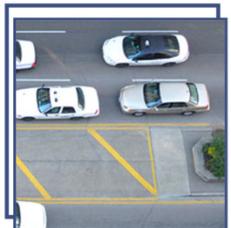




Southern California Association of Governments Regional Screenline Count Database

Modeling Task Force
January 27, 2010



AGENDA



- New since Last Time
- Objectives
- Quality Control
- Existing Data
- Data Collection
- Seasonal Adjustments
- Data Processing
- Final Results



LSA
LSA ASSOCIATES, INC.

LSA

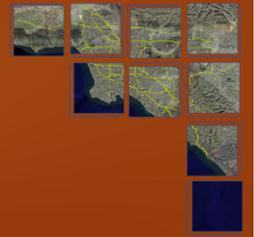
NEW SINCE LAST TIME



- Additional data has trickled in
- Additional data collection – 43 low priority locations
 - 3 were not counted
- Seasonal and Annual Adjustment Factors
 - Additional PeMS data mining
 - All months for 2006 – 2009
 - Implemented seasonal and annual adjustments
- Final database system



PROJECT OBJECTIVES



- **Average Annual Weekday Traffic (AAWT) for Year 2008 Model Validation Project**
- **Counts on all Screenline locations**
 - Vehicle classes (13 FHWA classes)
 - Time periods (15-minute)
 - Occupancy data (Freeways and HOV)
 - Facilities (arterials, collectors, freeways, HOV/HOT, etc.)
 - Coachella Valley – peak season (Feb – Apr) counts
- **Non-screenline counts in database if provided electronically**
- **Expandable factoring to maximize data uses**
- **Coordinate with SCAG's Regional Goods Movement Project and the Imperial County Model Development Team to optimize efficiencies**



PROJECT OBJECTIVES



- **Screenline Review**

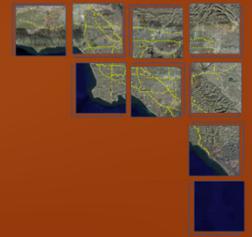
- 11 New regional Screenlines
- Thanks for your input

- **Cordon Locations**

- All model external stations were inventoried
- Complete count coverage desired at external stations



QUALITY CONTROL



1. Data Source

- Trusted entity
- Proper methodology and equipment use

2. Directional Distribution

- Consistent daily directional total volumes

3. Temporal Distribution

- Bi-modal or tri-modal diurnal distribution
- Consistent reverse directionality trends

4. Vehicle Classification

- Reasonable trends
- Outlier data

5. Missing Data

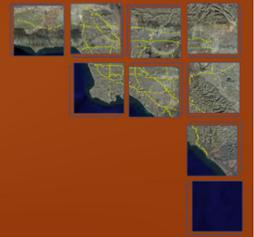
- Zero volumes by time of day and vehicle class
- Site-specific application (some zeroes are ok)

6. Complementary Count Data

- Counts at upstream and downstream locations
- Redundant counts at screenline count locations



QUALITY CONTROL



7. Traffic Flow and Machine Errors

- Caused by simultaneous tripping of counter, stop and go traffic, and deteriorated road surface
- Difficult to determine, especially from existing counts

8. Day of Week / Time of Year

- No holiday effects
- No weekend counts
- Limited number of summer counts
- Limited Friday and Monday counts

9. Lane Capacity

- Average and reported per lane capacities (e.g., PeMS)

10. Locational Errors

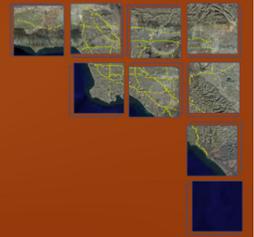
- GIS tagging with manual review

11. Data Factoring & Expansion

- Database calculations
- Raw vs. final data



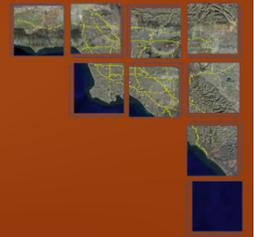
QUALITY CONTROL



Traffic Counts	Arterial and Collector Streets (Local Governments)	Freeway and HOV (PeMS, Caltrans Vehicle Class Counts, WIM Counts)
1. Existing	<ul style="list-style-type: none"> • Some data source concerns • Limited data (e.g., time of day, vehicle class) 	<ul style="list-style-type: none"> • Lane capacity issues • Double-Counting • Missing data
2. Collected	<ul style="list-style-type: none"> • Generally no issues 	<ul style="list-style-type: none"> • Collected vehicle occupancy and class counts (visual record)
3. Database	<ul style="list-style-type: none"> • Primarily comparing raw vs. factored/expanded data 	<ul style="list-style-type: none"> • Primarily comparing raw vs. factored/expanded data



QUALITY CONTROL



- **Manual vs. Automated Quality Review**
 - Electronic availability of data
- **Some criteria difficult to assess (e.g., machine errors, locational errors)**
 - Used information to prioritize count quality and needs
- **Assumes traffic count firms followed proper methodology and kept machines calibrated**
 - Not an issue for collected counts
 - Can be difficult to ascertain for existing counts
- **Assumes counts from agencies and local governments had some level of quality review**
- **Complementary Count Data best quality check**
 - 2 or more consistent counts: very reliable
 - Only 1 count: hard to tell



EXISTING DATA



- **“Hierarchy” of Data Sources**

- **Caltrans**

- Station Count Data
- Vehicle Classification Data
- Freeway Performance Measurement System (PeMS)
- Excellent coverage for state highways



- **Subregions**

- County Transportation Commissions (CTC)
- Councils of Governments (COG)

- **Counties**

- Some had data for unincorporated areas

- **Municipalities**

- Varied data quality, type, and availability
- Focus was on cities traversed by screenlines



EXISTING DATA



- **Near complete freeway coverage**
 - Limited vehicle classification data
 - Limited / non-existent auto occupancy data
 - Data hourly or by 5-minutes
- **Spotty arterial coverage**
 - Electronic data was imported and geocoded
 - 4,450 imported counts

24 Hours Traffic Volume
City of Los Angeles
Department of Transportation

RAW DATA
COUNTER
DATE
START TIME
DAY OF WEEK
THURSDAY
DATE PREPARED
CENTRAL
TIME ZONE

LOCATION: 7TH ST AT FLOWER ST
INTERSECTION: EW STREET
DESCRIPTION: 7TH FLO

DAY OF WEEK: THURSDAY
DATE PREPARED: [blank]
TIME ZONE: CENTRAL

10 20 30 40
...5...|...5...|...5...|...5...|

TIME	NORTH / WEST BOUND				TOTAL
	1ST QTR	2ND QTR	3RD QTR	4TH QTR	
12 AM	27	22	22	18	89
1 AM	11	23	18	18	70
2 AM	19	12	11	13	55
3 AM	10	11	6	11	38
4 AM	12	8	16	14	50
5 AM	22	27	28	35	111
6 AM	39	79	81	100	299
7 AM	113	121	118	152	504
8 AM	171	158	180	173	682
9 AM	171	168	133	129	599
10 AM	129	121	137	140	527
11 AM	155	127	135	164	581
12 NN	168	188	159	159	674
1 PM	158	157	178	138	631

1 Data File: 'D0807086.JDF'
2 Site Code: 'IRVINE'
3 Start Date: '7/22/08'
4 Start Time: '0:00'
5 Sensor Layout: '21'
6 Sensor Spacing: '160'
7 'Location': 'JANBOREE ROAD'
8 'Segment': 'CAMPUS DR TO DUPONT DR'
9 'Client': 'CITY OF IRVINE'

10
11 Date, Time, Total, NB, SB
12 07/22/2008,00:00:00, 76 , 42 , 34
13 07/22/2008,00:15:00, 63 , 35 , 28
14 07/22/2008,00:30:00, 52 , 22 , 30
15 07/22/2008,00:45:00, 54 , 26 , 28
16 07/22/2008,01:00:00, 53 , 35 , 18
17 07/22/2008,01:15:00, 67 , 27 , 40
18 07/22/2008,01:30:00, 51 , 30 , 21
19 07/22/2008,01:45:00, 48 , 22 , 26
20 07/22/2008,02:00:00, 34 , 15 , 19
21 07/22/2008,02:15:00, 29 , 19 , 10
22 07/22/2008,02:30:00, 33 , 16 , 17
23 07/22/2008,02:45:00, 46 , 26 , 20
24 07/22/2008,03:00:00, 32 , 8 , 24
25 07/22/2008,03:15:00, 30 , 10 , 20
26 07/22/2008,03:30:00, 25 , 14 , 11

Location: ALL AMERICA WAY
Segment: ALTA VISTA TO CHAPMAN
Client: CITY OF PLACENTIA

Time	NB				SB
	AM	PM	AM	PM	
12:00	0	1	9	37	0
12:15	1	10	0	0	1
12:30	0	12	0	1	0
12:45	0	6	0	0	0
01:00	0	0	6	27	0
01:15	0	5	0	0	0
01:30	0	10	0	0	0
01:45	0	6	0	0	0
02:00	1	13	70	0	0
02:15	0	7	0	0	0

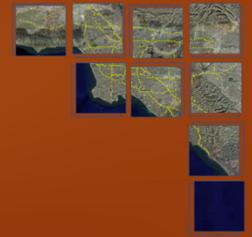
Volumes for: Tuesday, June 12, 2007 City: Santa Ana
Location: Fairview St from Sunflower Ave to MacArthur Blvd

