

GIS Enabling HPMS – Unstovepiping the Pipes

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Caltrans

GIS-T 2007

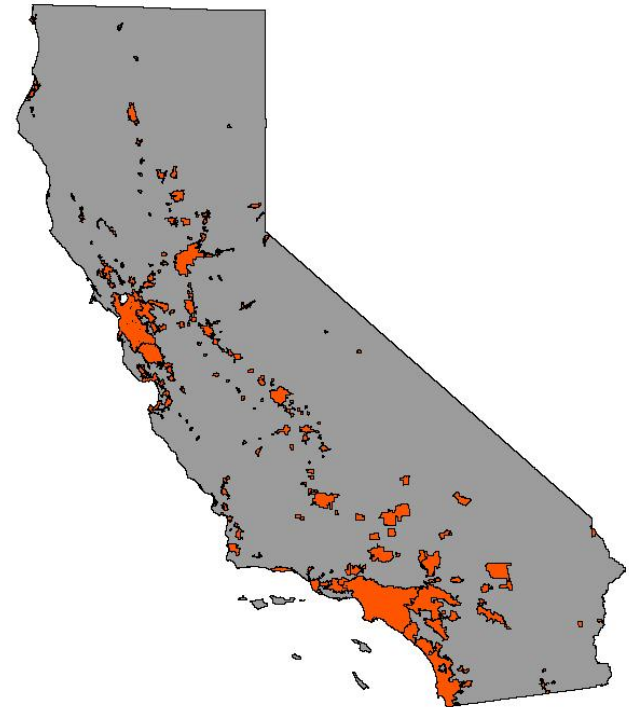
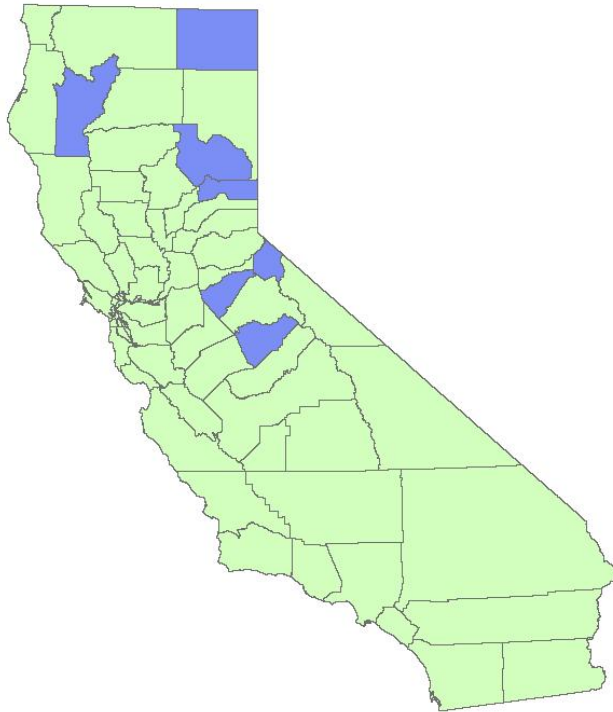
March 26, 2007



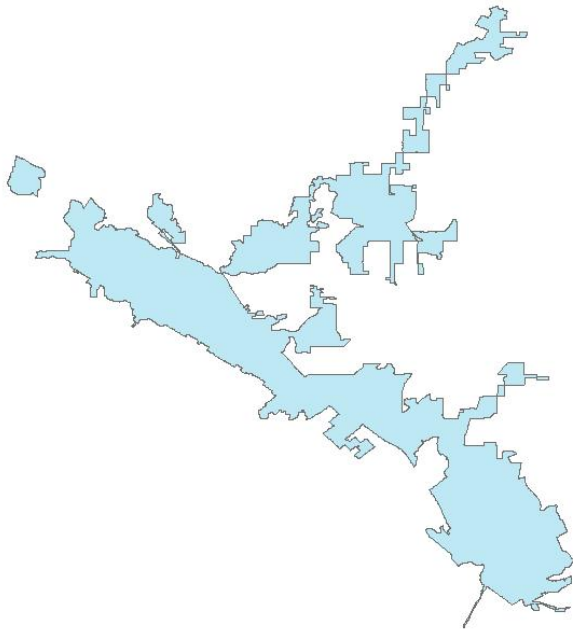
Topics

- Background – pre-project effort
- Synchronizing effort
- Encountered problems
- Future effort

