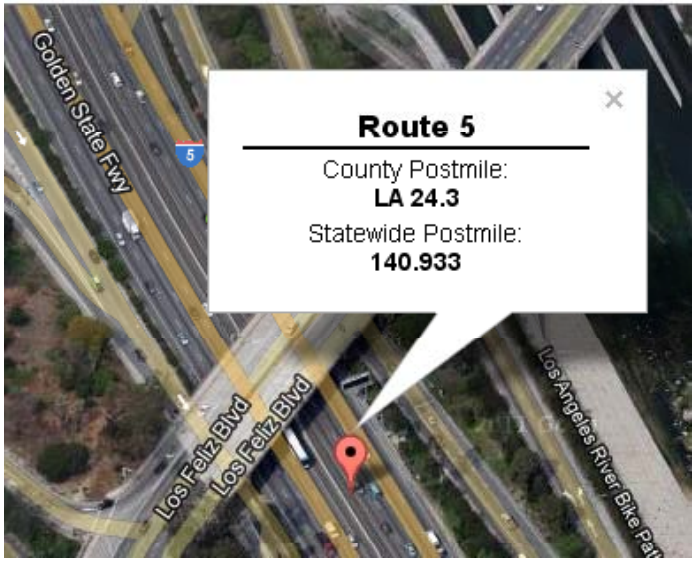
Overview of Postmile System

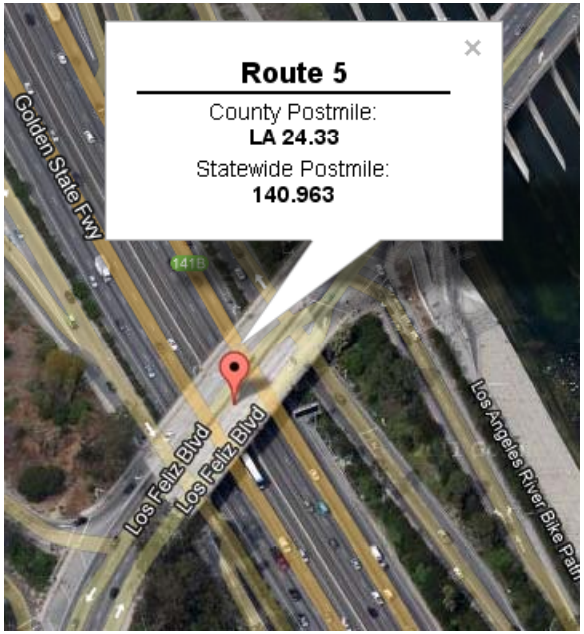
- Postmile number precision
  - Provide the values for all three decimal places
    - Even if this includes zeros
    - Example: 0.400 vs. 0.4
  - Do not round postmile numbers up or down
    - Loss of precision
    - Potential reference to a non-existent postmile
      - Most common at equation points and county boundaries

Example: Loss of Precision – Incorrect Location

- LOS FELIZ BLVD OC
  - Used LA 134 24.3 versus LA 134 24.330

LA	LA	024.122	DR		NB OFF LOS FELIZ
LA	LA	024.168	DR		SB ON FR LOS FELIZ
LA	LA	024.209	DH	00.121	LOS FELIZ ON RAMP OC
LA	LA	024.330	DH	00.284	LOS FELIZ BLVD OC
LA	LA	024.463	DR		NB OFF GRIFFITH PARK DR





Example: Postmile Rounding Error – Non-Existent Postmile

DIST 04 RTE 580 DIR E-W

CO.	CITY	POSTMILE	G RF PT	LENGTH	DESCRIPTION
CC	RCH	006.125	DH	00.096	TOLL PLAZA
CC	RCH	006.221	DH	01.565	RICH/SRF BR 28-100
CC	RCH	007.786	DH	00.000	END OF COUNTY
MRN		000.000	DH	02.250	RCH SRF BR CONTINUED
MRN		002.250	DH	00.015	

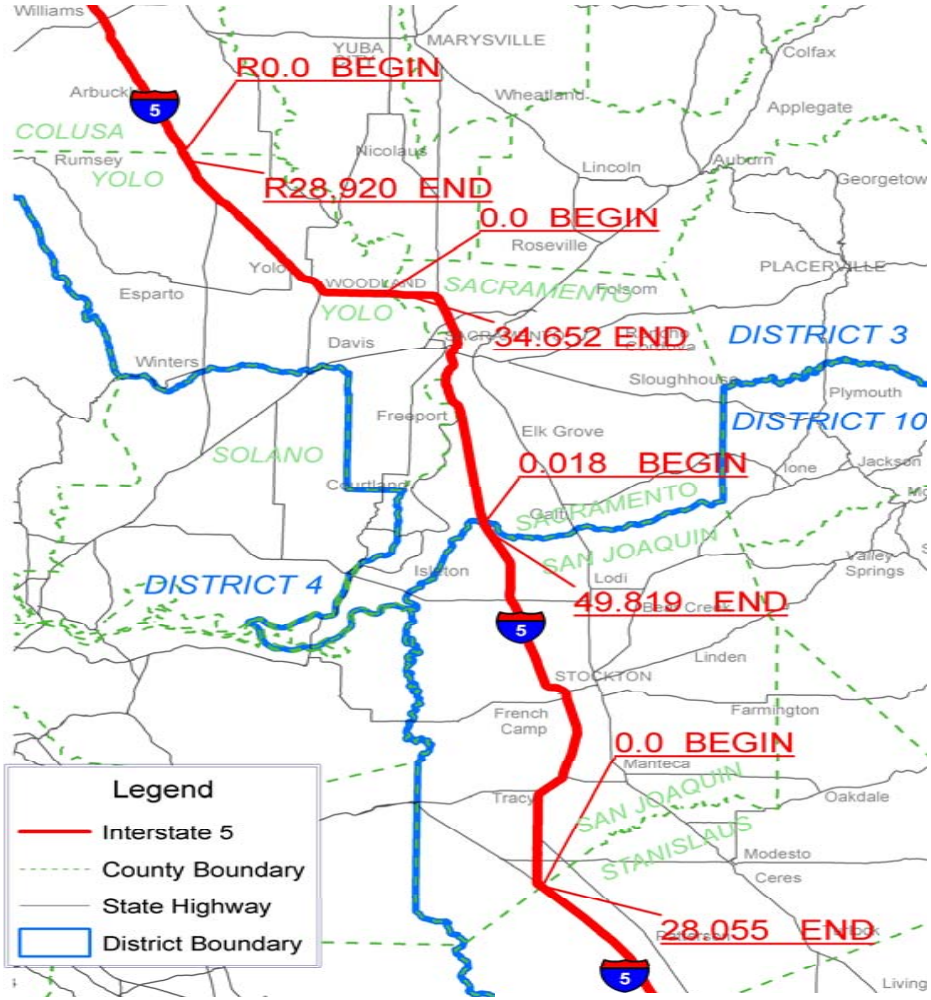
County CC-Contra Coste Route 580 Postmile 7.79 Go Start Over

No match found for postmile

- 580 CC 7.79 does not exist; 580 CC 7.786 is the last postmile in CC

Overview of Postmile System

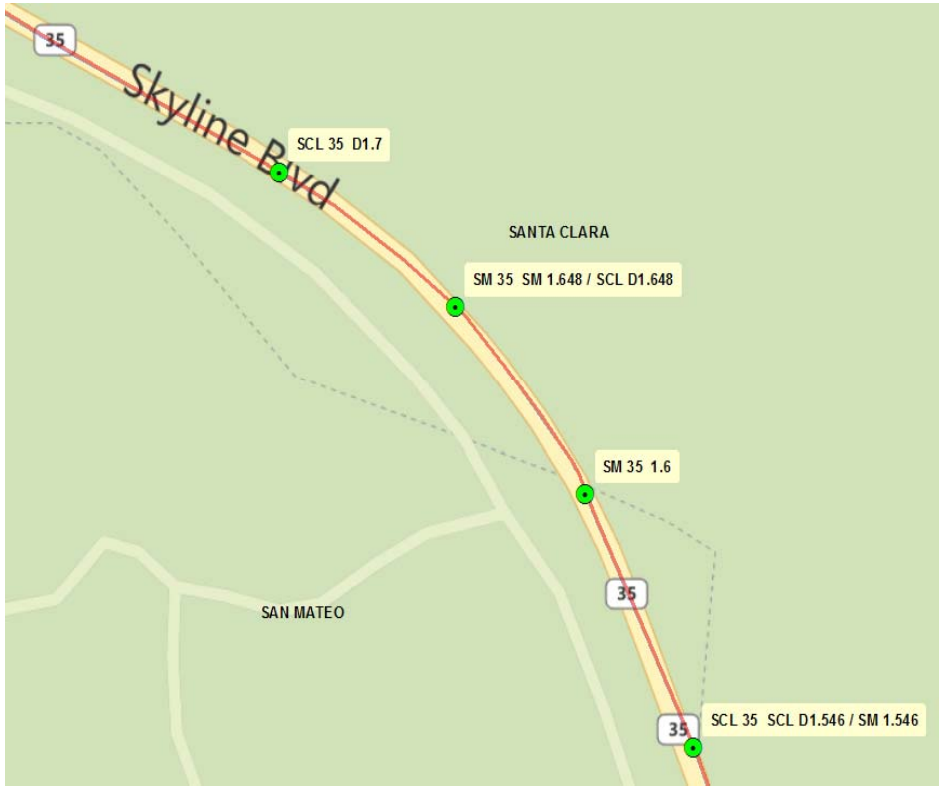
- Postmile values reset to zero at all county boundaries
  - Exceptions:
    - Route meanders between two counties
    - Realignment, relinquishment or adoption at beginning of a route
- Postmiles increase on east and north sides of a route
  - Exceptions:
    - Backwards routes postmiles increase on west and south sides of a route



Source: TASAS Branch, OHSIP, DRISI

Overview of Postmile System

- Example of route meandering between two counties



DIST 04 RTE 035 DIR S-N

CO.	CITY	POSTMILE	G RF PT	LENGTH	DESCRIPTION
SCL	PA	D 001.546	UH	00.000	SM/SCL CO LINE
SM		001.546	UH	00.102	
SM		001.648	UH	00.000	SM/SCL CO LINE
SCL	PA	D 001.648	UH	00.473	

Realignments, Relinquishments, or Adoptions

DIST 12 RTE 001 **DIR S-N**

CO.	CITY		POSTMILE	G RF PT	LENGTH	DESCRIPTION
ORA	DAPT	R	000.129	DH	00.102	JCT 5 CAMINO L RMBLS UC
ORA	DAPT	R	000.204	DI		NB ON FROM SB RTE 5-RT
ORA	DAPT	R	000.231	DH	00.022	
ORA	DAPT	R	000.253	DH	00.144	RAMP NOSE-RT(RTE 5SB)
ORA	DAPT	R	000.397	DH	00.042	CAMINO CAPISTRANA UC
ORA	DAPT	R	000.439	DH	00.147	EB 55-239

- Beginning of Route is R0.129
- Route was shortened due to a realignment and pending relinquishment

Backwards Routes

- In general, south to north routes are odd numbered and west to east routes are even numbered. There are six routes in California which do not follow this rule. They are known as backward routes. The six backward routes in California are:
  - Route 71 North to South
  - Route 153 East to West
  - Route 224 East to West
  - Route 282 East to West
  - Route 580 East to West
  - Route 780 East to West

Postmile Codes

- County
  - 2-3 letter abbreviation
- Route Suffix
  - S: Supplemental Route
    - Identifies spurs, supplemental truck lanes and bus lanes where all or part of the roadway is a separate alignment.
  - U: Unreliquished Route
    - A portion of a route that is in the process of being relinquished to a city or county and which Caltrans still maintains.

County	Route	Route Suffix	PM Prefix	PM Number	PM Suffix
LA	10	S		16.968	

County	Route	Route Suffix	PM Prefix	PM Number	PM Suffix
ORA	22	U		3.45	

Postmile Codes

- Post Mile Prefix
  - Used when there have been changes to a route
    - Realignment and relinquishment
  - Distinguishes original postmile from revised postmile
  - In lieu of revising all of the postmiles on the route
    - Only the portion that is affected is revised
- Postmile Prefix Codes

Code	Code Description
C	Commercial lanes
D	Duplicate post mile at meandering county line
G	Reposting of duplicate post mile at end of route
H	Realignment of D mileage
L	Overlap post mile
M	Realignment of R mileage
N	Realignment of M mileage
R	First realignment
S	Spur
T	Temporary connection

Postmile Codes

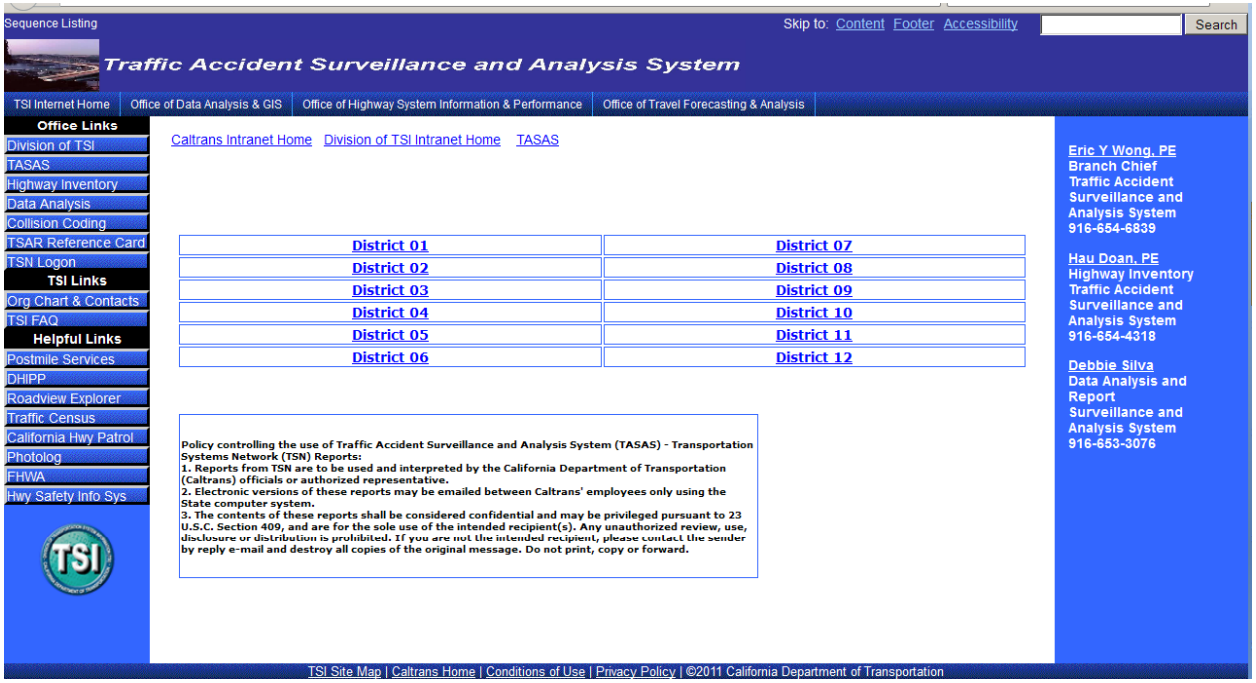
- Postmile Suffix
  - Independent alignment or unconstructed portion of highway
- Postmile Suffix codes

Code	Code Description
R	Right independent alignment
L	Left independent alignment
X	Unconstructed highway

Using a Sequence Listing

- How to access a highway sequence listing
- Sequence listing organization
- Columns and codes

How to Access a Sequence Listing



- TASAS website: http://onramp.dot.ca.gov/tsi/ohsip/tasas/seqlisting.php
- Divided by district and route
- Date of listing

Sequence Listing Organization

TASAS

TRAFFIC ACCIDENT SURVEILLANCE AND ANALYSIS SYSTEM

HIGHWAY SEQUENCE LISTING (W/CITIES)

DISTRICT 03

Policy controlling the use of Traffic Accident Surveillance and Analysis System (TASAS) - Transportation Systems Network (TSN) Reports:

1. Reports from TSN are to be used and interpreted by the California Department of Transportation (Caltrans) officials or authorized representative.
2. Electronic versions of these reports may be emailed between Caltrans' employees only using the State computer system.
3. The contents of these reports shall be considered confidential and may be privileged pursuant to 23 U.S.C. Section 409, and are for the sole use of the intended recipient(s). Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message. Do not print, copy or forward.