AM Period	NB	SB	PM Period	NB	SB
00:00	46	29	12:00	260	234
00:15	38	20	12:15	253	249
00:30	30	23	12:30	214	247
00:45	17	131	15	87	218
01:00	20	25	13:00	237	245
01:15	28	19	13:15	256	225
01:30	18	21	13:30	257	246
01:45	21	87	17	82	169
02:00	20	14	14:00	267	292

3	0	0	9	0	0
10	56	1	1	23	126
14	0	0	0	21	0



DATA COLLECTION (Arterials)



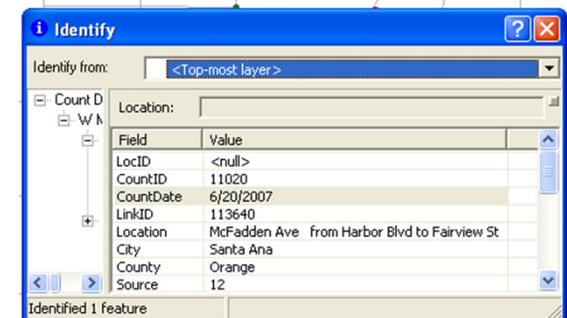
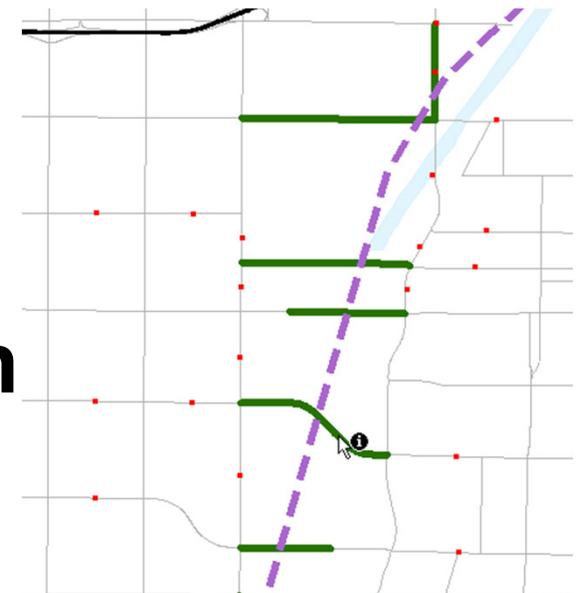
- **Screenline Link Data Inventory:**

- Good data available
- Moderate data available
- No data available

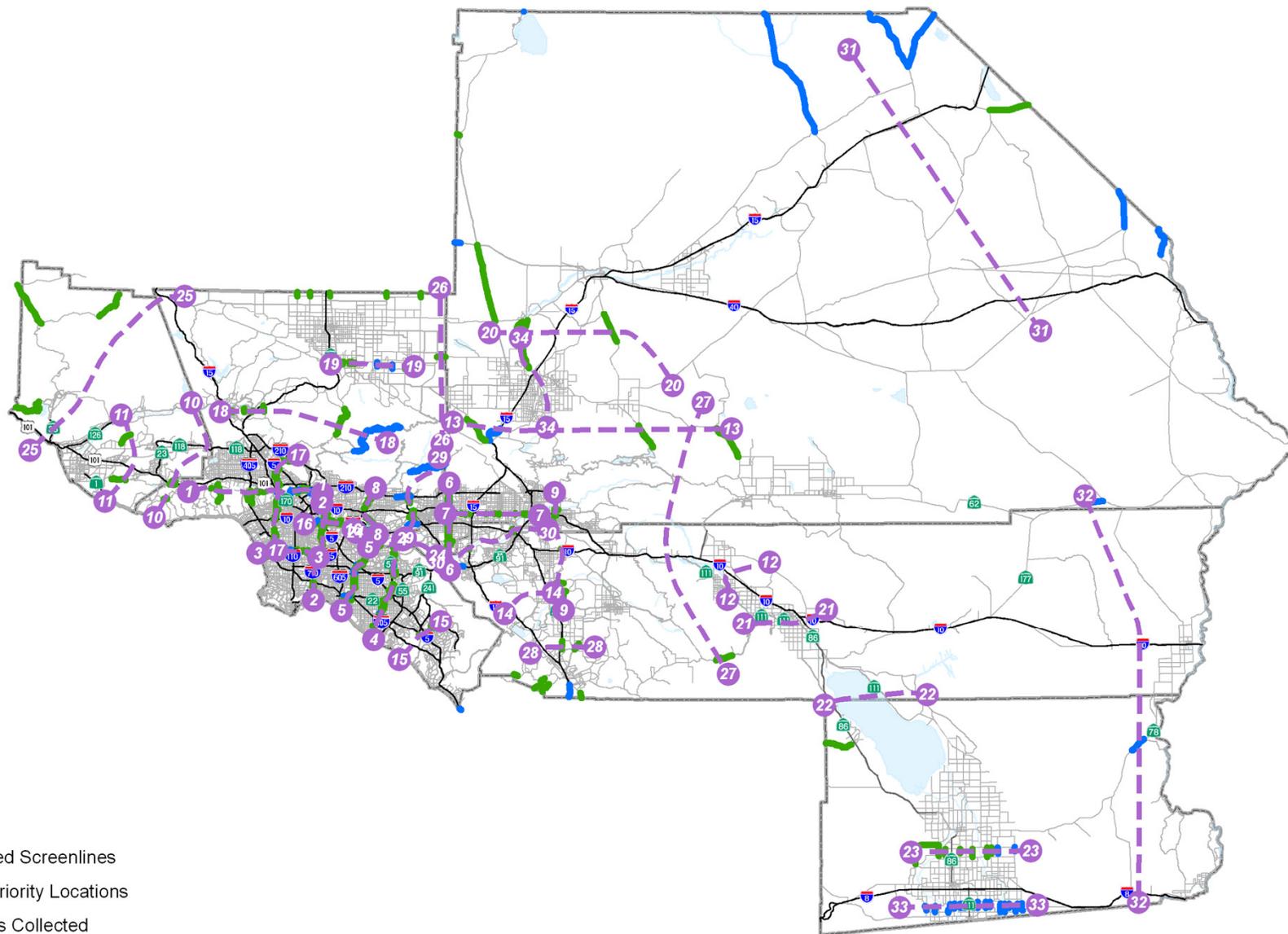
- **Data Needs and Prioritization**

- No data needed
- High Priority Count Location
- Low Priority Count Location

- **About 300 Arterial Counts Collected**



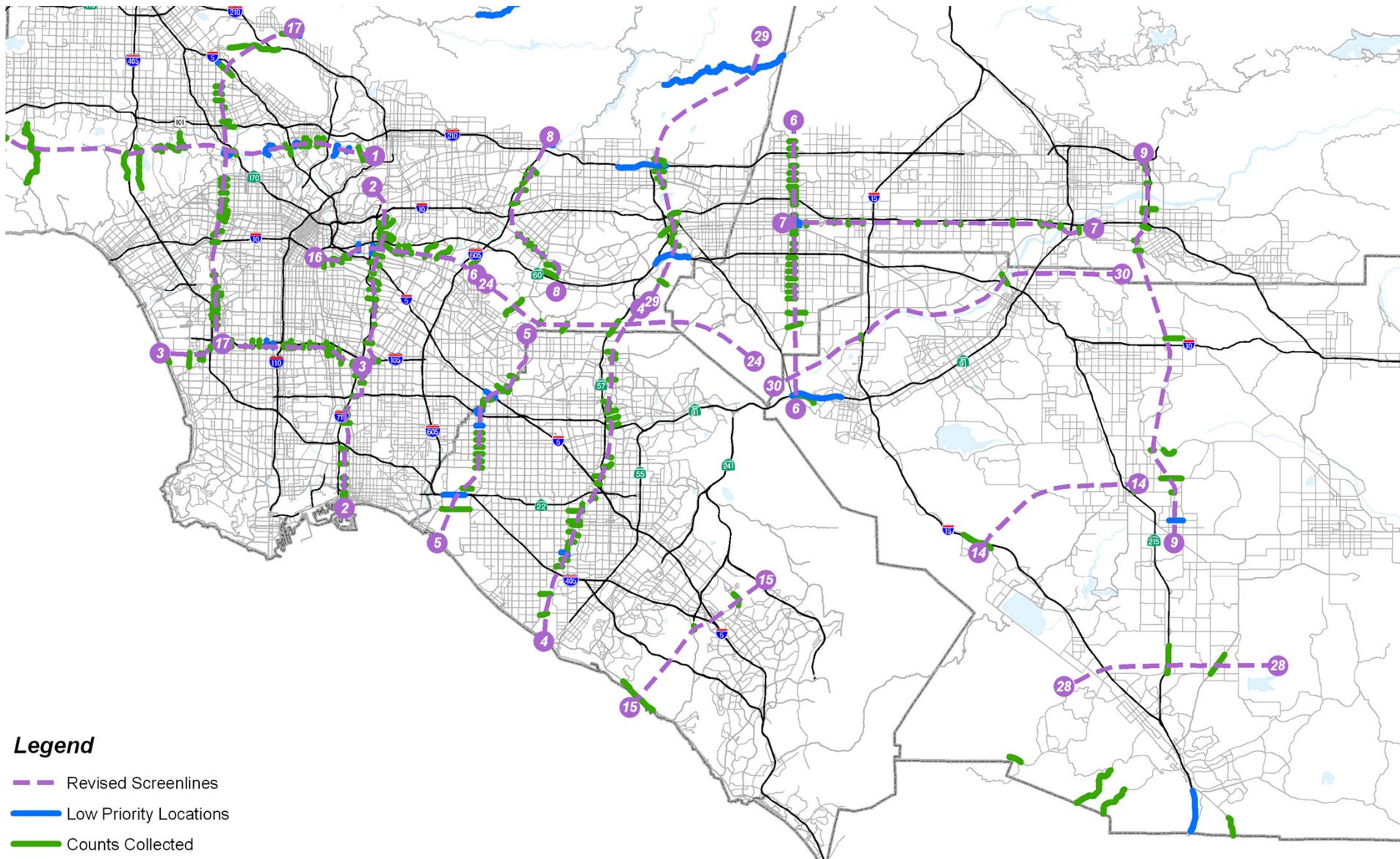
DATA COLLECTION (Arterials)