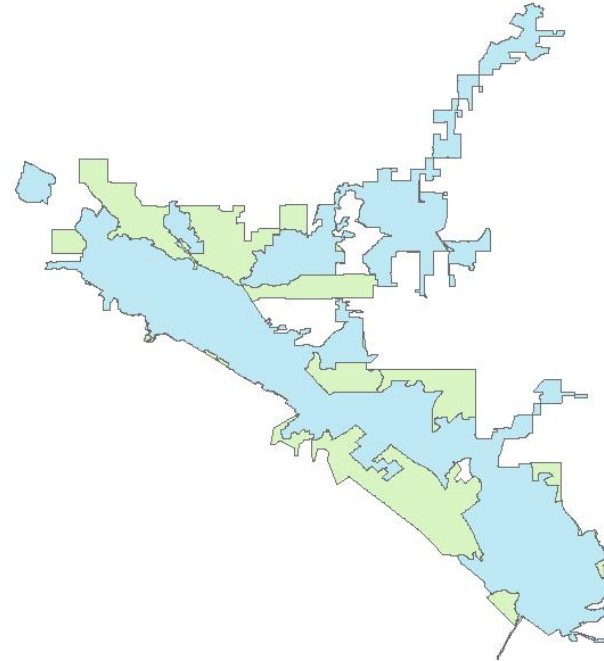
Urban Areas



Urban Area Adjustments

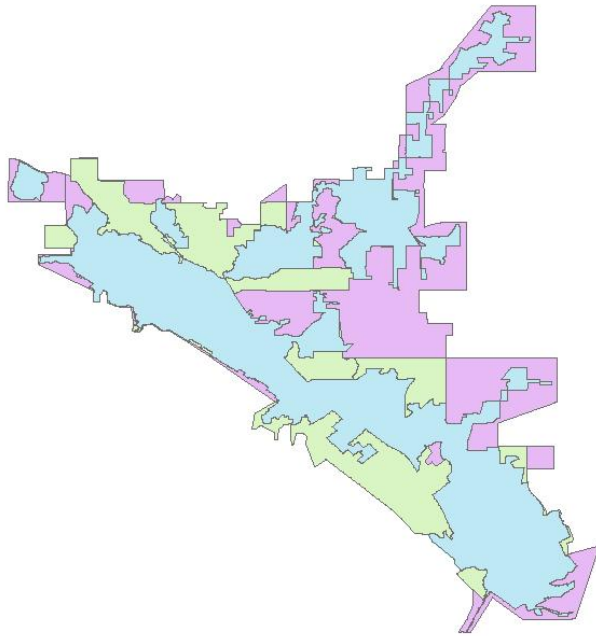


2000 Census Boundaries

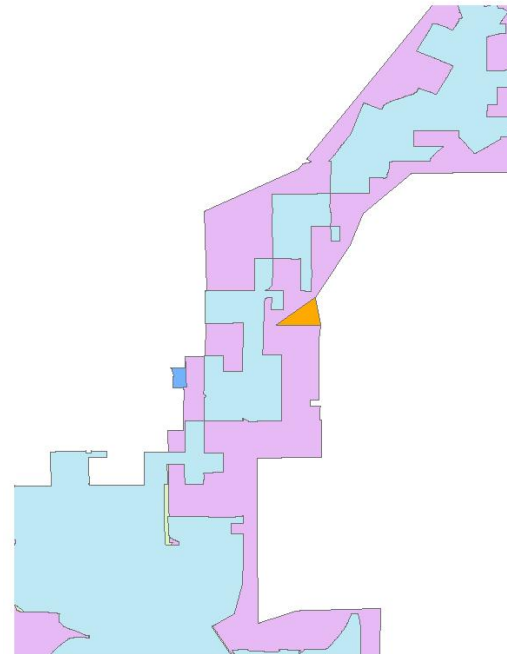


1990 Urban Areas

Urban Area Adjustments (cont.)