Legend

G, R, P = Highway Group	R	-	Right Independent Alignment
	L	-	Left Independent Alignment
	D	-	Divided Highway
	U	-	Undivided Highway
	X	-	Unconstructed Highway
F, T = File Type	H	-	Highway
	I	-	Intersection
	R	-	Ramp

Route Suffix Codes

S - Supplemental Route
U - Unrelinquished Route

Post Mile Prefix Codes

C - Commercial lanes
D - Duplicate post mile at meandering county line
G - Reposting of duplicate post mile at the end of a route
H - Realignment of D mileage
L - Overlap post mile
M - Realignment of R mileage
N - Realignment of M mileage
R - First realignment
S - Spur
T - Temporary connection

Filler / Font Color

Grey / Red - Equation
Grey / Green - End of District, County, Route, Independent Alignment ,State Line or Route Break
Grey / Blue - Right Independent Alignment
Grey/Purple - Left Independent Alignment
Bold Dark Red - Post Mile Prefix (C,D,H,L,M,N,R,S and T)

Length - The mileage to the next highway point

P - At valid postmile on intersecting lower route

- - - - > - See valid postmile on lower intersecting route

- Title page provides legend
  - Description of fields
  - Definitions of codes

Sequence Listing Header/Footer

DIST 03 RTE 005 DIR S-N

CO.	CITY	POSTMILE	G RF PT	LENGTH	DESCRIPTION
SAC		000.018	DH	00.199	SAN JOAQUIN CO LN
SAC		000.217	DH	00.492	EB(MOKELUMNE) 29-197R/L
SAC		000.709	DH	00.040	MIDDLE SLOUGH 24-260R/L
SAC		000.749	DH	00.289	EB #24-260 R/L
SAC		001.038	DH	00.177	LOST SLOUGH 24-261 R/L
SAC		001.215	DH	00.916	EB #24-261 R/L.
SAC		001.929	DR		TWIN CITIES RD, SB ON
SAC		001.997	DR		TWIN CITIES RD, NB OFF
SAC		002.131	DH	00.675	TWIN CITIES RD OC 24-284
SAC		002.268	DR		TWIN CITIES RD, SB OFF
SAC		002.330	DR		TWIN CITIES RD, NB ON
SAC		002.806	DH	00.335	DBL 42X277APC
SAC		003.141	DH	00.219	DIERSSEN RD OC #24-280
SAC		003.360	DH	00.702	DBL 54X263APC
SAC		004.062	DH	00.583	DBL 36X231APC
SAC		004.645	DH	00.002	
SAC		004.647	DH	00.047	LAMBERT RD UC 24-287L
SAC		004.694	DH	00.002	END BR 24-287R
SAC		004.696	DH	01.729	END BR 24-287L
SAC		006.425	DH	00.007	S REACH STONE LK 24-344
SAC		006.432	DH	01.674	END BR 24-344
SAC		008.106	DH	00.017	STONE LAKE CR BR 24-327
SAC		008.123	DH	00.370	EB 24-327
SAC		008.241	DR		NBOFF TO HOOD FRANKLIN
SAC		008.331	DR		SB ON FR EB HD FRANKLIN
SAC		008.440	DR		NB ON FR EB HD FRANKLIN
SAC		008.493	DH	00.342	HOOD-FRNKLN RD OC 24326
SAC		008.542	DR		SBON FR WB HD/FRANKLIN
SAC		008.654	DR		NBON FR WB HD/FRANKLIN
SAC		008.745	DR		SBOFF TO HOOD FRANKLIN
SAC		008.835	DH	00.006	MID REACH STNE LK 24345
SAC		008.841	DH	00.539	END BR 24-345
SAC		009.380	DH	00.007	STONE LAKE BR 24-346
SAC		009.387	DH	01.439	END BR 24-36
SAC		010.627	DR		NB OFFTO ELK GROVE BLVD
SAC		010.826	DH	00.782	ELK GROVE BLVD OC 24277
SAC		010.882	DR		SB ON FR ELK GROVE BLVD
SAC		011.057	DR		SB OFFTO ELK GROVE BLVD
SAC		011.112	DR		NB ON FR ELK GROVE BLVD
SAC		011.608	DH	00.429	
SAC		011.877	DR		NB OFF TO LAGUNA BLVD
SAC		012.037	DH	00.364	LAGUNA BLVD OC 24-359
SAC		012.188	DR		SB ON FR LAGUNA BLVD
SAC		012.190	DR		NB ON FR LAGUNA BLVD
SAC		012.372	DR		SB OFF TO LAGUNA BLVD
SAC		012.401	DH	00.007	S REACH BCH LK BR 24347
SAC		012.408	DH	00.517	END BR 24-347
SAC		012.925	DH	00.009	
SAC		012.934	DH	00.100	BEACH LAKE BR 24-262R
SAC		013.034	DH	00.009	EB 24-262L
SAC		013.043	DH	01.265	EB 24-262R
SAC	SAC	014.308	DH	00.591	
SAC	SAC	014.899	DH	00.630	RIVER BEND OC 24-305
SAC	SAC	015.529	DH	00.047	
SAC	SAC	015.576	DH	00.013	ST 5/160 SEP-OH 24-296L
SAC	SAC	015.589	DH	00.024	RTE5/160 SEP-OH 24-296R
SAC	SAC	015.613	DH	00.068	JCT ST 160
SAC	SAC	015.681	DH	00.013	EB #24-296L
SAC	SAC	015.694	DH	00.081	EB #24-296R
SAC	SAC	015.775	DH	00.273	
SAC	SAC	015.947	DR		NB OFF TO POCKET RD
SAC	SAC	016.025	DR		SB ON FR EB POCKET RD
SAC	SAC	016.048	DH	00.099	
SAC	SAC	016.081	DR		NB ON FR EB POCKET RD
SAC	SAC	016.147	DH	00.553	POCKET RD OC 24-263
SAC	SAC	016.201	DR		SB ON FR WB POCKET RD
SAC	SAC	016.287	DR		NBON FR WB POCKET RD
SAC	SAC	016.350	DR		SB OFF TO POCKET RD
SAC	SAC	016.700	DH	00.219	S LD PK DR OC 24-259
SAC	SAC	016.891	DR		NB OFF TO FLORIN RD
SAC	SAC	016.919	DH	00.057	

11/20/2012

DIST 03 RTE 005 DIR S-N

CO.	CITY	POSTMILE	G RF PT	LENGTH	DESCRIPTION
SAC		000.018	DH	00.199	SAN JOAQUIN CO LN
SAC		000.217	DH	00.492	EB(MOKELUMNE) 29-197R/L
SAC		000.709	DH	00.040	MIDDLE SLOUGH 24-260R/L
SAC		000.749	DH	00.289	EB #24-260 R/L
SAC		001.038	DH	00.177	LOST SLOUGH 24-261 R/L
SAC		001.215	DH	00.916	EB #24-261 R/L.

SAC SAC 016.350 DR SB OFF TO POCKET RD
SAC SAC 016.700 DH 00.219 S LD PK DR OC 24-259
SAC SAC 016.891 DR NB OFF TO FLORIN RD
SAC SAC 016.919 DH 00.057

11/20/2012

- District
- Route number
- Direction
- Date of sequence listing

Sequence Listing Columns

DIST 03 RTE 005 DIR S-N

CO.	CITY	POSTMILE	GRP PT	LENGTH	DESCRIPTION
SAC	SAC	016.924	DR		SB ON FR FLORIN RD
SAC	SAC	016.976	DH	00.209	
SAC	SAC	017.006	DR		NB OFF TO WB FLORIN RD
SAC	SAC	017.007	DR		NBOFF TO EB FLORIN RD
SAC	SAC	017.037	DR		SB ON FR EB FLORIN RD
SAC	SAC	017.038	DR		SB ON FR WB FLORIN RD
SAC	SAC	017.185	DH	00.395	FLORIN RD OC 24-264

- County (CO)
- CITY
- POSTMILE
- GRP: Highway group (also referred to as Postmile Suffix)

Code	Code Description
R	Right independent alignment
L	Left independent alignment
D	Divided Highway
U	Undivided Highway
X	Unconstructed highway

- FT: File Type

Code	Code Description
H	Highway
I	Intersection
R	Ramp

- LENGTH (or DISTANCE TO NXT POINT)
  - Distance to next point in miles
- DESCRIPTION
  - Location description or landmark (bridge number, name of intersecting road, ramp name, etc.)

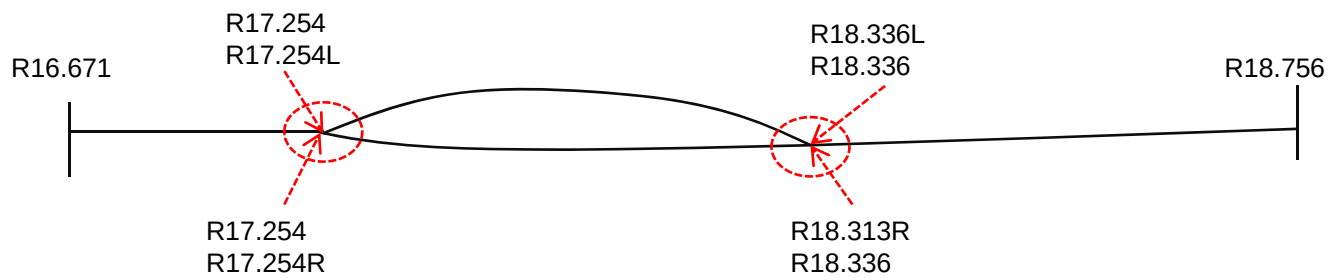
Sequence List Organization

- Ordered by route number, county, and route direction
- Although the State Highway roadway runs in two directions (northbound/southbound or eastbound/westbound), Caltrans (TSN) considers it a single alignment.
  - However, there are situations where TSN specifies postmiles for both the right and left alignment.
  - Independent alignments occur when the alignment separates and may have different lengths.
  - Separate postmiles for the right and left alignments, and an "R" and "L" suffix is used to differentiate the two.

Independent Alignments

DIST 12 RTE 091 **DIR W-E**

CO.	CITY		POSTMILE	G RF PT	LENGTH	DESCRIPTION
ORA	ANA	R	016.671	DR		WB OFF GYPSUM CANYON RD
ORA	ANA	R	016.870	DR		WB OFF TO SB 241
ORA	ANA	R	017.254	RH	00.512	BEG INDEP ALIGNMENT
ORA	ANA	R	017.766	RH	00.184	ON RAMP RT
ORA	ANA	R	017.766	RR		EB OFF COAL CANYON RD
ORA	ANA	R	017.950	RH	00.024	COAL CYN RD UC 55-507RT
ORA	ANA	R	017.974	RH	00.339	END BR 55-507 RT
ORA	ANA	R	018.126	RR		EB ON COAL CANYON RD
ORA	ANA	R	018.313	RH	00.000	END INDEP ALIGN RT
ORA	ANA	R	017.254	LH	00.540	BEG INDEP ALIGN LT
ORA	ANA	R	017.794	LH	00.179	ON RAMP LT
ORA	ANA	R	017.794	LR		WB ON COAL CANYON RD
ORA	ANA	R	017.973	LH	00.024	COAL CYN RD UC 55-507LT
ORA	ANA	R	017.997	LH	00.339	END BR 55-507 LT
ORA	ANA	R	018.199	LR		WB OFF COAL CANYON RD
ORA	ANA	R	018.336	DH	00.420	END INDEP ALIGNMENT
ORA	ANA	R	018.756	DH	00.149	WB ON GREEN RIVER RD



Realignments, Relinquishments, or Adoptions

DIST 05 RTE 129 DIR W-E

CO.	CITY		POSTMILE	GRF PTG	LENGTH	DESCRIPTION
SCR		L	000.000	UH	00.026	JCT 1. 129/1SEP 36-91
SCR		L	000.026	UH	00.030	END BR NO 36-91
SCR		L	000.056	DH	00.154	
SCR		L	000.120	DI		RAMP INTERSECTION
SCR		L	000.210	DH	00.126	
SCR		L	000.336	DH	00.620	FIRST ST
SCR		L	000.336	DI		JUDD RD
SCR		L	000.511	DI		INDUSTRIAL RD LT
SCR		L	000.810	DI		HARVEST DRIVE
SCR	WAT	L	000.956	DH	00.142	
SCR	WAT	L	001.098	DH	00.080	LOCUST ST
SCR	WAT	L	001.098	DI		LOCUST ST
SCR	WAT	L	001.178	DH	00.291	GX-WALKER ST RR XING
SCR	WAT	L	001.178	DI		WALKER ST SPRR-XING
SCR	WAT	L	001.250	DI		MENKER ST FIRST ST
SCR	WAT	L	001.310	DI		FIRST ST GROVE ST
SCR	WAT	L	001.380	DI		RODRIGUES ST
SCR	WAT	L	001.469 EQUATES TO			
SCR	WAT		000.000 E	DH	00.058	MAIN ST
SCR	WAT		000.000	DI		MAIN ST
SCR	WAT		000.058	UH	00.054	
SCR	WAT		000.060	UI		UNION ST

- New beginning of route is L0.000
- New section added due to a realignment, L0.000-L1.469
- Original beginning of route is 0.0

Route Breaks

- Occur where a route ends at one location then continues in another location. This typically occurs at a junction, where one route traverses another, or when a route is interrupted at an area with no State Highway.

KER	WAS	R	025.124	DI	*P*	W JCT RTE 46(BREAK IN
KER	WAS	R	025.125	DH	00.000	WEST JCT ST 46-RTE BRK
KER		R	025.125	EQUATES TO		
KER			025.187	E UH	00.068	EAST JCT ST 46
KER			025.187	UI	*P*	JCT RTE 46, FAMOSO HWY

Postmile Equations

- **Equation points (forward and backward)** - Equation points occur where a section of a highway has been realigned and is either shortened, lengthened, or is a route break. With the exception of route breaks, the postmiles that equate to each other exist at the same location on the route.