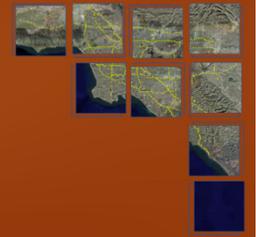
Legend

- Revised Screenlines
- Low Priority Locations
- Counts Collected

DATA COLLECTION (Arterials)



DATA COLLECTION (Freeway/HOV)

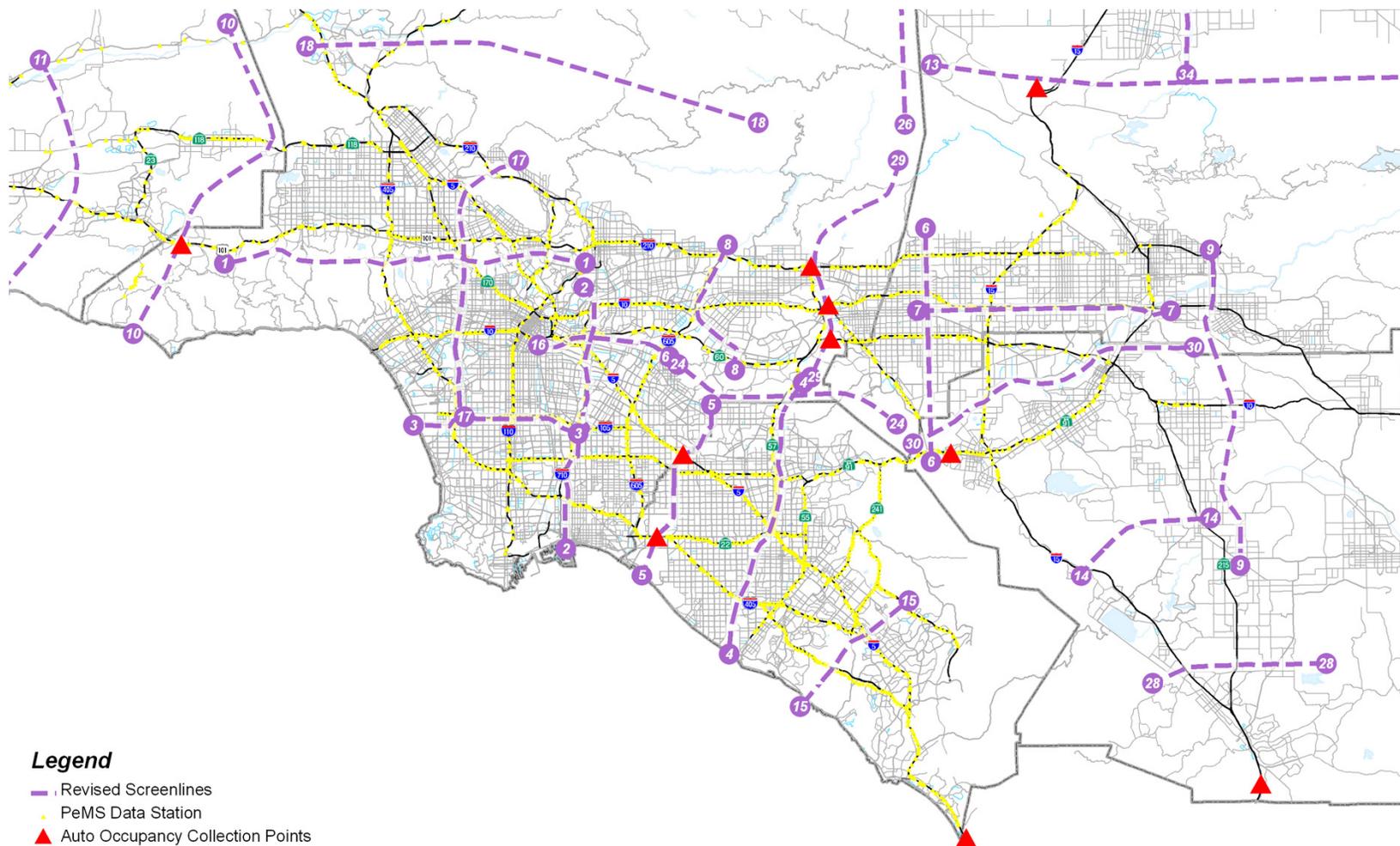


- Freeway/HOV Occupancy Counts
 - Limited Resources
 - Strategic Locations
 - Paired with PeMS or Caltrans Count Station
 - Visual observation during daylight hours
 - 80 Lanes of data

5														
6		<i>Passenger Vehicles</i>					<i>Large 2 Axle Vehicles</i>				<i>3 Axle Trucks</i>	<i>3 Axle Buses</i>	<i>4+ Axle Trucks</i>	
7	Interval	1	2	3	4	5	1	2	3	4+				Total
8	6:00	82	45	2	1	0	3	2	1	0	1	0	0	136
9	6:15	94	53	2	0	0	2	1	1	0	0	0	0	152
10	6:30	112	66	3	0	0	1	1	0	0	1	0	1	184
11	6:45	120	69	1	0	0	4	2	0	0	0	0	0	195
12	7:00	108	80	1	0	0	2	2	0	0	1	0	0	194
13	7:15	117	55	1	0	0	2	1	0	1	0	0	0	176



DATA COLLECTION (Freeway/HOV)



Legend

- Revised Screenlines
- PeMS Data Station
- Auto Occupancy Collection Points



QUALITY CONTROL PEEMS DATA



- Quality Control of PeMS data
 - Used data for Tuesday, Wednesday and Thursday only
 - Mainline and HOV data only (no ramp data)
 - Elimination of zero-volume counts
 - Elimination of Outlier counts



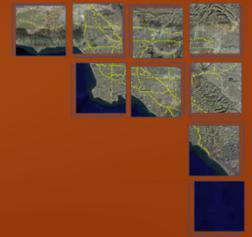
QUALITY CONTROL PEEMS DATA



- Annual Adjustment PeMS Station Subset
 - At least 5 days of “good” data for all months, 2006-2009
 - 1,745 Resulting PeMS stations
- Seasonal Adjustment PeMS Station Subset
 - At least 5 days of “good” data for all months in a single year
 - Annual adjustment factors developed separately for each year

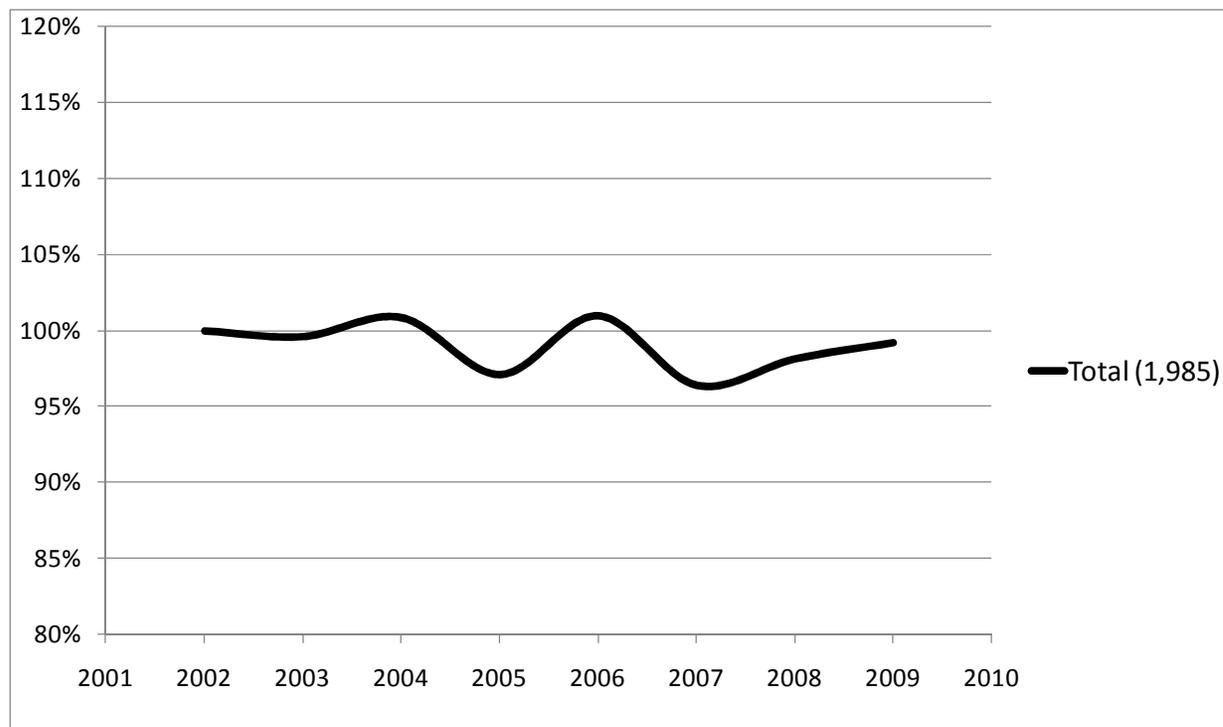


ANNUAL ADJUSTMENTS



- **Annual Adjustments**

- Previous analysis for April only
- GNP, GSP, employment, and other measures do not explain the drop in 2005



Note:
Growth factors are shown relative to 2002 for illustrative purposes. Actual adjustment factors are relative to 2008.