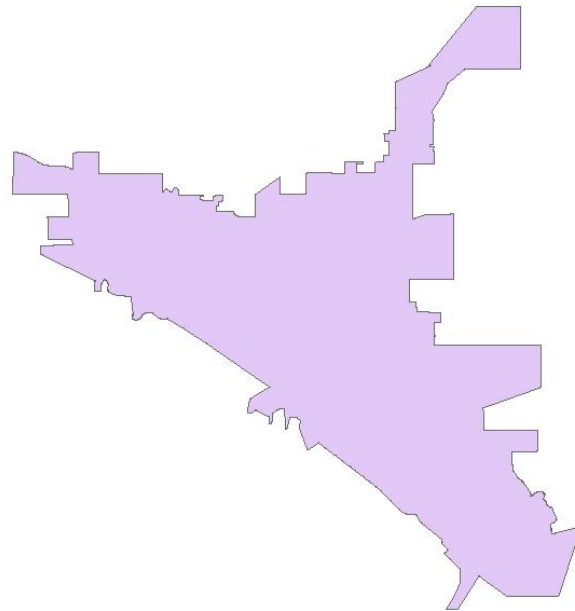


District Adjustments



HQ Adjustments

Urban Area – Dissolved



HPMS Urban Project

- Programs needing Synchronize Urban Data
 - HPMS
 - GIS
 - State Highway Inventory

Project Goals

- Update HPMS sections crossing Urban boundary
- Adjust Urban boundary to HPMS section end points
- Determine postmile value for every state highway urban boundary

Project Tasks

- Prototype
- Non-state Highway
- State Highway
- Urban Boundaries
- HPMS Submittal

Project Structure

- Steering Committee
- HPMS Staff
- GIS Staff & Students
- Highway System Engineering Staff
- State Highway Inventory Staff
- FHWA

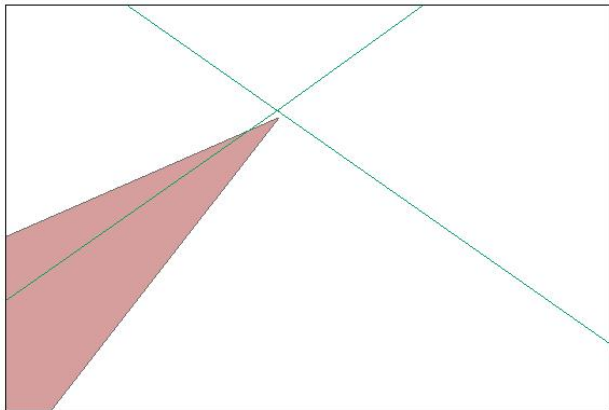
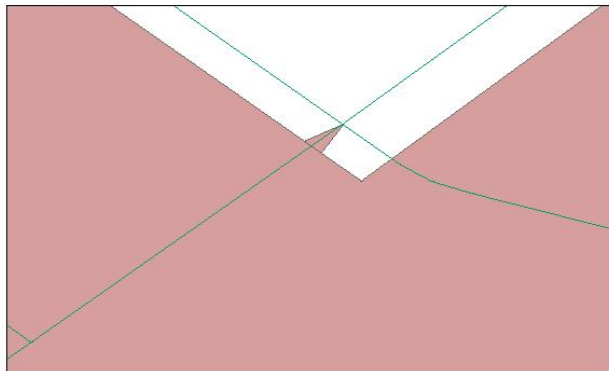
The Plan

- HPMS
 - 100% inside urban
 - 100% outside urban
 - Non state highway sections crossing urban line
 - State highway sections crossing urban line
- State Highway Inventory
 - Synchronize segments
 - Split at urban boundary