Finding a Postmile Location

- Postmile Lookup Using a Sequence Listing
- Interactive Postmile Lookup Tools

Finding a Postmile Location

SR-128 Concept Summary Table

Segment	Segment Description	Existing Facility	20-25 Year Capital Facility Concept	20-25 Year System Operations and Management Concept
1	Solano/Yolo County line to County Road 87E	2C	2C, Improve shoulder widths to better accommodate bicyclists	Maintain only
2	County Road 87E to I-505	2C	2C, Implement complete streets concepts	Targeted operational improvements including roundabouts
3	I-505 to SR 113	Existing county roads	Unconstructed	Route alignment and adoption not being pursued

Postmile Lookup Using a Sequence Listing

- Segment 1: Solano/Yolo County line to County Road 87E
- Postmile Range =
  - YOL 0.000 - YOL 7.550

DIST 03 RTE 128 DIR W-E

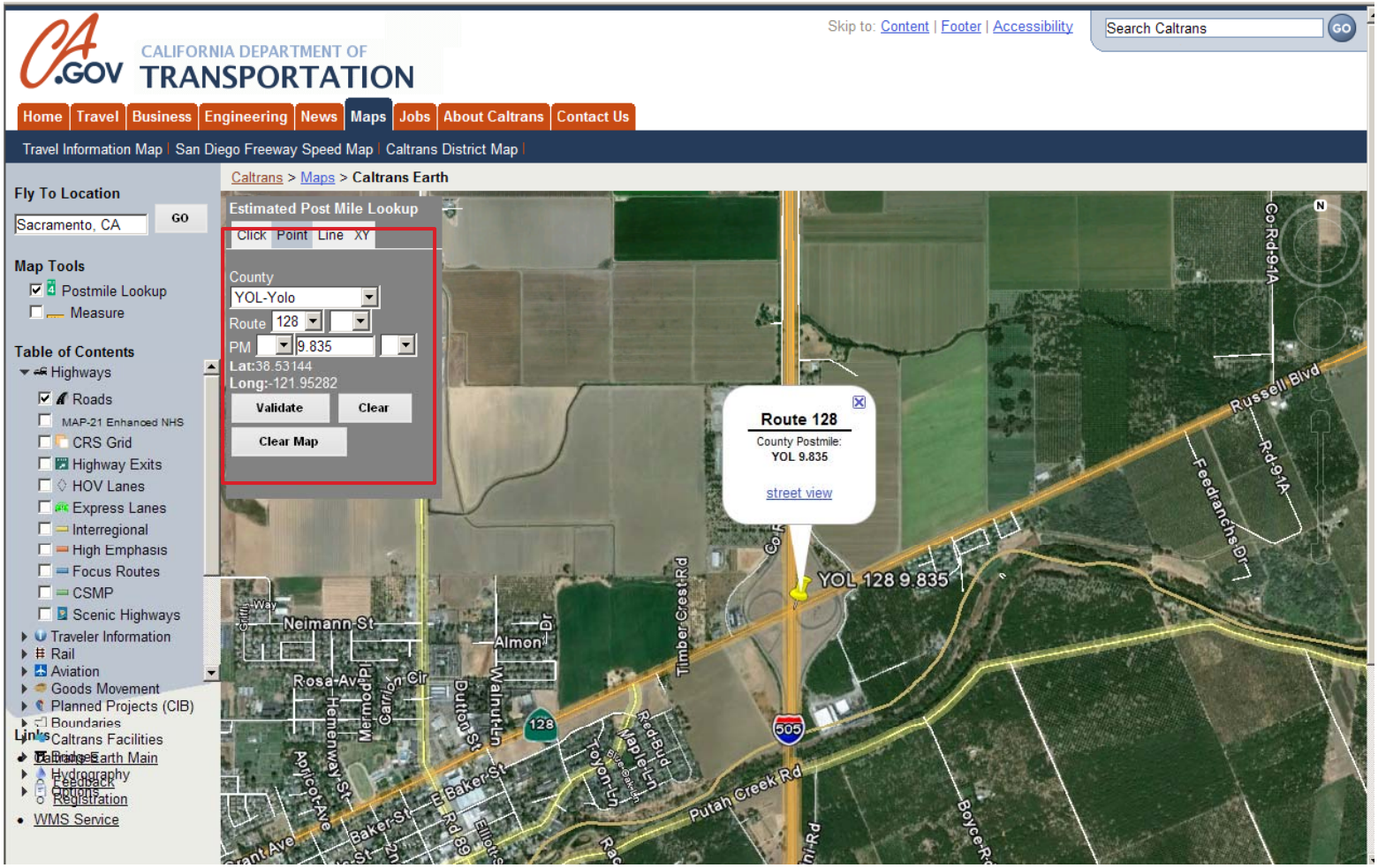
CO.	CITY		POSTMILE	GRF PT	LENGTH	DESCRIPTION
YOL			000.000	UH	00.052	PUTAH CR 23-99
YOL			000.052	UH	01.098	END BR 23-99
YOL			001.150	UH	00.160	(FISHING AREA 1)
YOL			001.310	UH	00.685	(FISHING AREA 2)
YOL			001.995	UH	00.085	
YOL			002.080	UH	01.020	(FISHING AREA 3)
YOL			002.080	UI		FISHING AREA 3 - RT
YOL			003.100	UH	00.240	(FISHING AREA 4)
YOL			003.100	UI		FISHING AREA 4 - RT
YOL			003.340	UH	01.250	(FISHING AREA 5)
YOL			003.340	UI		FISHING AREA 5 - RT
YOL			004.590	UH	00.490	COUNTY RD 86
YOL			004.637	UI		PLEASANT VLY RD(RD86)RT
YOL		R	005.080	UH	00.336	
YOL		R	005.229	UI		ROAD TO PUTAH CREEK RT
YOL		R	005.416	EQUATES TO		
YOL			005.430	E UH	01.087	
YOL			006.517	UH	00.005	SCHOOL DRAW 22 35
YOL			006.522	UH	00.018	
YOL			006.540	UH	01.010	COUNTY RD87V
YOL			006.540	UI		RD 87-L/THE HORSESHOE-R
YOL			007.065	UI		THE HORSESHOE(RD87A)-RT
YOL			007.300	UI		CO RD 87D - LT
YOL			007.550	UH	00.139	COUNTY RD 87E

Postmile Lookup Using a Sequence Listing

- Segment 2: County Road 87E to I-505
- Postmile Range = YOL 7.550 – YOL 9.835
- Use Postmile Lookup to validate Postmile
  - Point (ex: YOL 9.835)
  - Line (ex: Segment 2)
- Web-based Resources
  - Caltrans Earth
  - Postmile Query Tool

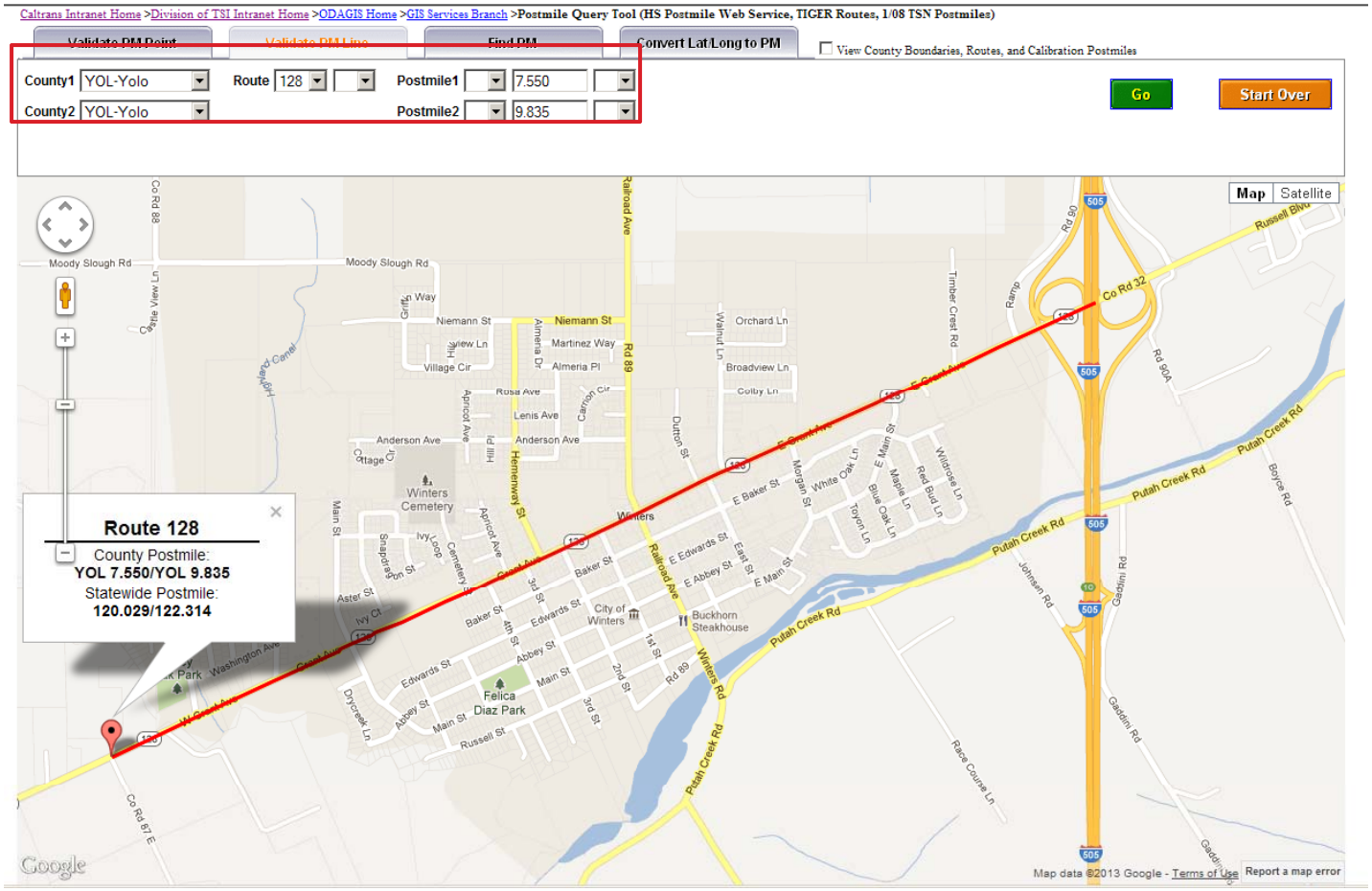
YOL		007.550	UH	00.139	COUNTY RD 87E
YOL		007.550	UI		CO RD 87E - RT
YOL		007.689	UH	00.005	APRICOT DRAW 22 36
YOL		007.694	UH	00.126	
YOL		007.761	UI		VALLEY OAK DR - LT
YOL	WIN	007.820	UH	00.600	
YOL	WIN	007.930	UI		TAYLOR ST - LT
YOL	WIN	008.123	UI		MAIN ST - RT
YOL	WIN	008.370	UI		CEMETERY DR - LT
YOL	WIN	008.420	UH	00.350	FOURTH ST
YOL	WIN	008.420	UI		FOURTH ST - RT
YOL	WIN	008.466	UI		APRICOT AVE - LT
YOL	WIN	008.505	UI		THIRD ST - RT
YOL	WIN	008.545	UI		HEMENWAY ST - LT
YOL	WIN	008.593	UI		SECOND ST - RT
YOL	WIN	008.680	UI		FIRST ST - RT
YOL	WIN	008.770	UH	00.090	RAILROAD ST
YOL	WIN	008.770	UI		RAILROAD AVE
YOL	WIN	008.860	UH	00.330	RR XING REMOVED 06/85
YOL	WIN	008.906	UI		DUTTON ST - LT
YOL	WIN	008.935	UI		EAST ST - RT
YOL	WIN	008.990	UI		WALNUT LANE - LT
YOL	WIN	009.149	UI		MORGAN ST - RT
YOL		009.190	UH	00.160	
YOL	WIN	009.350	UH	00.020	
YOL		009.370	UH	00.438	
YOL		009.662	UI		CO RD 90 - LT
YOL		009.718	UI		505, SB ON-OFF RAMPS
YOL		009.808	UH	00.027	RTE 128 505 SEP 22 110
YOL		009.835	XH	10.425	

Caltrans Earth Postmile Lookup



- Verify that YOL 9.835 where SR-128 intersects I-505

Postmile Query Tool



- Verify that Postmile Range, YOL 7.550 –YOL 9.835, matches segment description County Road 87E to I-505

Postmile Look-up Using a Sequence Listing

- Segment 3:
  I-505 to SR-113
  - Postmile Range =
    YOL 9.835 –
    YOL 20.260

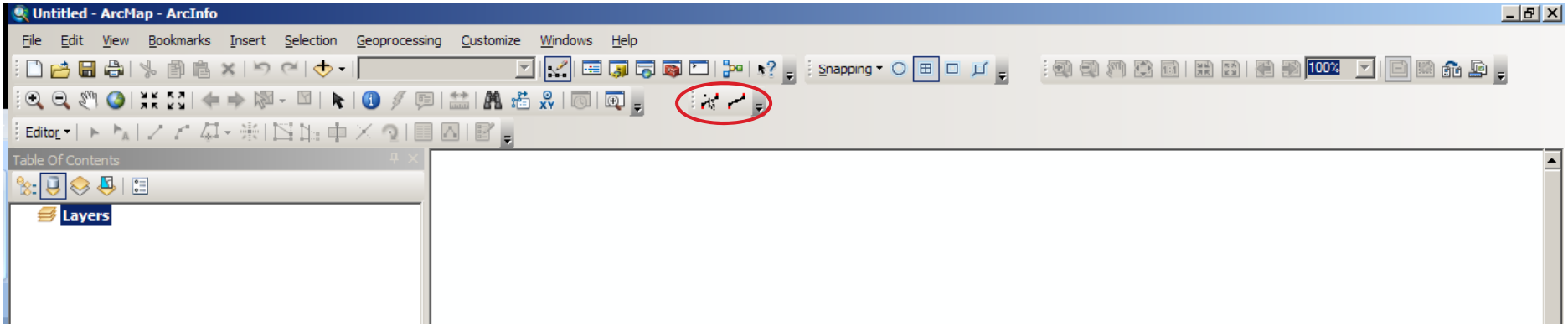
YOL	009.835	XH	10.425	
YOL	020.260	XH	00.000	JCT 113. END OF COUNTY