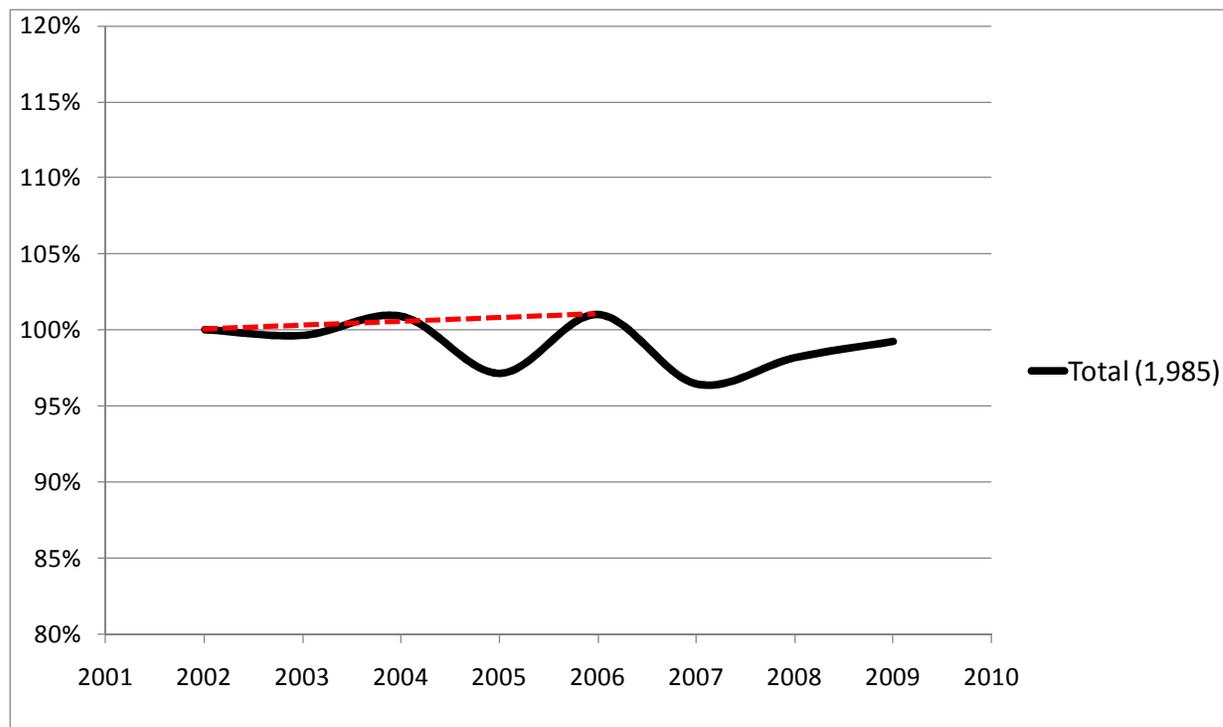


ANNUAL ADJUSTMENTS



- **Annual Adjustments**

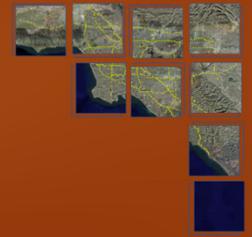
- Use straight-line growth from 2002 to 2006
- Only a handful of counts are from 2005 or earlier



Note:
Growth factors are shown relative to 2002 for illustrative purposes. Actual adjustment factors are relative to 2008.

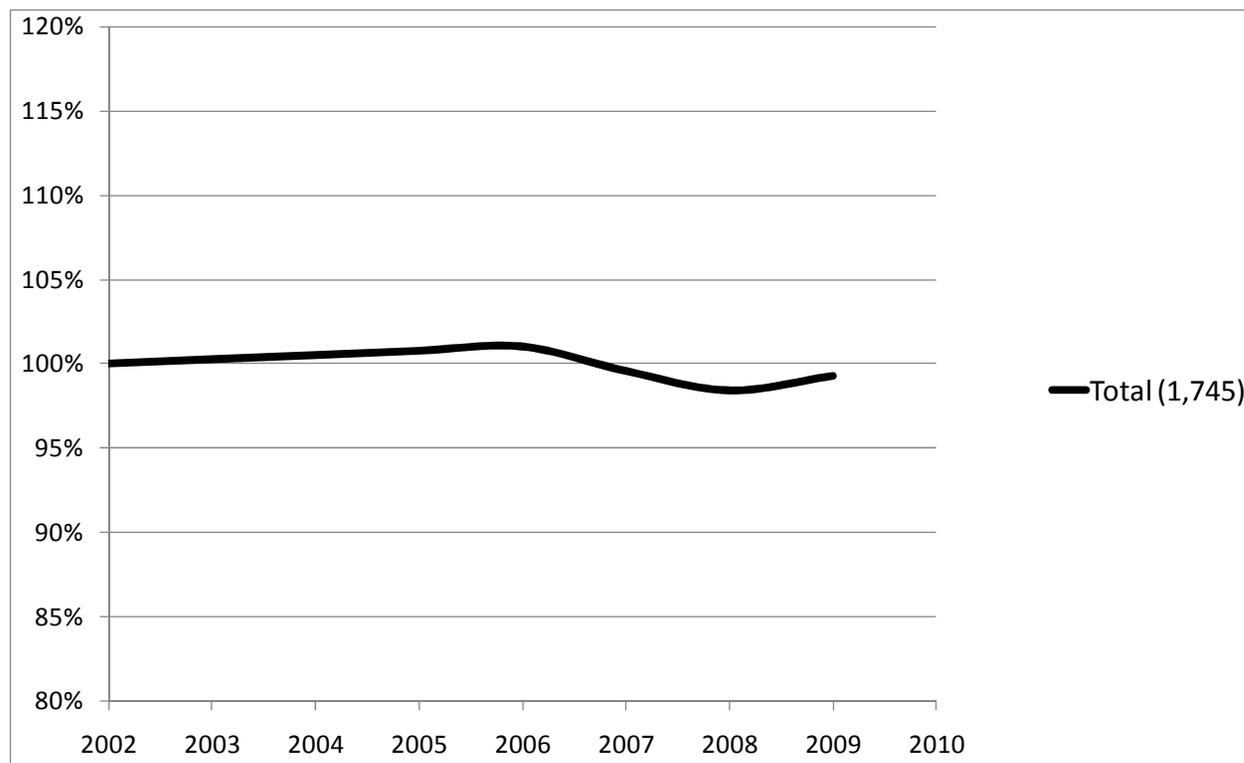


ANNUAL ADJUSTMENTS



- **Annual Adjustments**

- Use PeMS data for all months from 2006 – 2009
- Gas price and economic influences are evident in 2007 and 2008



Note:
Growth factors are shown relative to 2002 for illustrative purposes. Actual adjustment factors are relative to 2008.