The Problems

- Line creep
- Snapping

Snapping with SDE

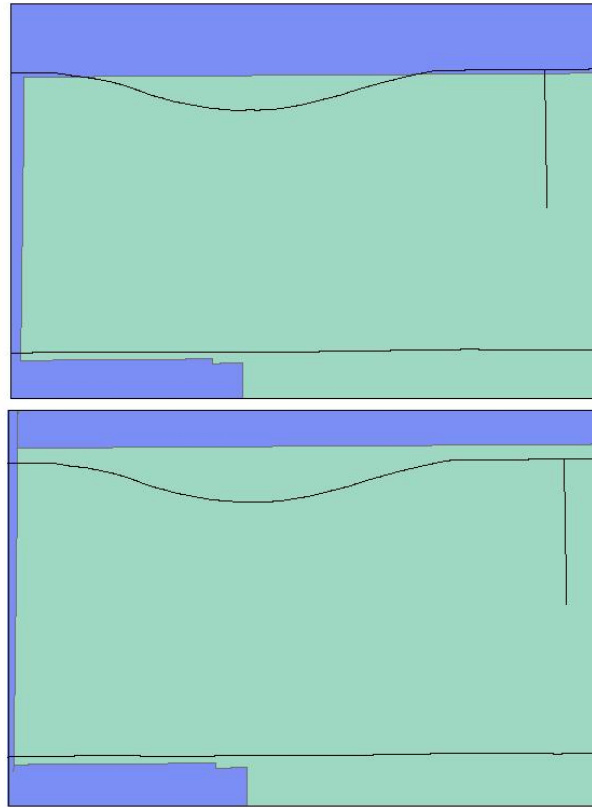


- Adjusted boundary
- Imported into SDE
- Not at intersection

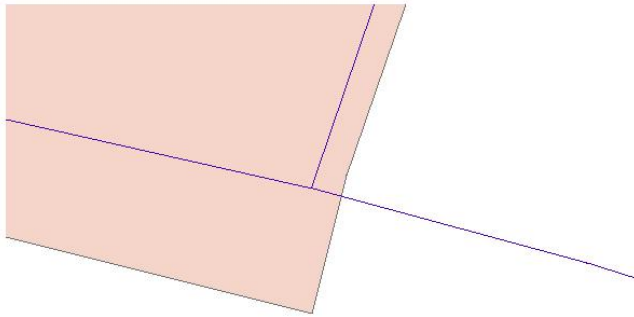
Decision

- History Shapefile
- Dissolve at Completion

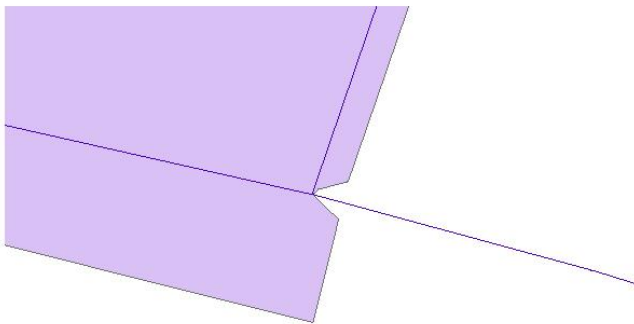
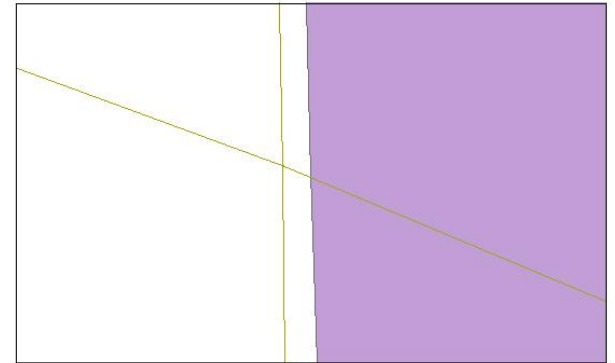
Urban – Urban Adjustment