Postmile Tool in ArcMap

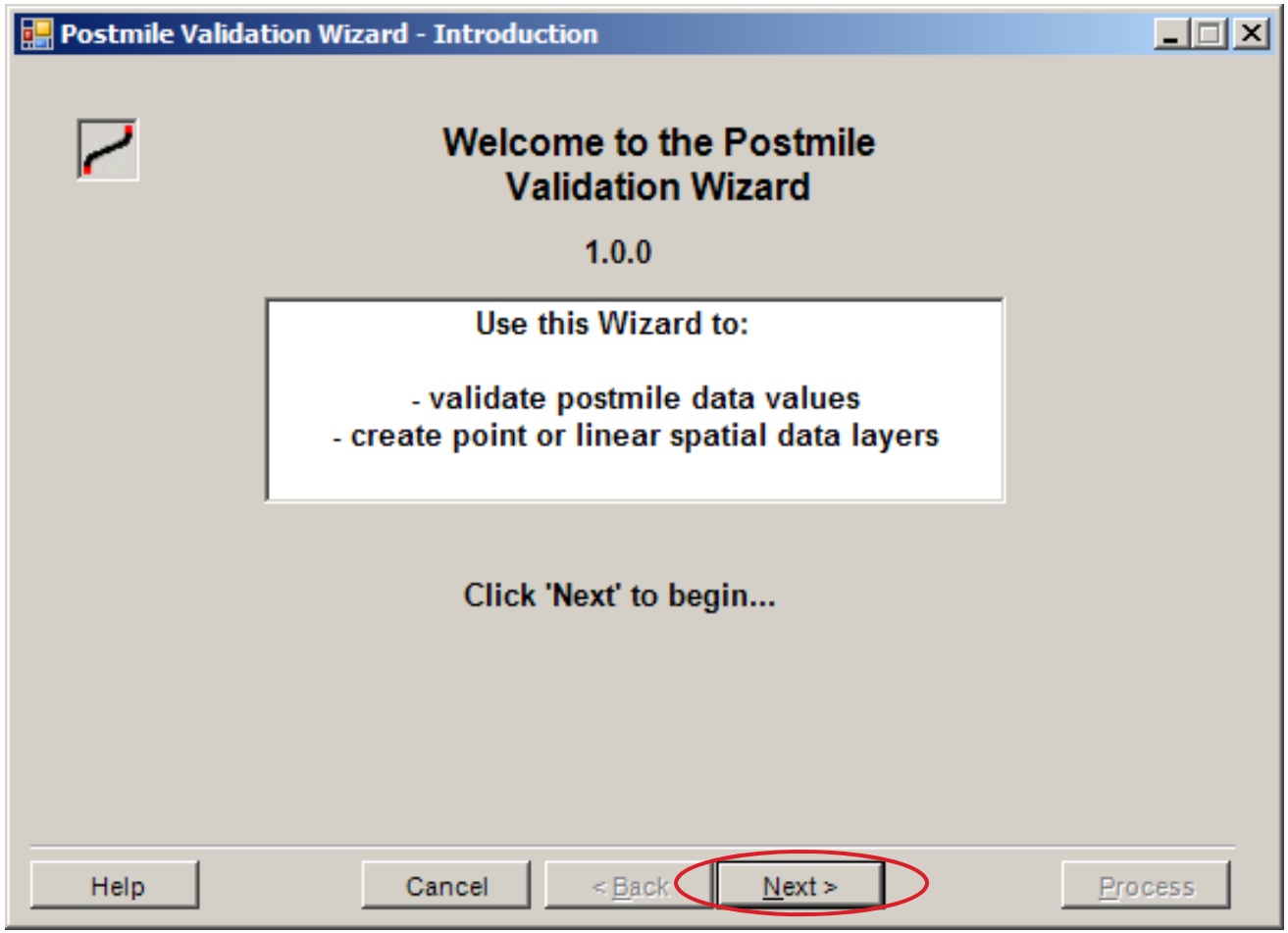
Postmile Toolbar in ArcMap

- Allows user to create a point or line shapefile based on postmile locations
- Note for all of these postmile query/validation tools:
  - Unconstructed segments will not draw
    - They are not part of the underlying dataset that validates the data and returns the spatial location of the point or line.
- Link to download the Postmile tool:
  - http://onramp/tsi/odagis/gis/services/lrs/postmiletoolbar/postmiletoolbar.php