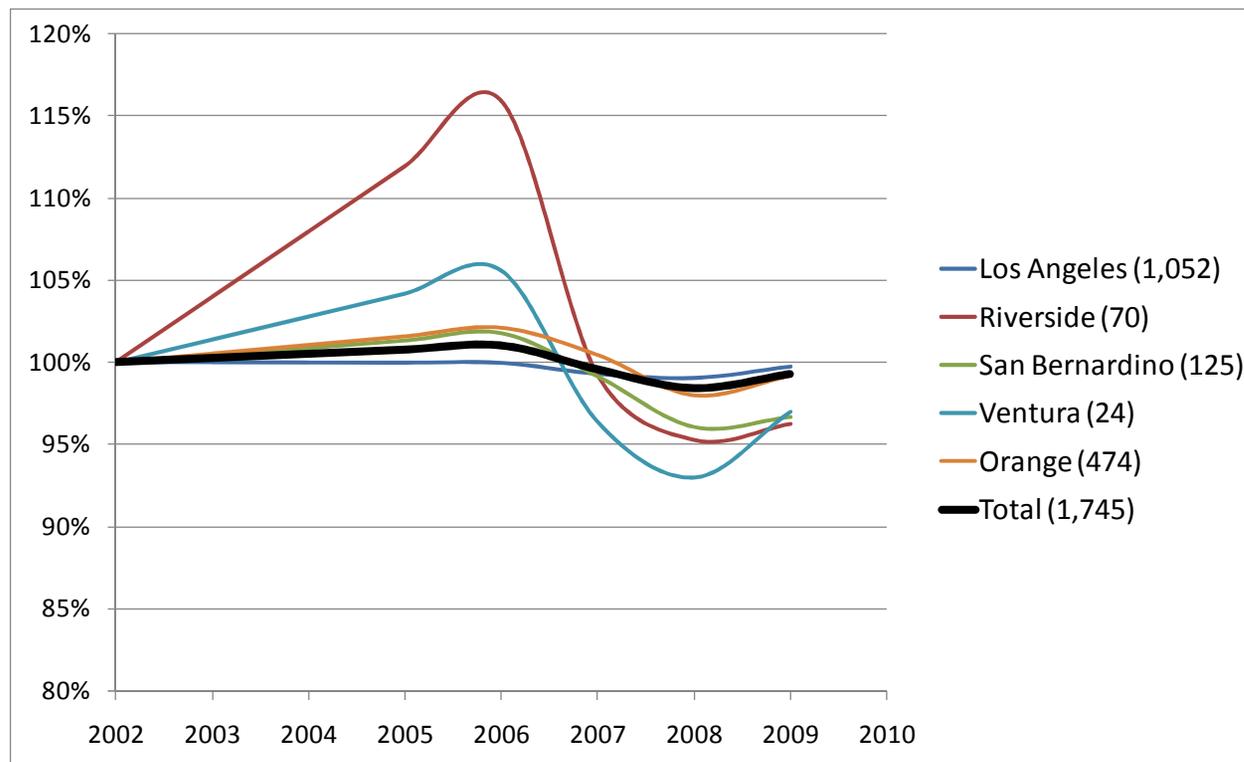


ANNUAL ADJUSTMENTS



- **Annual Adjustments**

- Growth factors are applied separately for each county
- Reminders
 - Most counts are from 2006 and earlier
 - Counts are adjusted relative to 2008



Note:
Growth factors are shown relative to 2002 for illustrative purposes. Actual adjustment factors are relative to 2008.



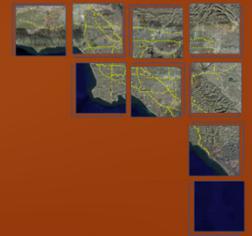
ANNUAL ADJUSTMENTS



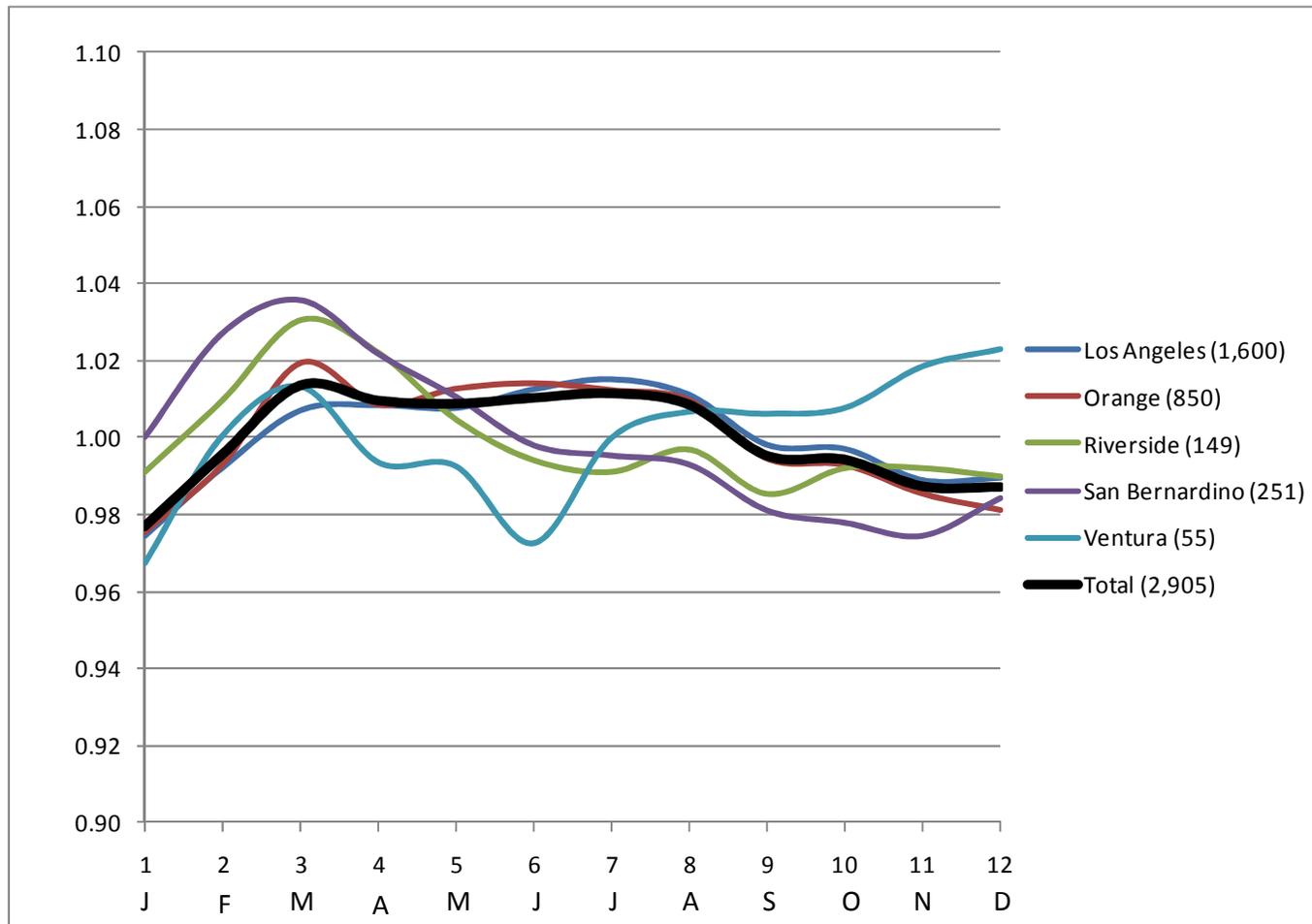
- Annual Adjustment Methodology
 - Most counts are from 2006 or later
 - All counts are from 2004 and later
 - All counts are adjusted to represent 2008 conditions



SEASONAL ADJUSTMENTS



- **Seasonal Adjustments: 2008 (Initial analysis)**

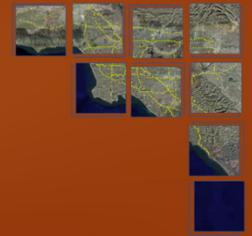


Note:
Adjustment factors are shown relative to Average Annual Weekday traffic

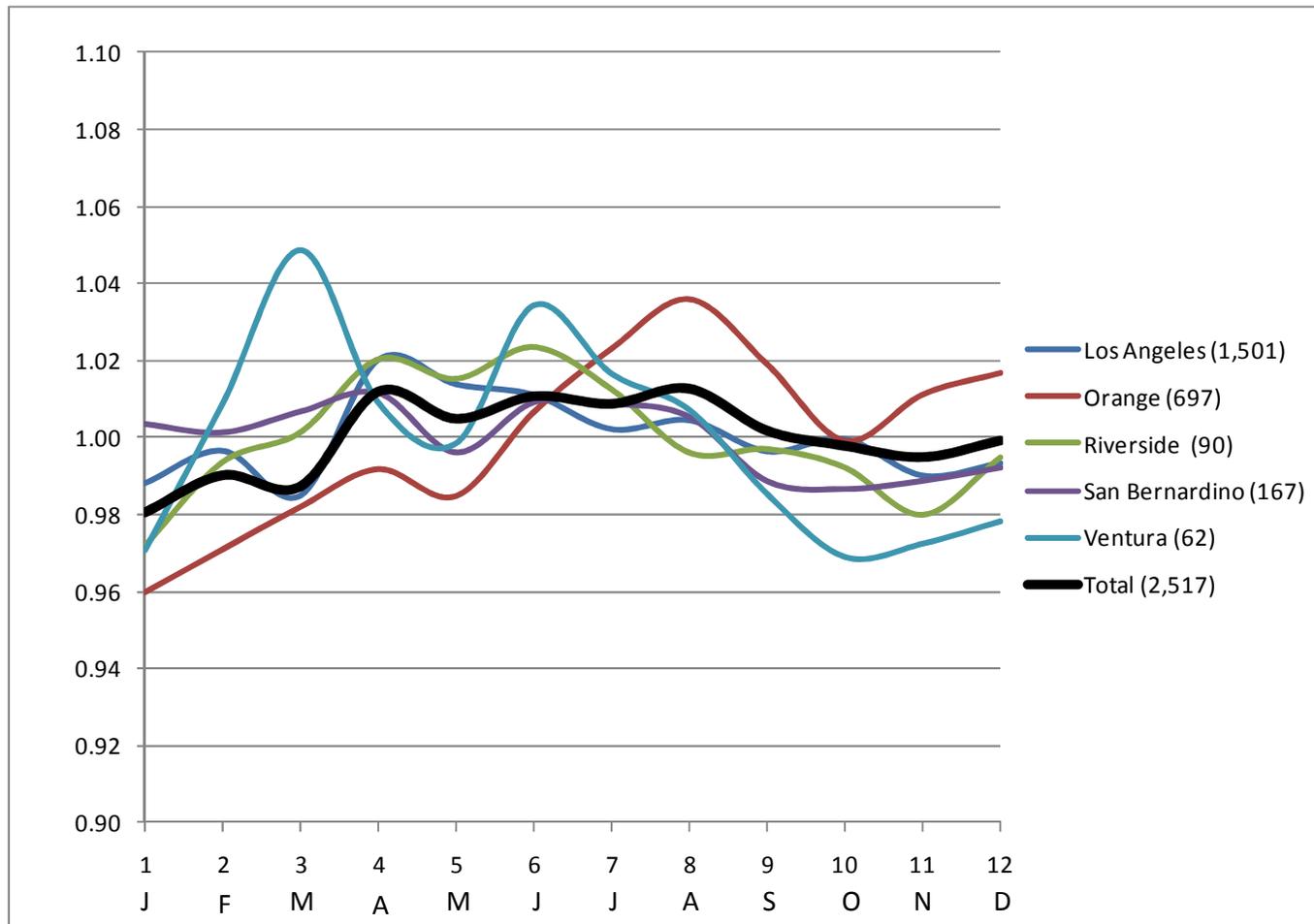
Model volumes are factored to represent average April/May/June traffic.