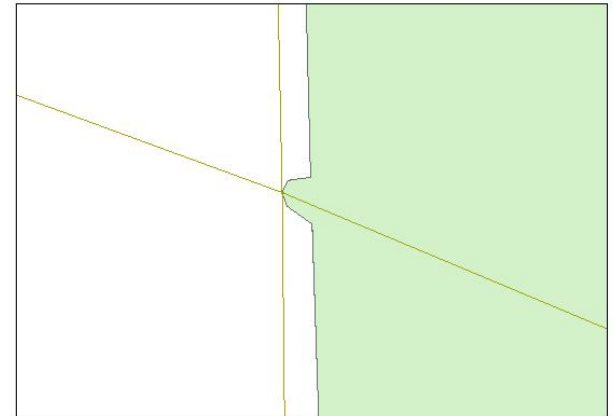
Urban Adjustments for HPMS



before



after

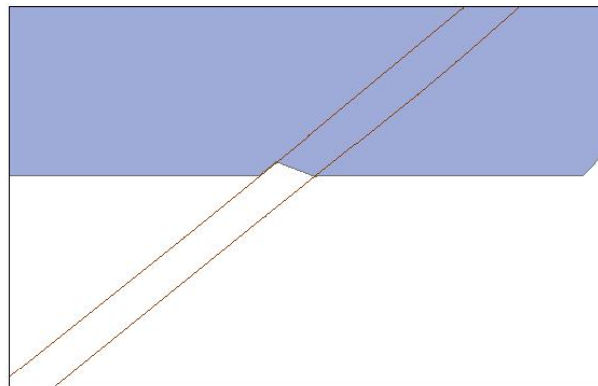
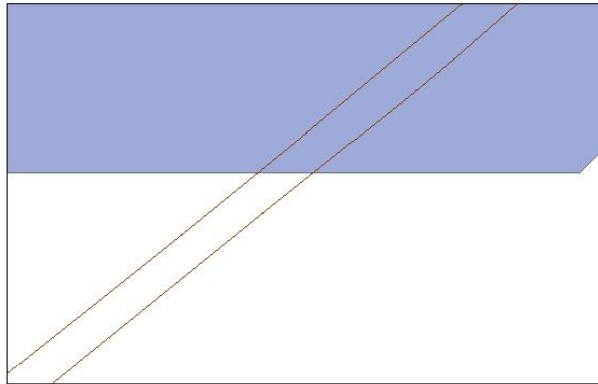