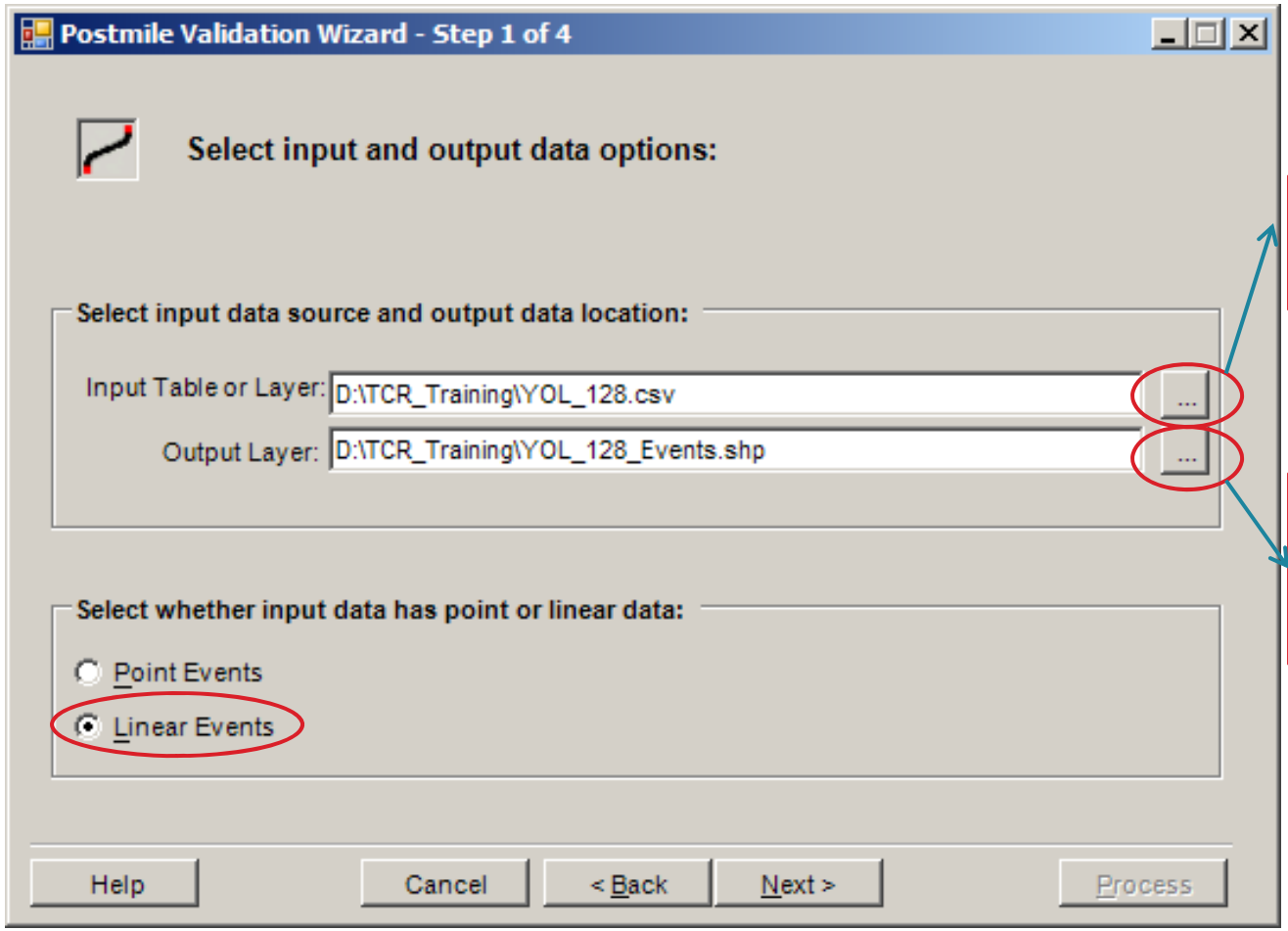
Postmile Toolbar in ArcMap



Postmile Toolbar in ArcMap



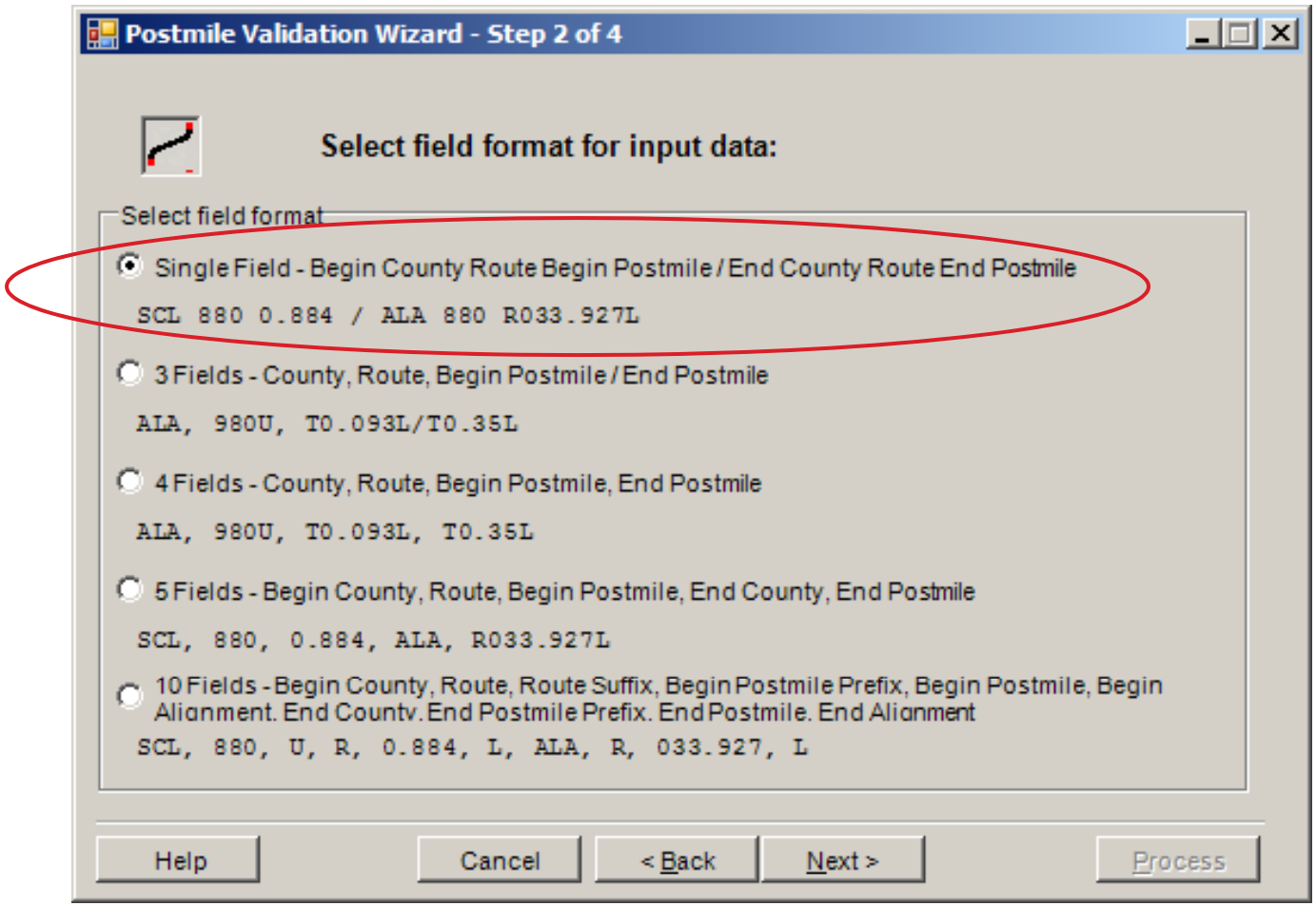
Postmile Toolbar in ArcMap



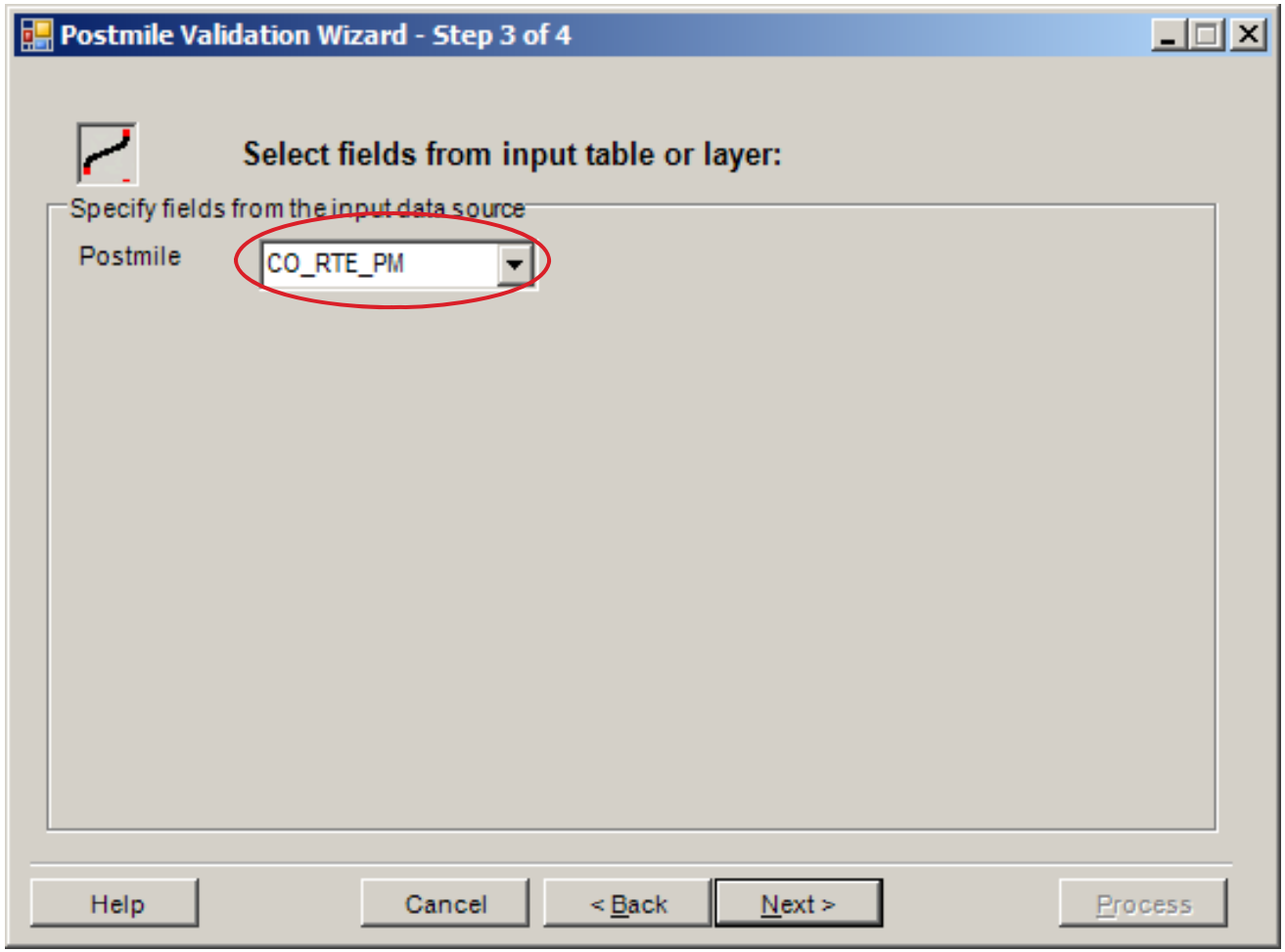
Click to navigate to file

Click to indicate where to save new file

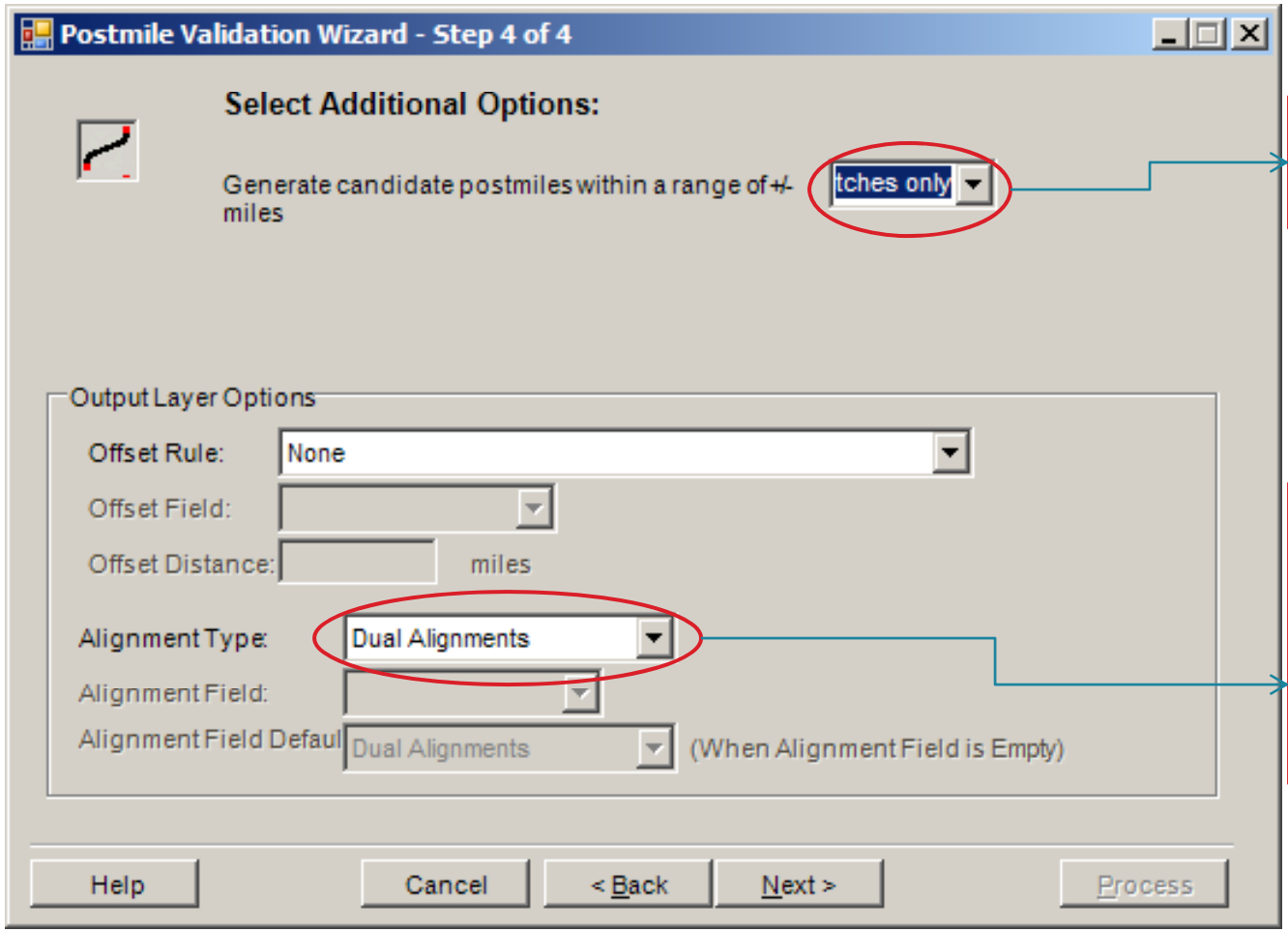
Postmile Toolbar in ArcMap



Postmile Toolbar in ArcMap



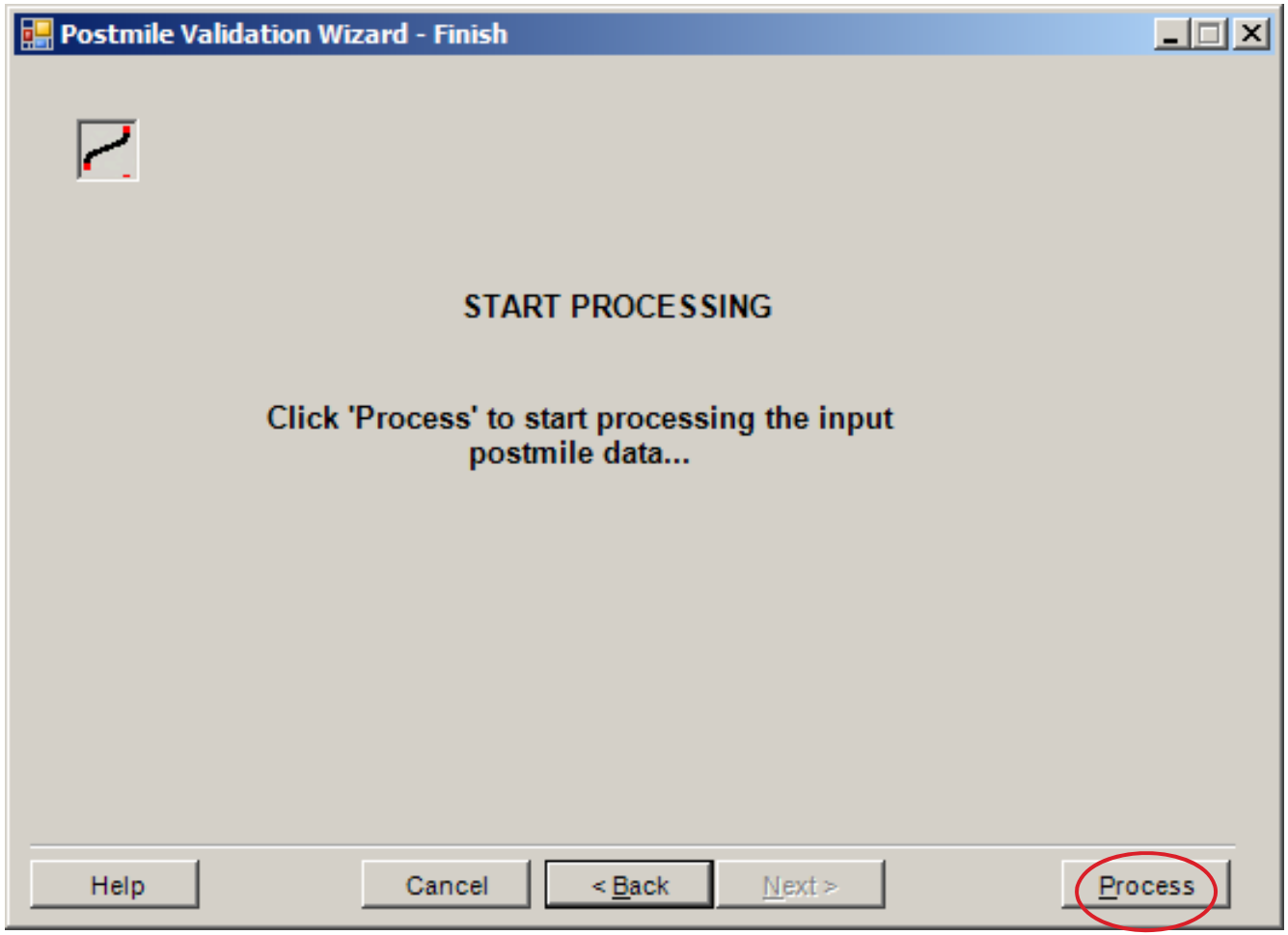
Postmile Toolbar in ArcMap



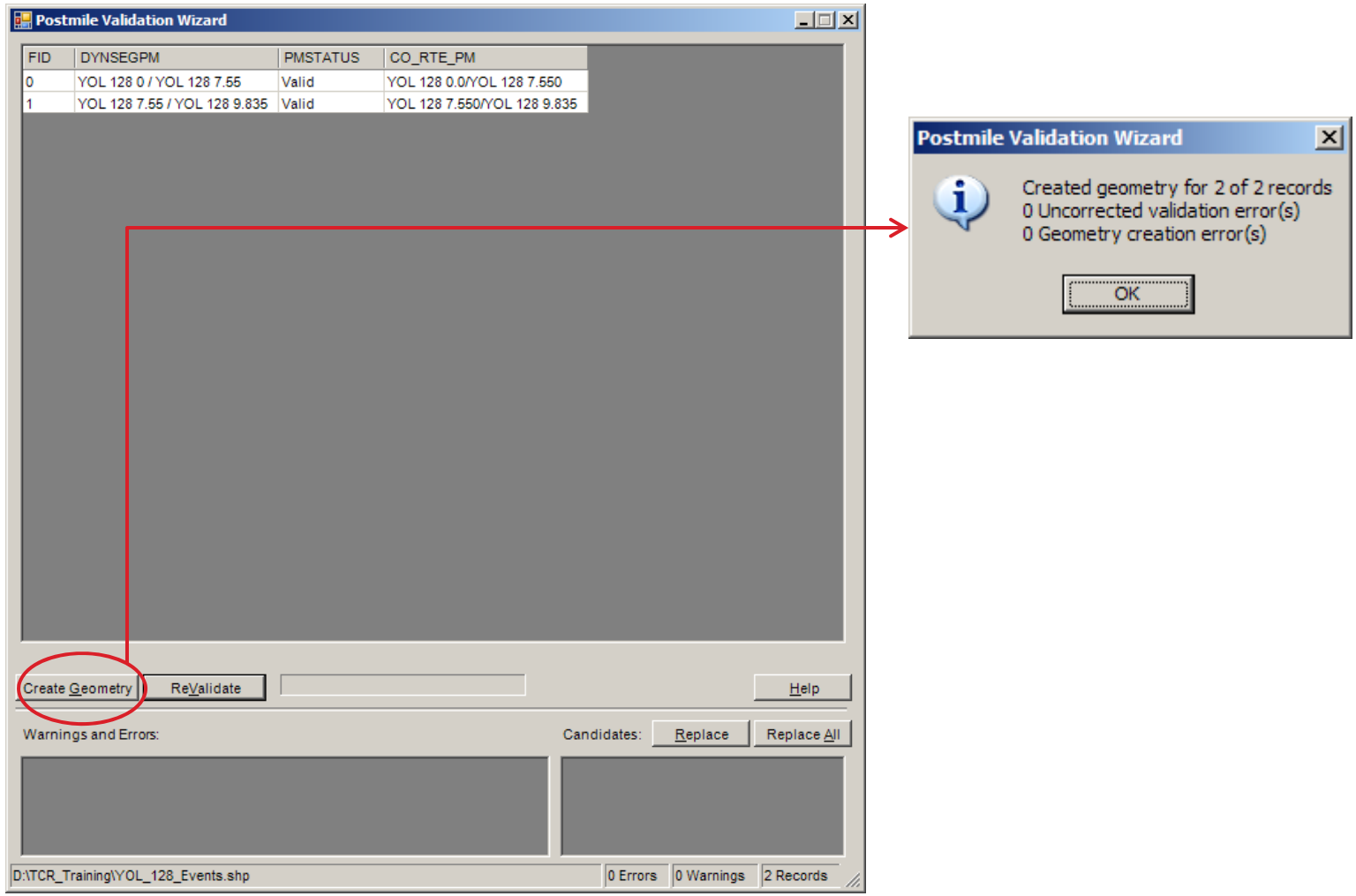
Select 'Matches Only'

Options are:
- Dual Alignment
- Single Alignment
- Centerline

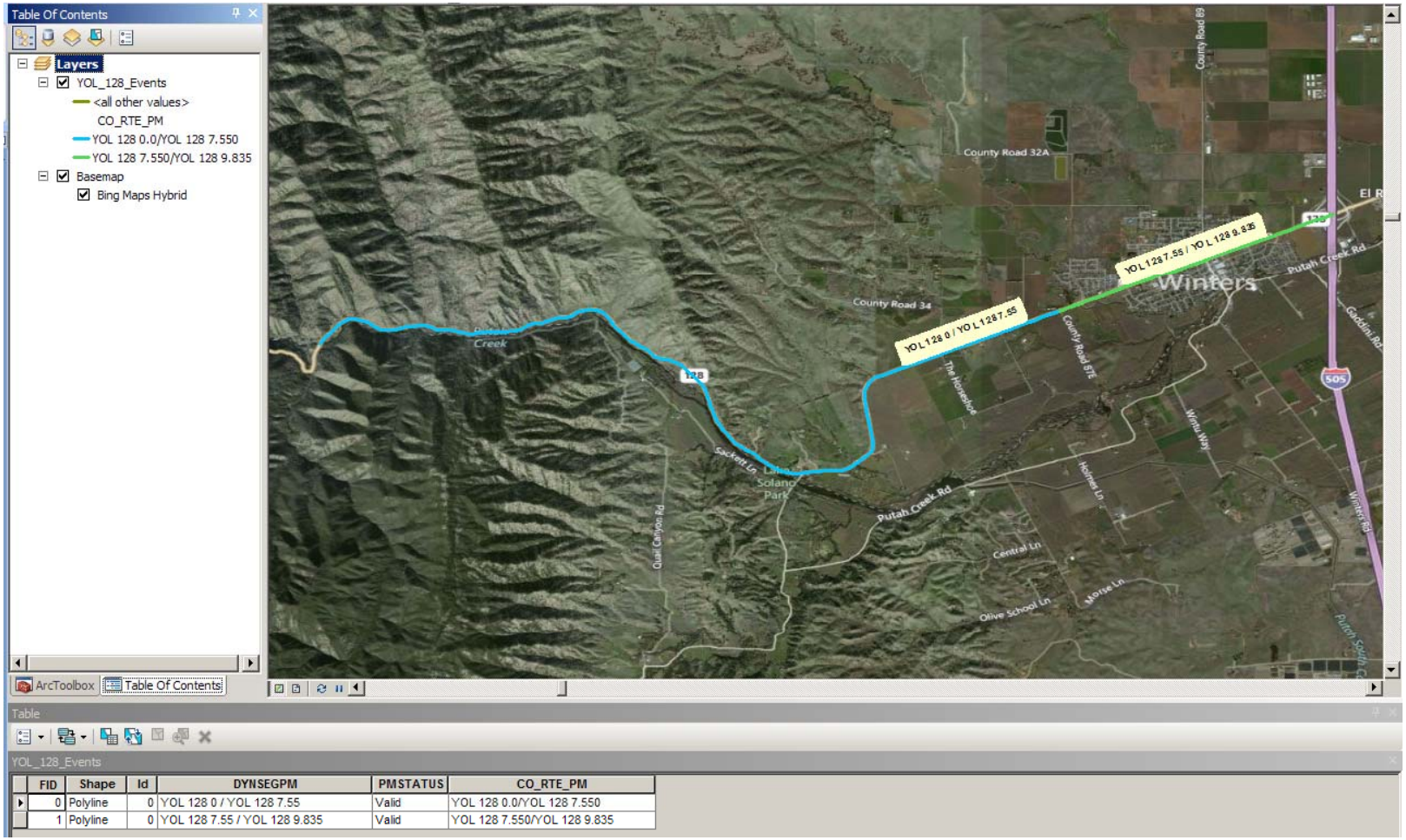
Postmile Toolbar in ArcMap



Postmile Toolbar in ArcMap



Postmile Toolbar in ArcMap



FID	Shape	Id	DYNSEGPM	PMSTATUS	CO_RTE_PM
0	Polyline	0	YOL 128 0 / YOL 128 7.55	Valid	YOL 128 0.0/YOL 128 7.550
1	Polyline	0	YOL 128 7.55 / YOL 128 9.835	Valid	YOL 128 7.550/YOL 128 9.835

Required vs. Optional TCR Maps

Required TCR Maps

Section	Sub-Section	Data Layers
Corridor Overview	Route Segmentation	***Required***: state highways, county boundaries, urbanized areas *Suggested*: major trip generators, key land uses
Corridor Overview	Freight	***Required***: ports, intermodal freight facilities, rail yards, rail lines, air cargo airports, ports of entry, truck network designations along the highway, warehouse districts, distribution centers, other freight generators, highway-rail at-grade crossings, truck lanes, weigh-in-motion sites, and freight bottlenecks