SEASONAL ADJUSTMENTS



• Seasonal Adjustments: 2006

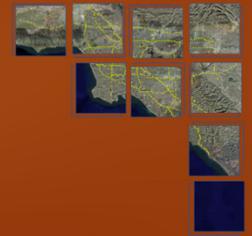


Note:
Adjustment factors are shown relative to Average Annual Weekday traffic

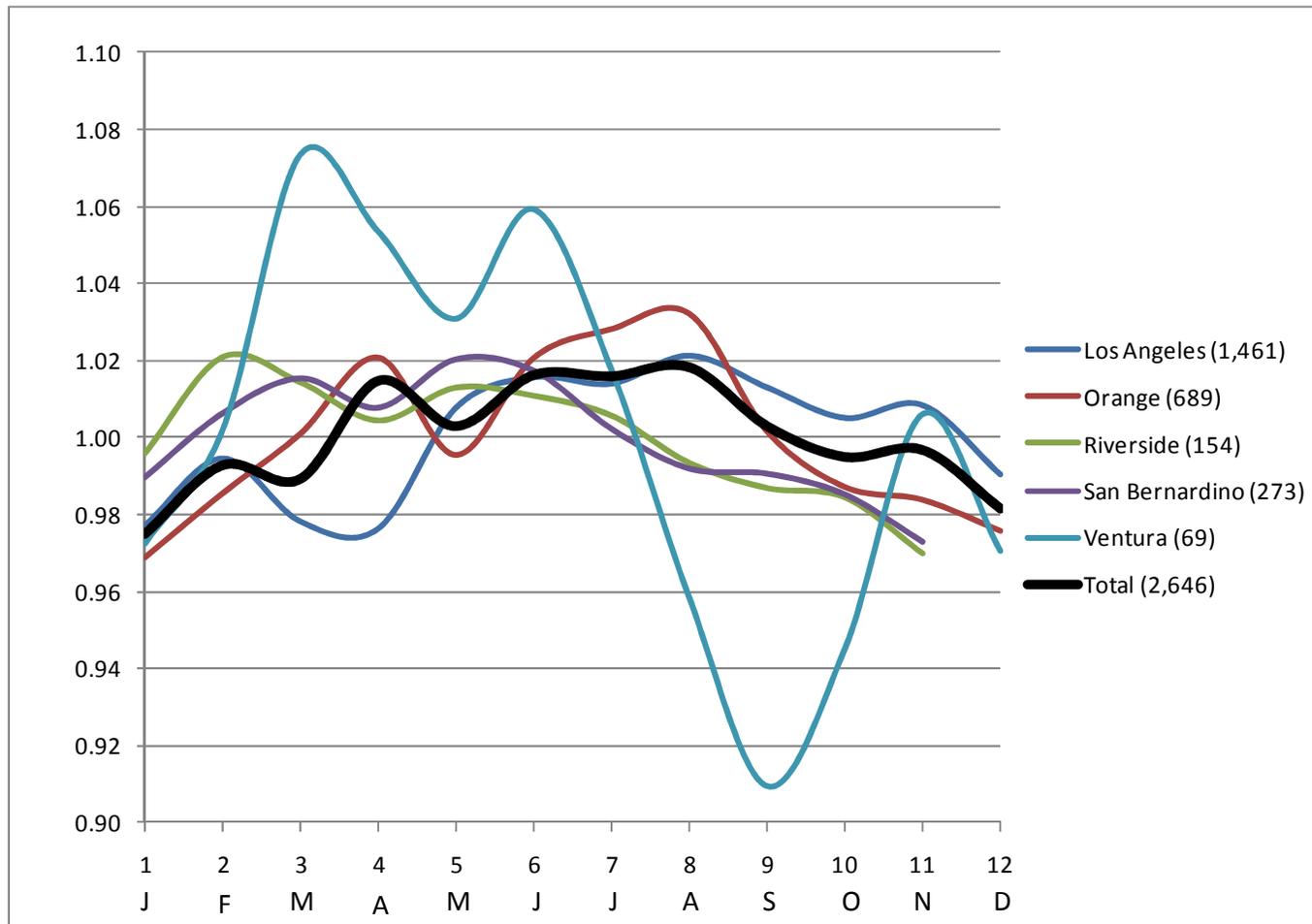
Model volumes are factored to represent average April/May/June traffic.



SEASONAL ADJUSTMENTS



- **Seasonal Adjustments: 2007**

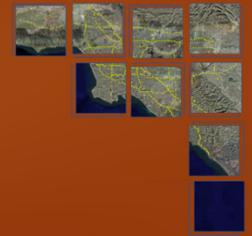


Note:
Adjustment factors are shown relative to Average Annual Weekday traffic

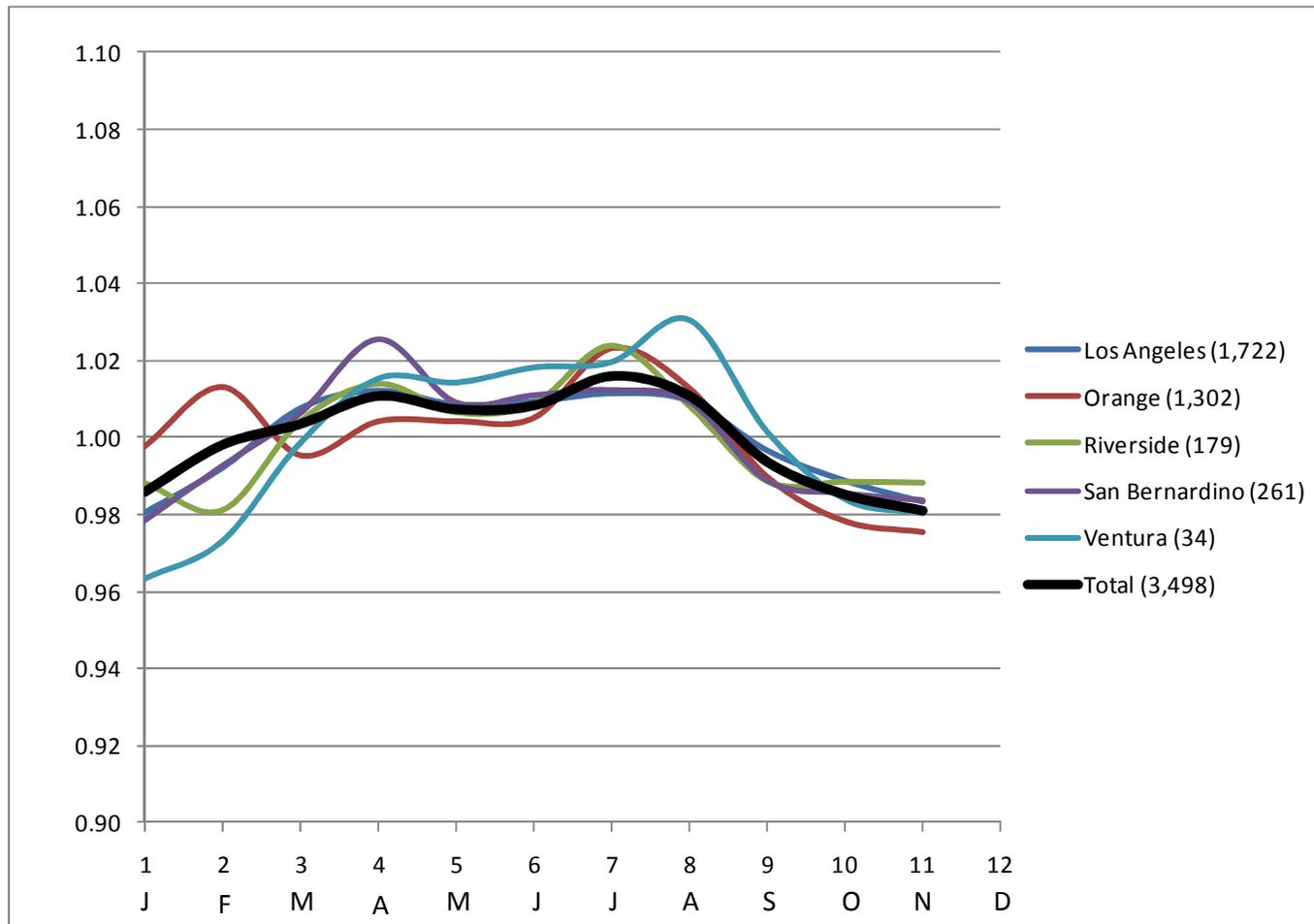
Model volumes are factored to represent average April/May/June traffic.