HPMS Non-State Highway Splits

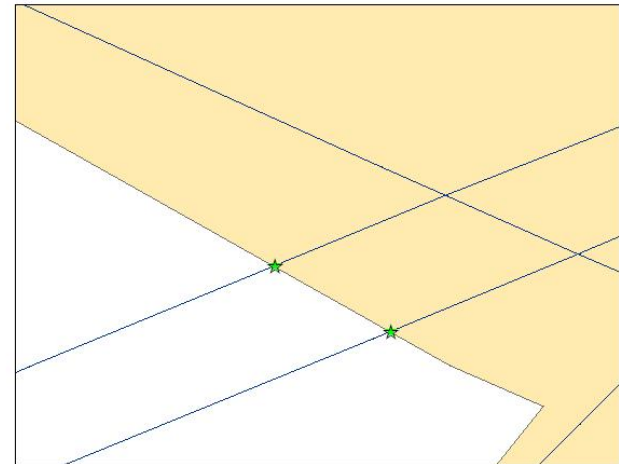
sL_nonsthwly

	1	5	CT01	CT02	CT03	CT04	CT05				
A/M/D	CO FIP S	SECTION ID	COUNTY	JUR	STREET	FROM	TO	GIS SUGGESTION	UREA AREA CODE	FORMER LENGTH	NEW LENGTH
ORIGINAL		10WW93100000	SJ	CO	VALPICO RD	LAMMERS RD	CORRAL HOLLOW RD	SPLIT, TO & FROM CORRECTION		001.300	
M		10WW93100000	SJ	CO	VALPICO RD	LAMMERS RD	URL .02M W/CORRAL HOLLOW RD		R		1.28
A			SJ	CO	VALPICO RD	URL .02M W/CORRAL HOLLOW RD	CORRAL HOLLOW RD		499		0.02
ORIGINAL		10F101370000	SJ	CO	LOWER SAC RD	WOODBIDGE ROAD	URL @ ACAMPO RD	MOVE, TO CORRECTION		001.000	
M		10F101370000	SJ	CO	LOWER SAC RD	WOODBIDGE ROAD	URL .035M N/ACAMPO RD				1.035
ORIGINAL		10F101375000	SJ	CO	LOWER SAC RD	ACAMPO RD	SAC CO LN	MOVE, SPLIT, TO & FROM CORRECT.		004.610	
M		10F101375000	SJ	CO	LOWER SAC RD	URL .035M N/ACAMPO RD	URL @ WOODSON RD		R		3.065
A			SJ	CO	LOWER SAC RD	URL @ WOODSON RD	URL @ FOREST LAKE RD		400		0.31
A			SJ	CO	LOWER SAC RD	URL @ FOREST LAKE RD	URL @ LIBERTY RD		R		0.8
A			SJ	CO	LOWER SAC RD	URL @ LIBERTY RD	SAC CO LN		400		0.4
ORIGINAL		10F102094000	SJ	CO	AIRPORT WAY	FRENCH CAMP RD	URL @ ST RR	MOVE, TO CORRECTION		000.960	
M		10F102094000	SJ	CO	AIRPORT WAY	FRENCH CAMP RD	URL .02M S/ST RR	***CHECK LENGTH***	R		0.94
ORIGINAL		10F102095000	SJ	CO	AIRPORT WAY	URL @ ST RR	CL.3M N/STIMSON RD	MOVE, FROM CORRECTION		000.380	
M		10F102095000	SJ	CO	AIRPORT WAY	URL .02M S/ST RR	CL.3M N/STIMSON RD		119		0.4
ORIGINAL		10F102140000	SJ	CO	WEST LANE	CL @ MORADA LN	URL @ EIGHT MILE RD	MOVE, TO CORRECTION		000.910	
M		10F102140000	SJ	CO	WEST LANE	CL @ MORADA LN	URL .03M N/EIGHT MILE RD		110		1.21

State Highway Urban Adjustments



> 0.009 RULE

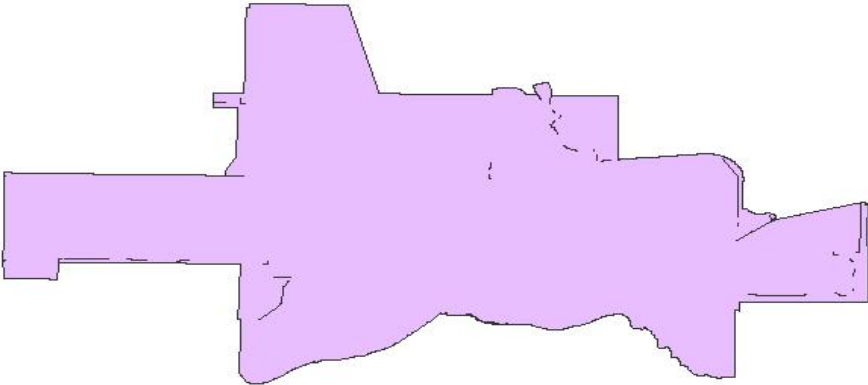
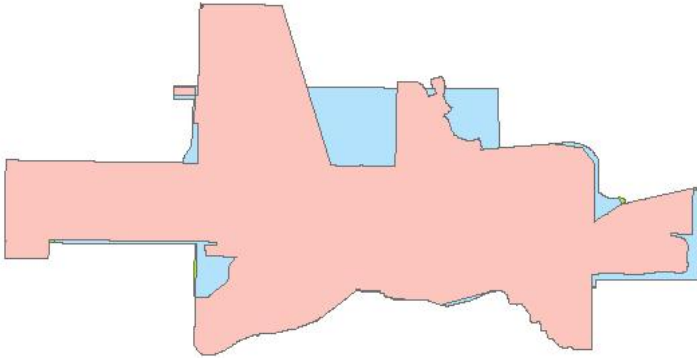