Optional TCR Maps

Section	Sub-Section	Data Layers
Corridor Overview	Bicycle Facility	Suggested: bicycle access prohibited, facility type, facility description, outside paved shoulder width, parallel facility present, segment ID (parallel bicycle facility), roadway name (parallel bicycle facility), terrain Additional: segment ID, postmiles, location description, outside paved shoulder width, facility description, distressed shoulder pavement condition, volume, role, posted speed limit
Corridor Overview	Pedestrian Facility	*Suggested*: pedestrian access prohibited, sidewalks, Additional: segment ID, postmiles, location description, sidewalk width, crossing distance, facility description, role, volume
Corridor Overview	Transit Facility	*Suggested*: transit routes (commuter bus, express bus/BRT, Traditional Bus, ferries, passenger intercity rail, high speed rail, Commuter Rail, light rail), collateral facilities (park & ride Lots, transit centers/intermodal facility), service provider name, route end points, stations-cities, stations-postmiles, parking spaces *Additional*: all on-highway system transit stops

GIS Resources

- Differences between GIS data resources
- GIS Data Viewers
- GIS Data Download
- GIS Direct Connections

GIS Resources

- Different kinds of data resources based on:
  - Data format and available software
  - Level of skill/knowledge
  - Complexity of analysis
  - Need to manipulate the data
- Statewide datasets vs. District datasets
  - Contact your District GIS Coordinator to find out district-specific or district-enhanced datasets

GIS Coordinators

- http://onramp/tsi/odagis/gis/GIScoordinators/GISCoordinatorsFebruary2013.pdf

Caltrans GIS Coordinators			
Districts	Name	Phone	Fax
DISTRICT 1			
GIS Contact	Kevin Danel	(707) 445-6359	(707) 445-6605
DISTRICT 2			
GIS Coordinator	Ruth Kiker	(530) 225-3111	(530) 225-3427
DISTRICT 3			
GIS Coordinator	Ryan Perian	(530) 741-5306	(530) 741-7123
Support	Russ Walker	(530) 741-7136	(530) 741-7123
DISTRICT 4			
GIS Coordinator	Dick Fahey	(510) 286-5761	(510) 286-5513
Support	Bob Sarnoff	(510) 286-6124	(510) 622-5229
DISTRICT 5			
GIS Coordinator	Andy Richardson	(805) 549-3571	(805) 549-3077
Support	Ed Schefter	(805) 549-3653	(805) 549-3233
DISTRICT 6			
GIS Coordinator	Kevin V. Ross	(559) 444-2564	(559) 444-2545)
Support	Hector Rangel	(559) 488-4151	(559) 445-5875)
DISTRICT 7			
GIS Coordinator	Mike Dean	(213) 897-0921	(213) 897-0460
Support	Anthony Phan	(213) 897-0990	(213) 897-0460
DISTRICT 8			
GIS Coordinator	Tim Savage	(909) 383-4719	(909) 383-4111
Support	Shaun Wells	(909) 383-1072	(909) 383-6404
DISTRICT 9			
GIS Coordinator	Brandon Fitt	(760) 872-0724	(760) 872-0754
DISTRICT 10			
GIS Coordinator	Sally Rodeman	(209) 948-7926	(209) 948-7164
Support	Bob Cunningham	(209) 948-7625	(209) 948-7789
DISTRICT 11			
GIS Coordinator	Barbara J. Kent	(619) 688-6002	(619) 688-6815
DISTRICT 12			
GIS Coordinator	Sarah Chamberlain	(949) 756-7826	(949) 756-4962
Support	Al Akans	(949) 724-2081	(949) 724-2591

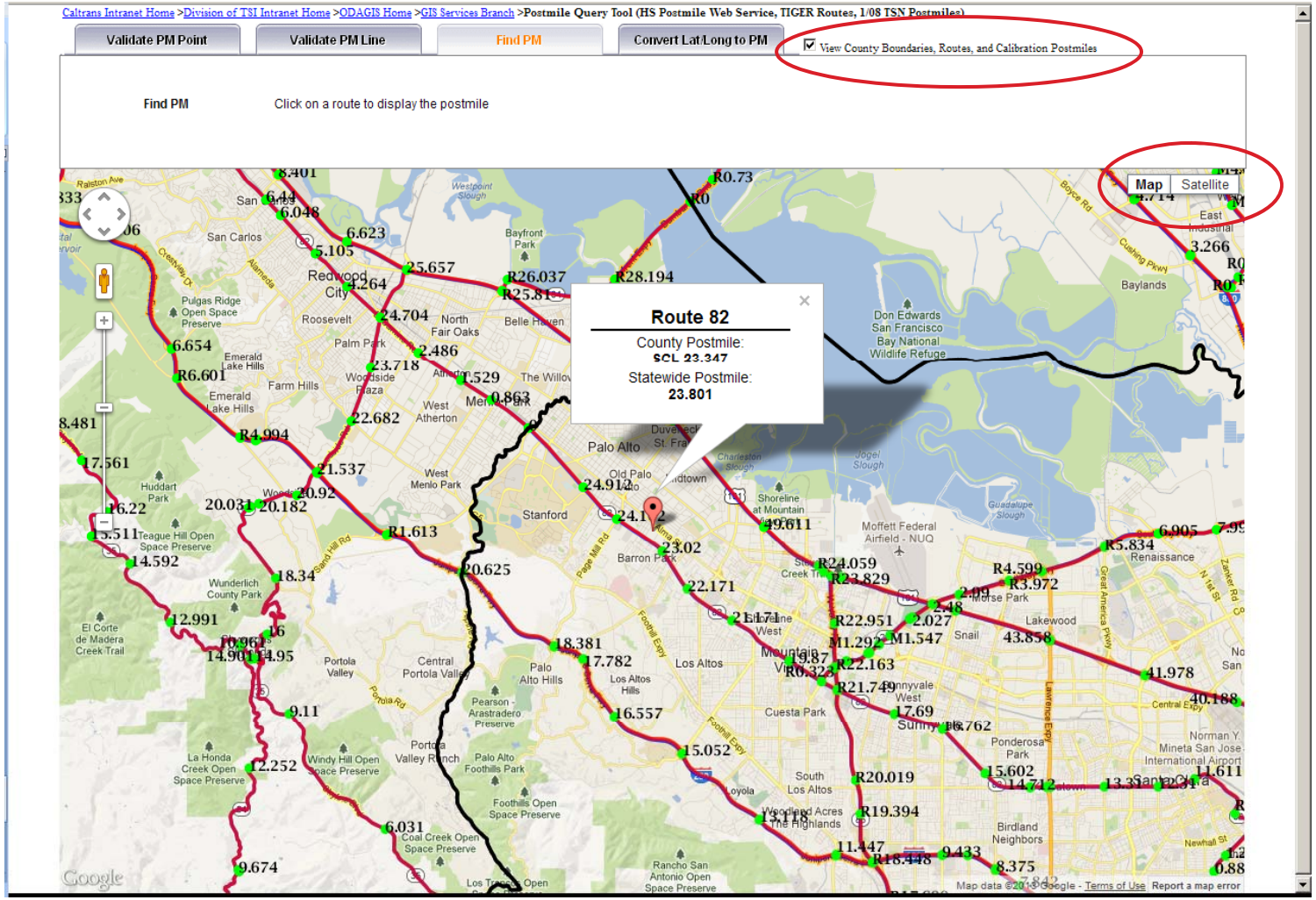
GIS Data Types

- Viewers
  - Allows user to view spatial data and make simple queries by clicking on an icon or specific location to return results
- Data download
  - Allows user to download spatial data in various formats
    - Layer, shapefile, kml, etc.
- Direct Connection
  - Provides a server based link to spatial data

GIS Resources by Type

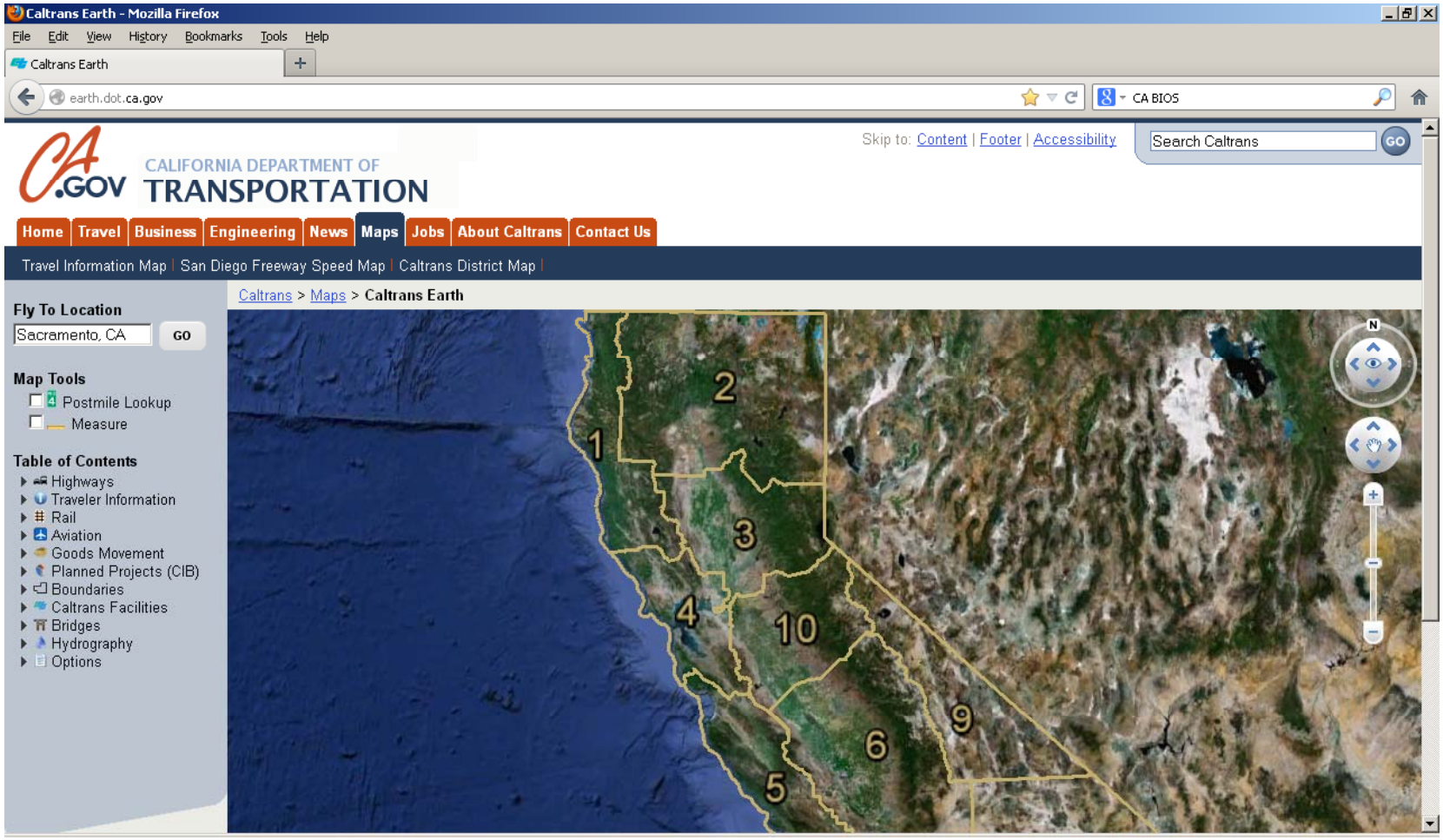
Name	Agency	Data Type	Link	Connection Instructions
DRISI GIS Library	Caltrans	Direct Connection	N/A	
Linear Referencing System (LRS)	Caltrans	Direct Connection	N/A	http://onramp.dot.ca.gov/tsi/odagis/gis/services/lrs/postmiletoolbar/DBconnect_AddRouteLayer.pdf
DRISI GIS Library	Caltrans	Download	http://www.dot.ca.gov/hq/tsip/gis/datalibrary/gisdatalibrary.html	N/A
Caltrans Earth	Caltrans	Download Viewer	http://earth.dot.ca.gov/ http://www.dot.ca.gov/hq/tsip/gis/caltrans_earth/globe_content.php	N/A
CT Earth	Caltrans	Download Viewer	N/A	http://onramp/tsi/odagis/gis/services/googleearth/googleearth.php
CNRA Atlas/Map Server	California Natural Resources Agency	Direct Connection	N/A	http://atlas.resources.ca.gov/docs/Connecting_with_ArcCatalog.pdf
Cal-Atlas Spatial Clearinghouse	California Natural Resources Agency	Download	http://atlas.ca.gov/download.html	N/A
California Environmental Resources Evaluation System (CERES)	California Natural Resources Agency	Download	http://ceres.ca.gov/	
California Environmental Information Clearinghouse (CEIC)	California Natural Resources Agency	Download	http://ceic.resources.ca.gov/catalog/	

GIS Viewer: Postmile Services



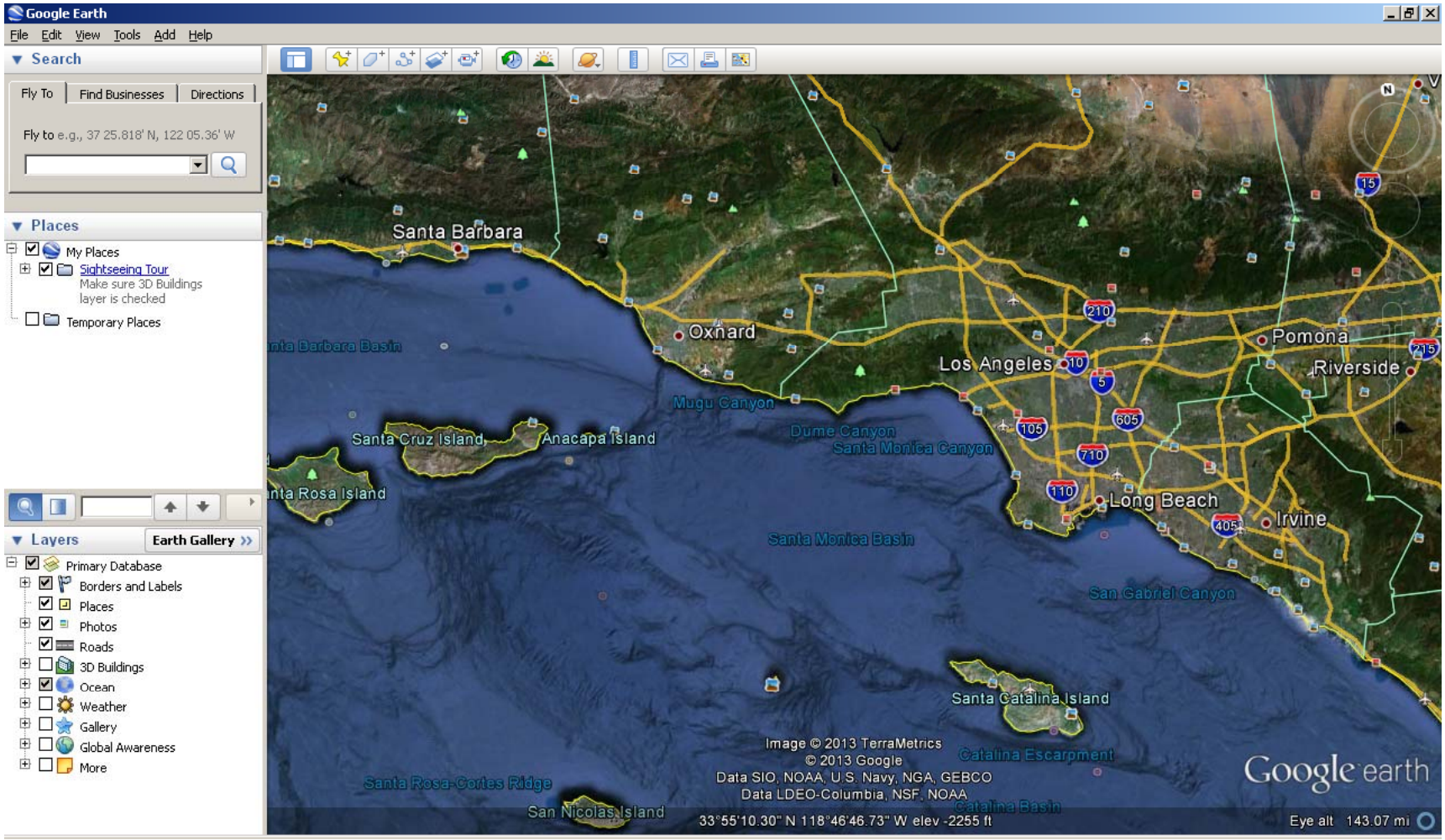
- http://svhqgisapp1.dot.ca.gov/postmilewebclient/PostmileQueryTool.html