SEASONAL ADJUSTMENTS



• Seasonal Adjustments: 2009

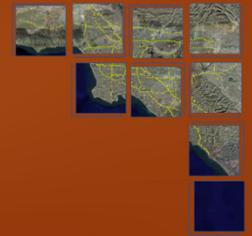


Note:
Adjustment factors are shown relative to Average Annual Weekday traffic

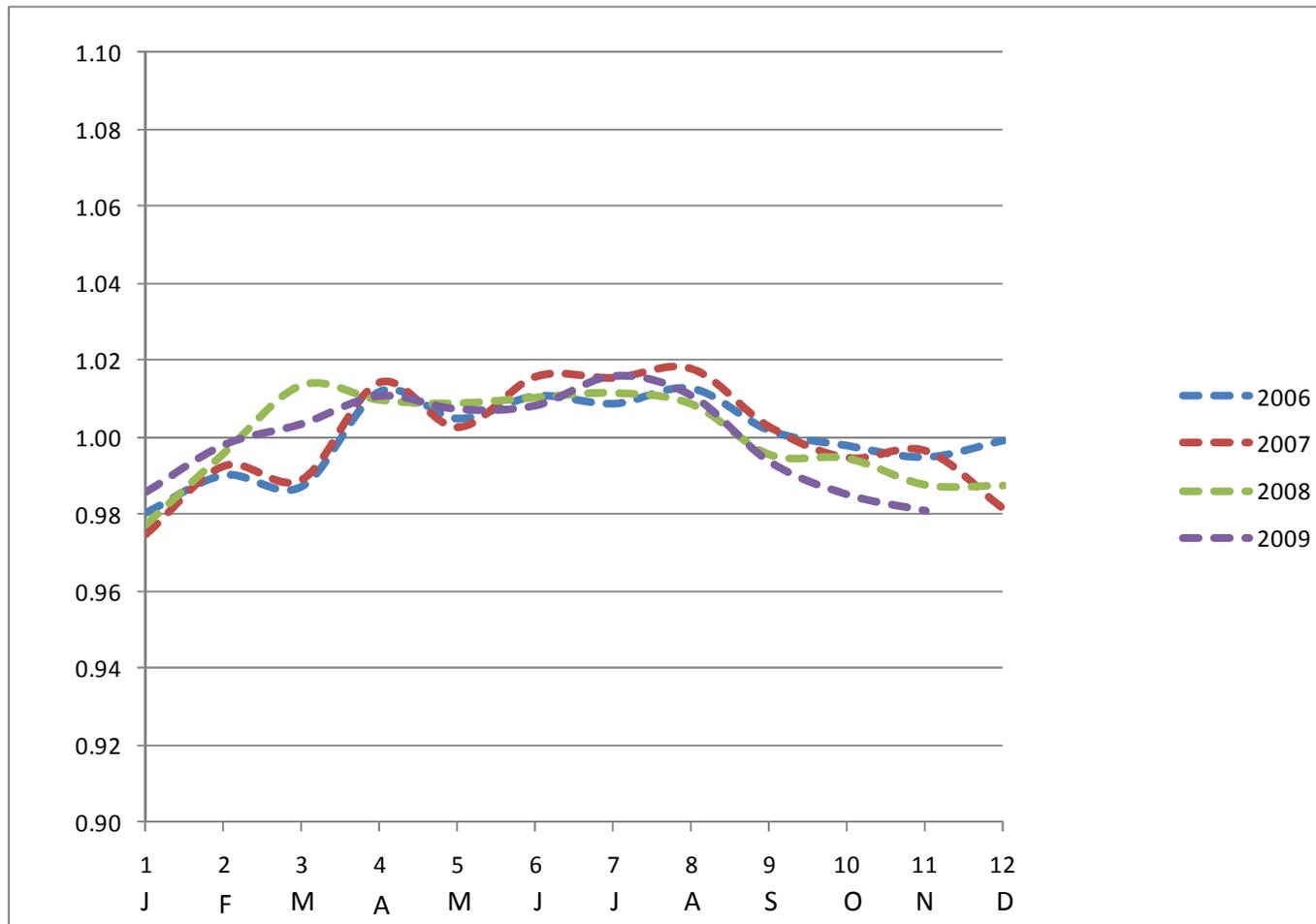
Model volumes are factored to represent average April/May/June traffic.



SEASONAL ADJUSTMENTS



- **Seasonal Adjustments: All Years**



Note:
Adjustment factors are shown relative to Average Annual Weekday traffic

Model volumes are factored to represent average April/May/June traffic.



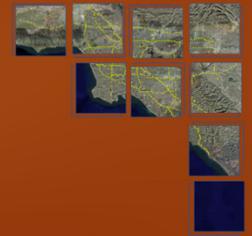
SEASONAL ADJUSTMENTS



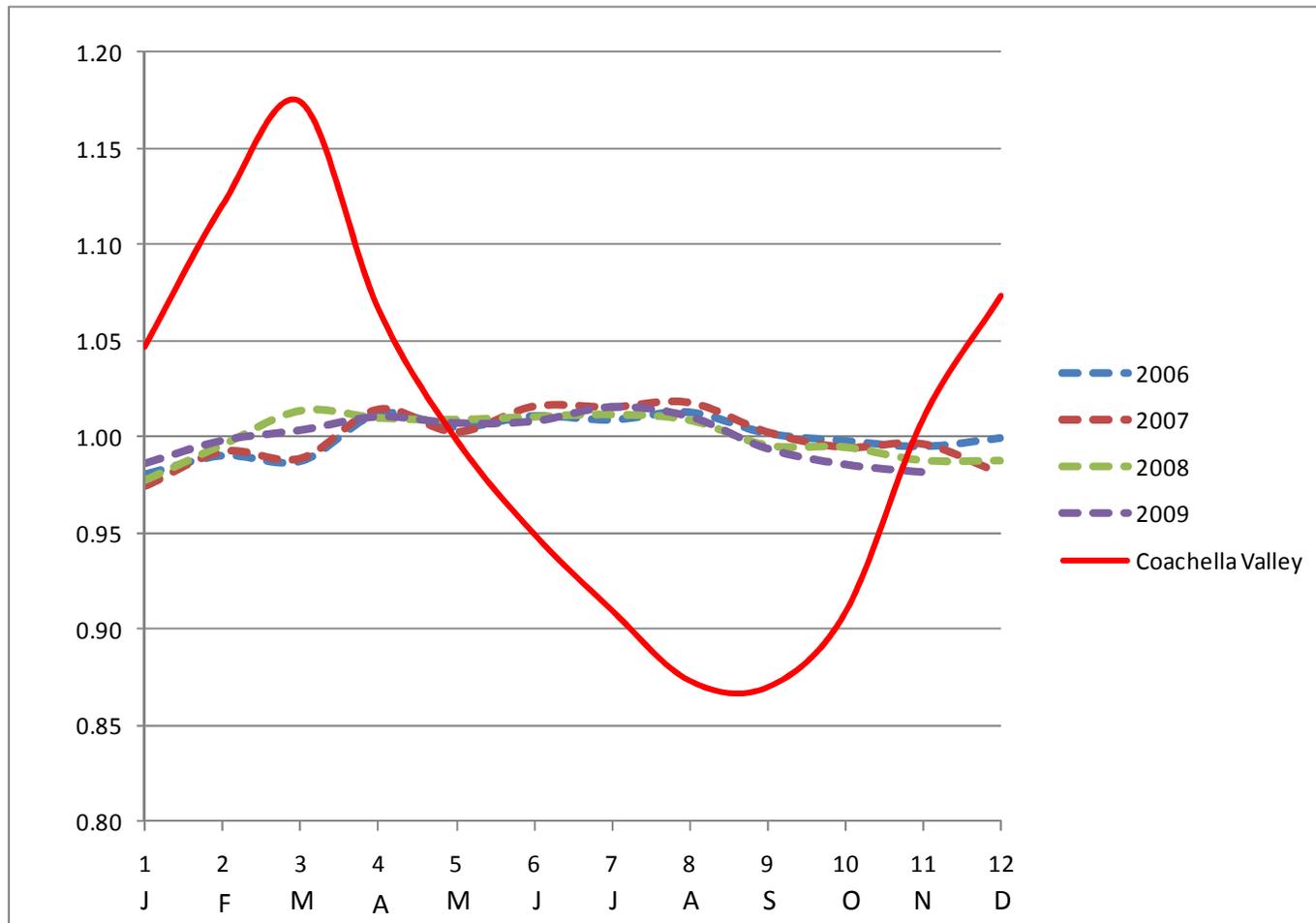
- Seasonal Adjustment Methodology
 - Apply seasonal adjustment factors by:
 - Year
 - County
 - For Ventura County:
 - Use an average adjustment factor for all years



SEASONAL ADJUSTMENTS



• Seasonal Adjustments: Coachella Valley



Note:

Adjustment factors are shown relative to Average Annual Weekday traffic

Model volumes are factored to represent either off-peak (July/August/September) or peak (February/March/April) traffic.