< 0.009 RULE

HPMS State Highway Splits

COUNTY	ROUTE	POSTMILE	ACTION	SECTION ID	FROM	TO	STREET	LENGTH	SAMPLE USE CASE	URL POSSIBLE	RURAL URBAN	URCODE	URGRANVILLE	ADY LANGUAGE
LAS	159	0.74	S	020190000740	HALL ST	URL @ SPRING RIDGE DR	900.740/001.866	1.126	U	1.866	U	65670	SUSV	NO
LAS	159	1.866	S	020020010686	URL @ SPRING RIDGE DR	HORSE LAKE RD	001.866/012.856	11.790	U		R			NO
LAS	98	T20.855	C	020020020895	1.5M S HWY 44	URL @ PSATVILLE RD	T0.20.855/023.640	2.985	U		R			
LAS	98	23.64	C	020020023640	URL @ PSATVILLE RD	WAIN ST	023.640/024.530	0.890	U	23.64	U	65670	SUSV	NO
LAS	98	24.530	M	020020024530	WAIN ST	URL @ SUSAN RIVER BR 7-33	024.530/026.767	2.236	S		U	65670	SUSV	NO
LAS	98	R26.767	M	020020026767	URL @ SUSAN RIVER BR 7-33	HWY 995	R026.767/R029.924	2.627	U	R26.767	R			NO
LAS	98		D	020020026745	SUSAN RIVER	HWY 995	R026.745/R029.924	2.640	U					NO
GLE	162	62.855	C	030162083675	RD D	URL @ RD FF	062.855/064.880	1.202	U	62.855	R			YES
GLE	162	64.880	C	030162084880	URL @ RD FF	LS	064.880/065.501	0.621	U		U	95725	WILLOWS	YES
GLE	162	67.204	S	030162087204	CNTRL IRG CNL	URL @ 958M W CNTRL IRG CNL	067.204/068.162	0.958	U		U	95725	WILLOWS	YES
GLE	162	68.130	S	030162088130	URL @ 958M W CNTRL IRG CNL	COUNTY HWY P	068.130/069.602	1.360	U	68.130	R			YES
GLE	92	2.020	S	030302020200	RD N	URL @ 25M E RD N	002.020/002.211	0.291	U	2.211	U	65666	ORLAND	YES
GLE	92	2.211	S	030302020211	URL @ 25M E RD N	RD P	002.211/003.000	0.689	U		R			YES
GLE	5	0.000	S	030305030000	COLUSA CO LINE	URL @ 24M S RD 57	000.000/R007.262	7.262	U		R	RT.262		NO
GLE	5	R007.262	S	0303050307262	URL @ 24M S RD 57	0.24M S RD 57	R007.262/R007.807	0.244	U		U	95725	WILLOWS	YES
GLE	5	R007.807	S	0303050307807	RD 57	URL @ 51M S RD 45	R007.807/R010.390	2.762	U		U	95725	WILLOWS	YES
GLE	5	R010.390	S	030305010390	URL @ 51M S RD 45	RD 45	R010.390/R010.583	8.404	U		R			YES
GLE	5	R10.580	C	030005010580	RD 45	RD 22	R010.580/R016.832				R			
GLE	5	R016.832	S	030305010832	RD 22	URL @ COUNTY HWY 20	R016.832/R025.812	7.009	U		R	R25.812		YES
GLE	5	R025.812	S	030305020812	URL @ COUNTY HWY 20	0.25M N RD 15	R025.812/R024.593	0.718	U		U	65666	ORLAND	YES
GLE	5	R025.800	S	030305020800	RD 12	URL @ 1.05M N RD 12	R025.800/R026.850	1.050	U		U	65666	ORLAND	YES
GLE	5	R026.850	S	030305020850	URL @ 1.05M N RD 12	TRM CO LN	R026.850/R028.521	1.668	U		R			YES

Slivers



Post Project Goals

- Update the State Highway Inventory urban postmile value
- Update the geometry requiring splits at the urban boundary
- Determine additional HPMS sample sections

Side Benefits

- Demonstrated usefulness of GIS to non-GIS users
- Identified problems and issues; future avoidance
- Determined that GIS enabling HPMS would be a value to Caltrans

Next Steps – GIS HPMS Enabling

- Review spatial layers
- Develop off-system LRS
- Support the new HPMS Data Model
- Cross Function Team