GIS Viewer: Caltrans Earth



- http://earth.dot.ca.gov/

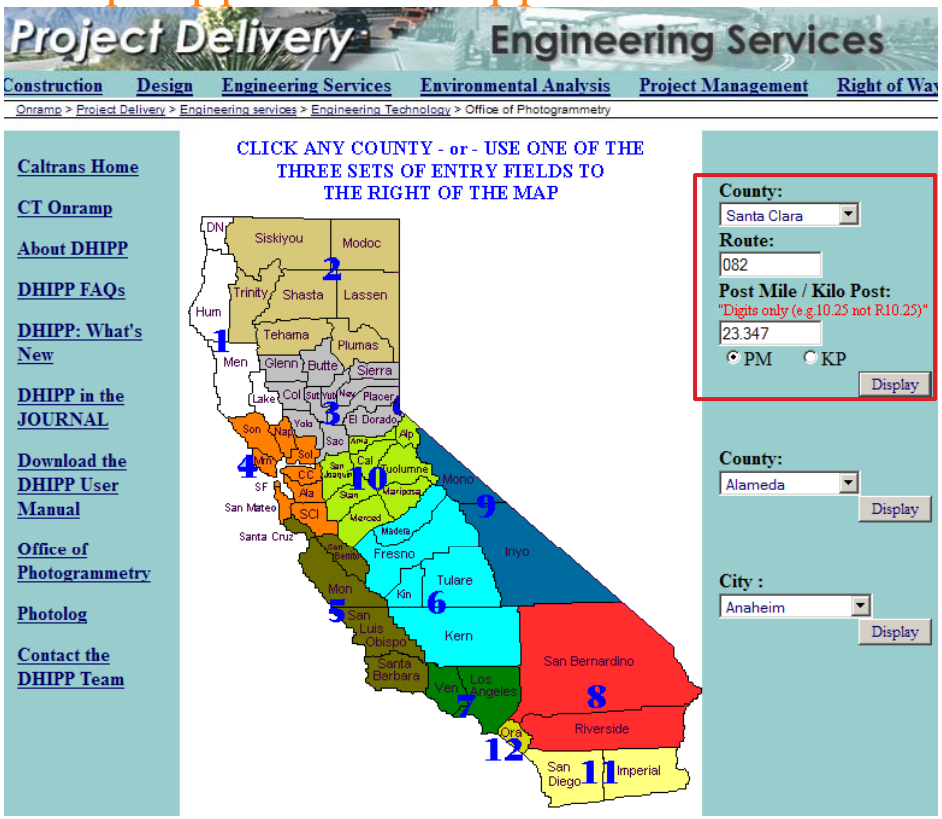
GIS Viewer: CT Earth



- http://onramp/tsi/odagis/gis/services/googleearth/googleearth.php

GIS Viewer: DHIPP

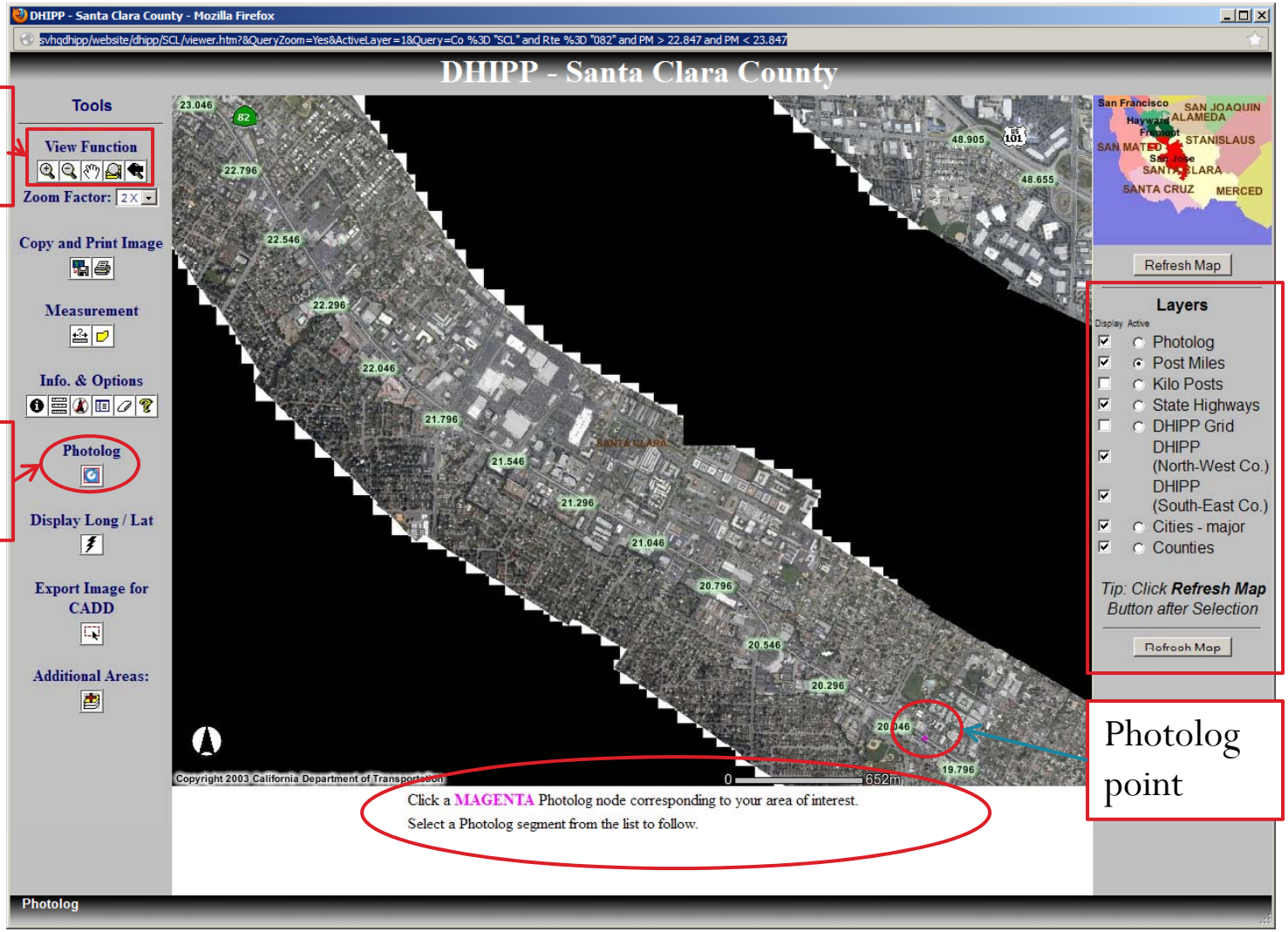
- Digital Highway Inventory Photography Program (DHIPP)
  - High-resolution aerial imagery of the SHS
  - http://svhqdhipp:8080/dhipp/doc/About_DHIPP.pdf



GIS Viewer: DHIPP

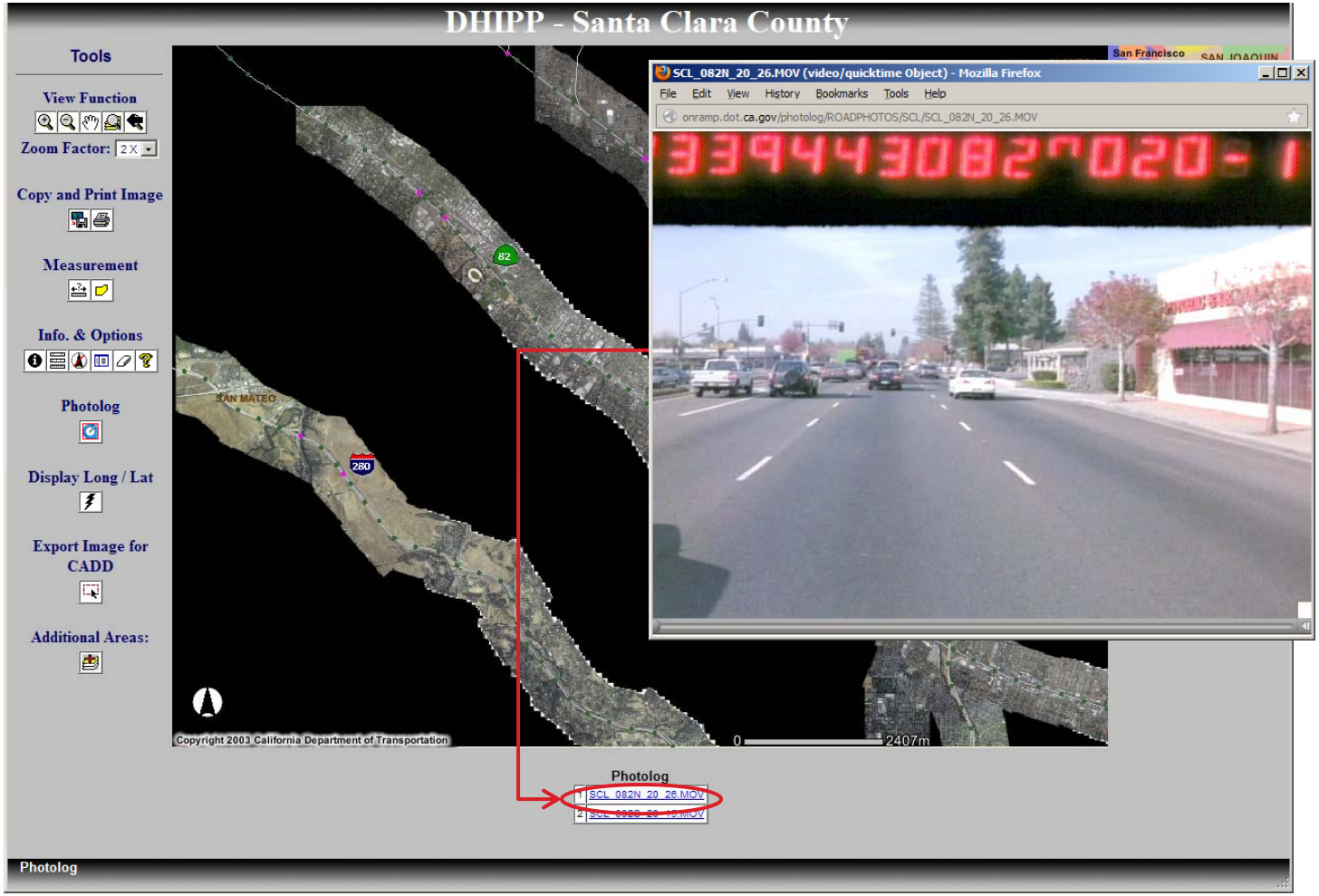
Zoom & Pan

Click on Photolog



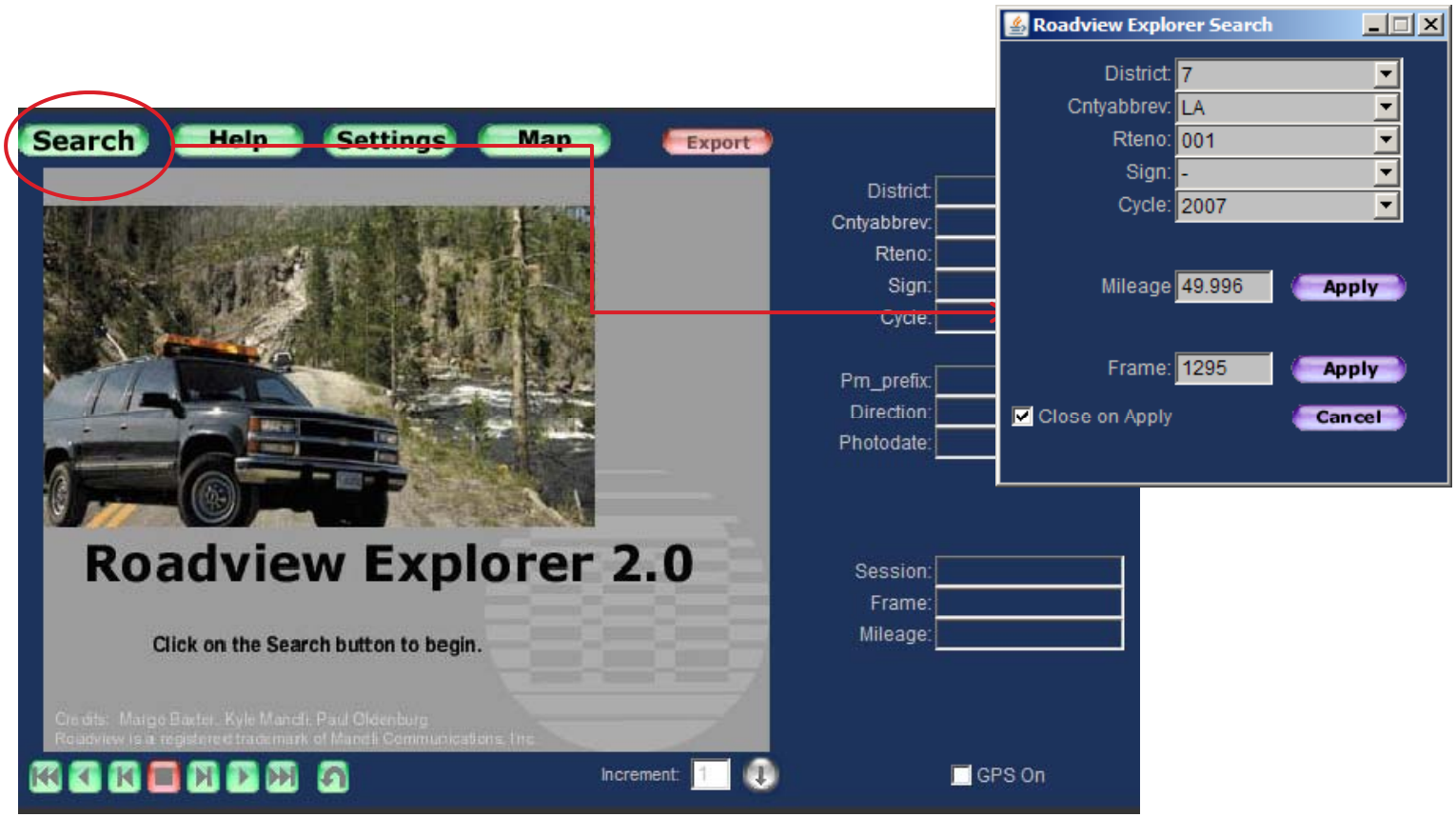
Photolog point

GIS Viewer: DHIPP/Photolog

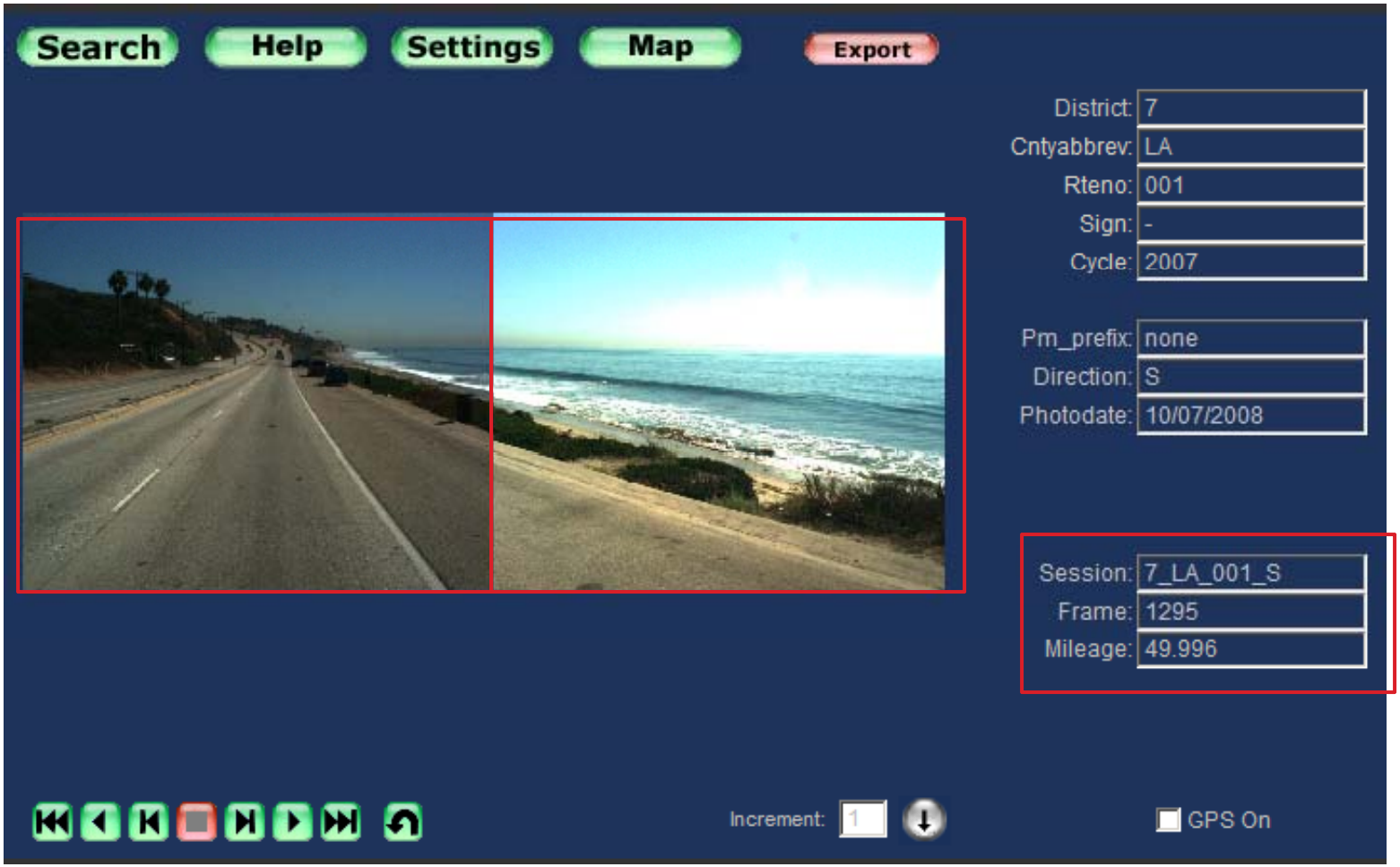


GIS Viewer: Digital Photolog

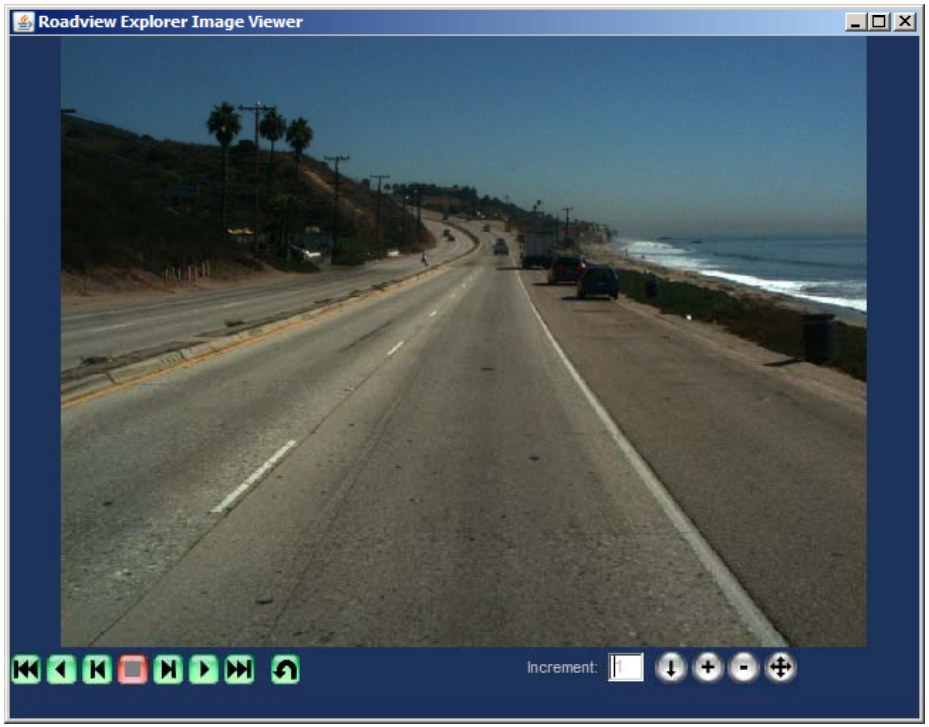
- Allows user to "drive" route

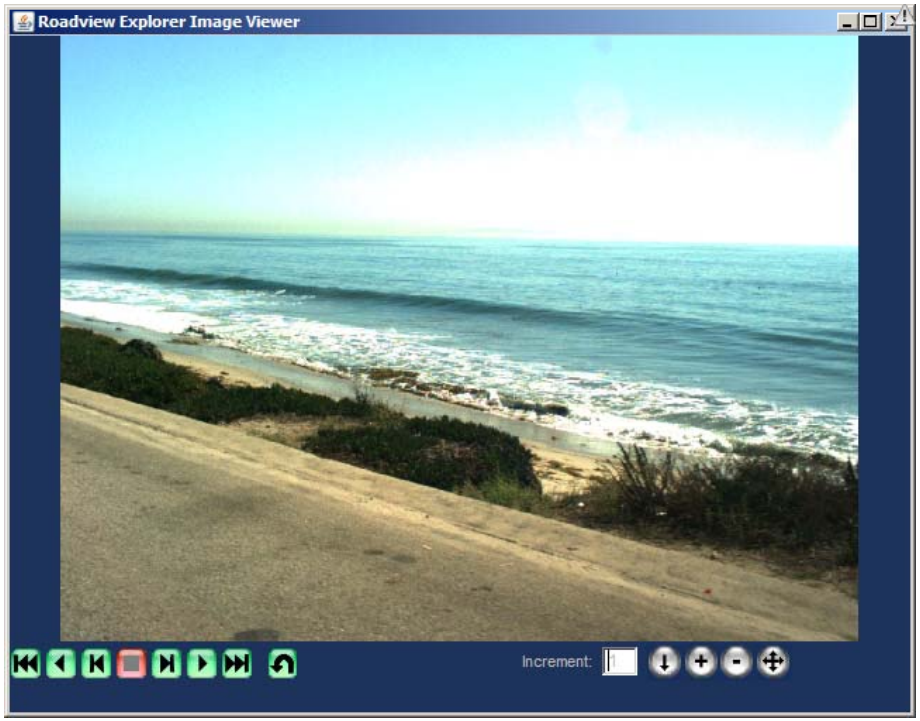


GIS Viewer: Digital Photolog



GIS Viewer: Digital Photolog





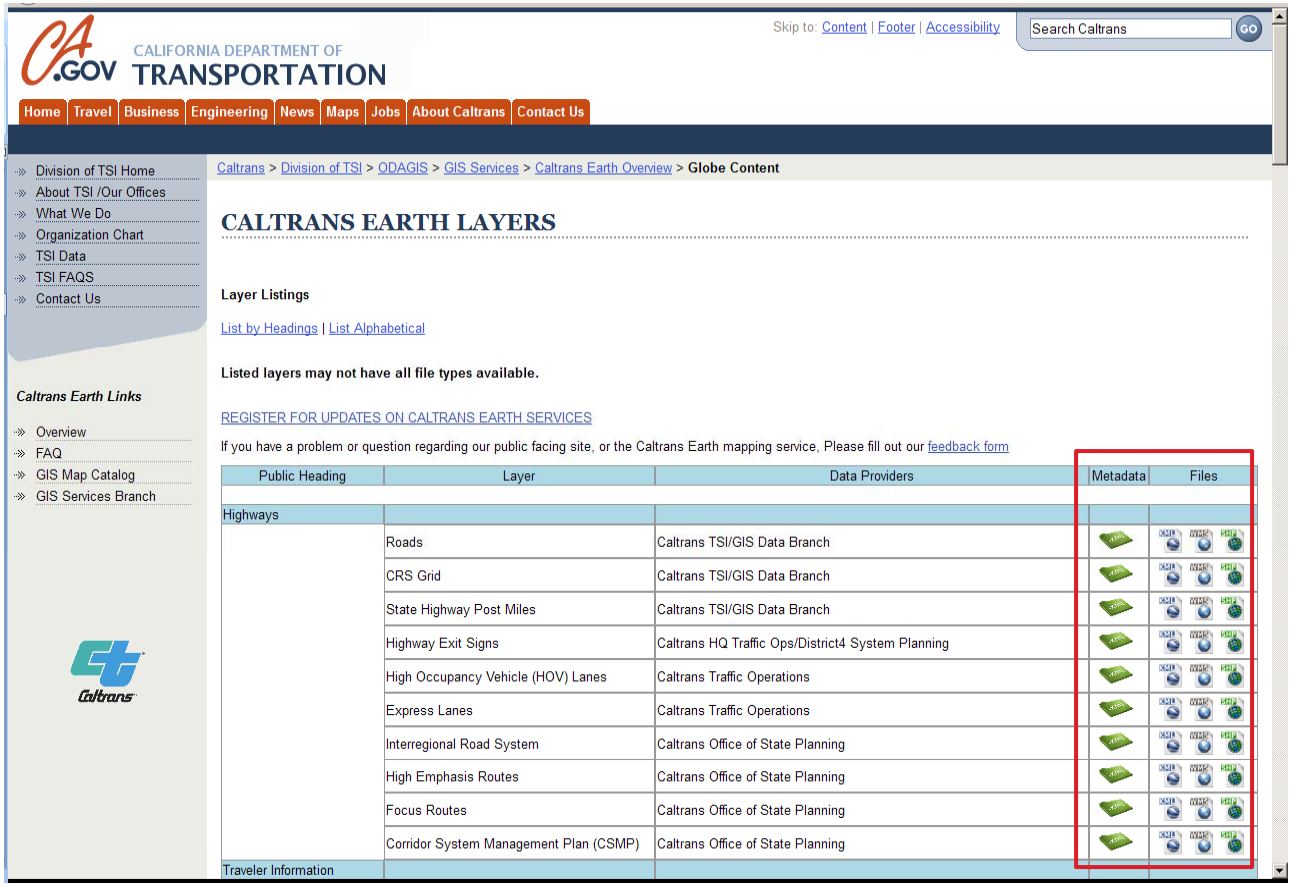
Other GIS Viewers

- Department of Fish and Wildlife's Biogeographic Information & Observation System (BIOS)
  - http://imaps.dfg.ca.gov/maps/bios_public/
  - http://imaps.dfg.ca.gov/viewers/biospublic/app.asp
- Google Maps
  - http://maps.google.com/maps?hl=en&tab=wl
- Bing
  - http://www.bing.com/maps/

GIS Data Download

- DRISI GIS Library (must request layers)
  - http://www.dot.ca.gov/hq/tsip/gis/datalibrary/gisdatalibrary.html
- Caltrans Earth – Globe Content
  - http://www.dot.ca.gov/hq/tsip/gis/caltrans_earth/globe_content.php
- Cal-Atlas Spatial Clearinghouse
  - http://atlas.ca.gov/download.html
- Department of Fish and Wildlife's Biogeographic Information & Observation System (BIOS)
  - https://map.dfg.ca.gov/bios/

GIS Data Download: Caltrans Earth



- http://www.dot.ca.gov/hq/tsip/gis/caltrans_earth/globe_content.php

Direct Connections

- DRISI GIS Library
  - Must have NFS Maestro Client 2008 (also known as Hummingbird Connectivity 2008) software installed on your computer (how-to steps available off-line)
  - Alternative Connection through ArcCatalog by establishing a spatial database connection
    - Click the Database Connections, and enter the following information:
      - Server: SVGCGIS6
      - Service: 5153
      - Database: GISLp1
      - Username: gisduser
      - Password: gisduser

Direct Connections

- Caltrans Earth WMS Service
  - http://onramp/tsi/odagis/gis/services/googleearth/CTEarth_WMS_guide.pdf
- Linear Referencing System (LRS) database
  - http://onramp.dot.ca.gov/tsi/odagis/gis/services/lrs/postmiletoolbar/DBconnect_AddRouteLayer.pdf
- CA Natural Resources Agency Map Server
  - http://atlas.resources.ca.gov/docs/Connecting_with_ArcCatalog.pdf

Matrix of TCR Datasets in GIS

Type	Subtype	Variable	Required (R), Optional (O), Required as Applicable (R/A)	Description/Directions	TCR Doc. Source
Route Segmentation		District	R	Provide the District number at the beginning of the project limits.	http://onramp.dot.ca.gov/tsi/ohsip/tasas/seglisting.php
Route Segmentation		County	R	Provide the 2-3 letter abbreviation for the county at the beginning of the project limits.	http://onramp.dot.ca.gov/tsi/ohsip/tasas/seglisting.php
Route Segmentation		Route	R	Provide the route number. Only needed for the Excel Project List table, not the DSMP Template table.	http://onramp.dot.ca.gov/tsi/ohsip/tasas/seglisting.php

DRISI GIS Library (Online)	DRISI GIS Library (Direct Connection)	Caltrans Earth (External Site)	CT Earth (Google Earth Interface)	Cal-Altas	CNRA Atlas/Map Server	Other	Data Owner	Layer
Y	Y	Y	Y	N	N		Caltrans	Caltrans Districts
Y	Y	Y	Y	Y	Y	LRS (Spatial Database Connection)	Caltrans	County Boundaries HYBRID_POINTS_ACTIVE
N	Y	Y	N	N	N	LRS (Spatial Database Connection)	Caltrans	State Highway Route HYBRID_ROUTES_ACTIVE

Other GIS Resources

- Your District GIS Coordinator
- Cities
- Counties
- MPOs/RTPAs
- Transit Agencies

Words of Advice

- Be critical of the data that you are using
- Look at the metadata
  - Date
  - Source
  - Description
- Go back to the source if you have questions about the data