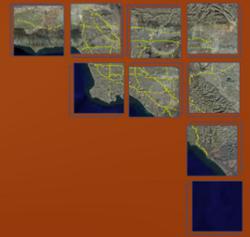
SEASONAL ADJUSTMENTS



- Coachella Valley
 - Seasonal adjustments separate from the rest of Riverside County
 - Limited Data:
 - 4 Caltrans traffic recorders in 2007
 - 1 Caltrans traffic recorder in 2008
 - One seasonal adjustment curve used for all years
 - All Coachella Valley counts were taken in 2007 or 2008
 - Both Peak season and off-peak season factors have been developed



DATA PROCESSING



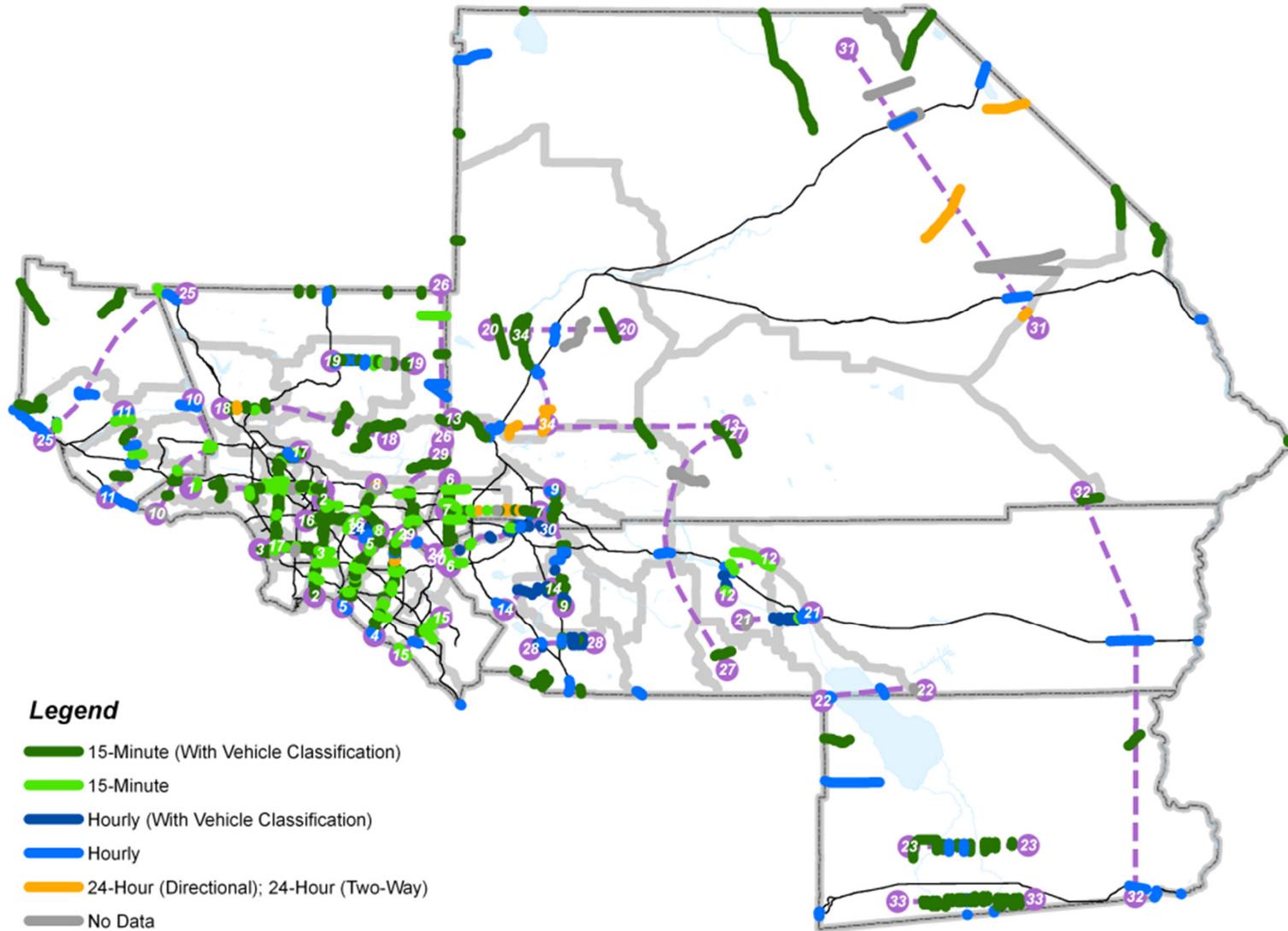
- **Expansion (Arterial and Collector Streets)**

- 15-minute with vehicle classification estimated for all arterial/collector locations
- Estimations based on RSA Groups

Data Format	Expansion of Data	Limitations of Expanded Data
1. 15-Minute with Vehicle Classification	Not necessary	None
2. 15-Minute	By vehicle type at 15-minute level	Potential for atypical truck splits
3. Hourly with Vehicle Classification	Expand each hour to 15 minutes Retain hourly vehicle class splits for sub-hours	None
4. Hourly (assumes directional data)	Expand each hour to 15 minutes Apply vehicles classes at 15 minute level	Potential for atypical truck splits
5. 24-Hour (no directional data)	Expand 24 hours to each hour then to 15 minutes (generalized peaking) Apply vehicles classes at 15 minute level	Potential for atypical truck splits Directional peaking characteristics are not likely correct



DATA PROCESSING AVAILABLE DATA DETAIL

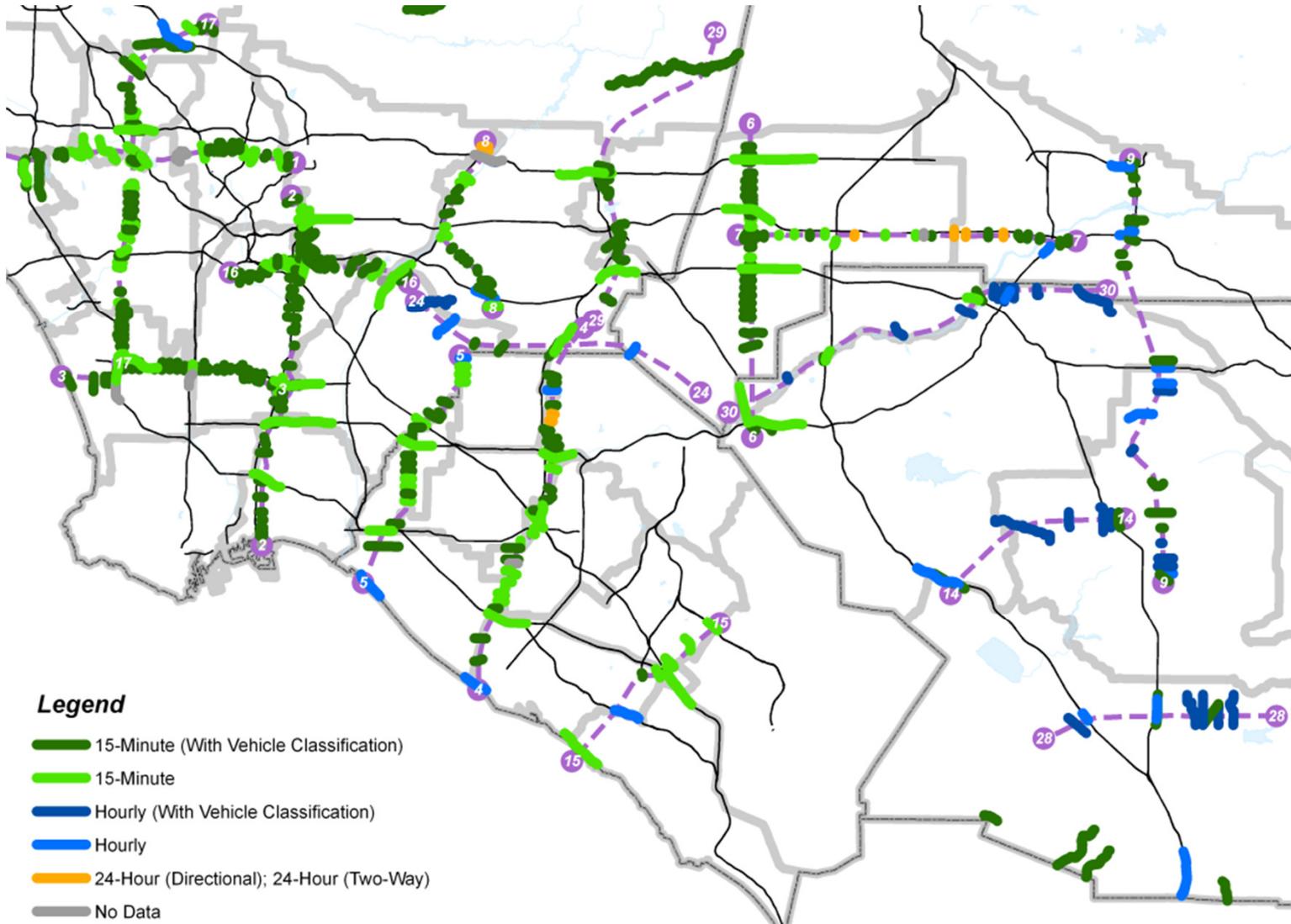


Legend

- 15-Minute (With Vehicle Classification)
- 15-Minute
- Hourly (With Vehicle Classification)
- Hourly
- 24-Hour (Directional); 24-Hour (Two-Way)
- No Data



DATA PROCESSING AVAILABLE DATA DETAIL

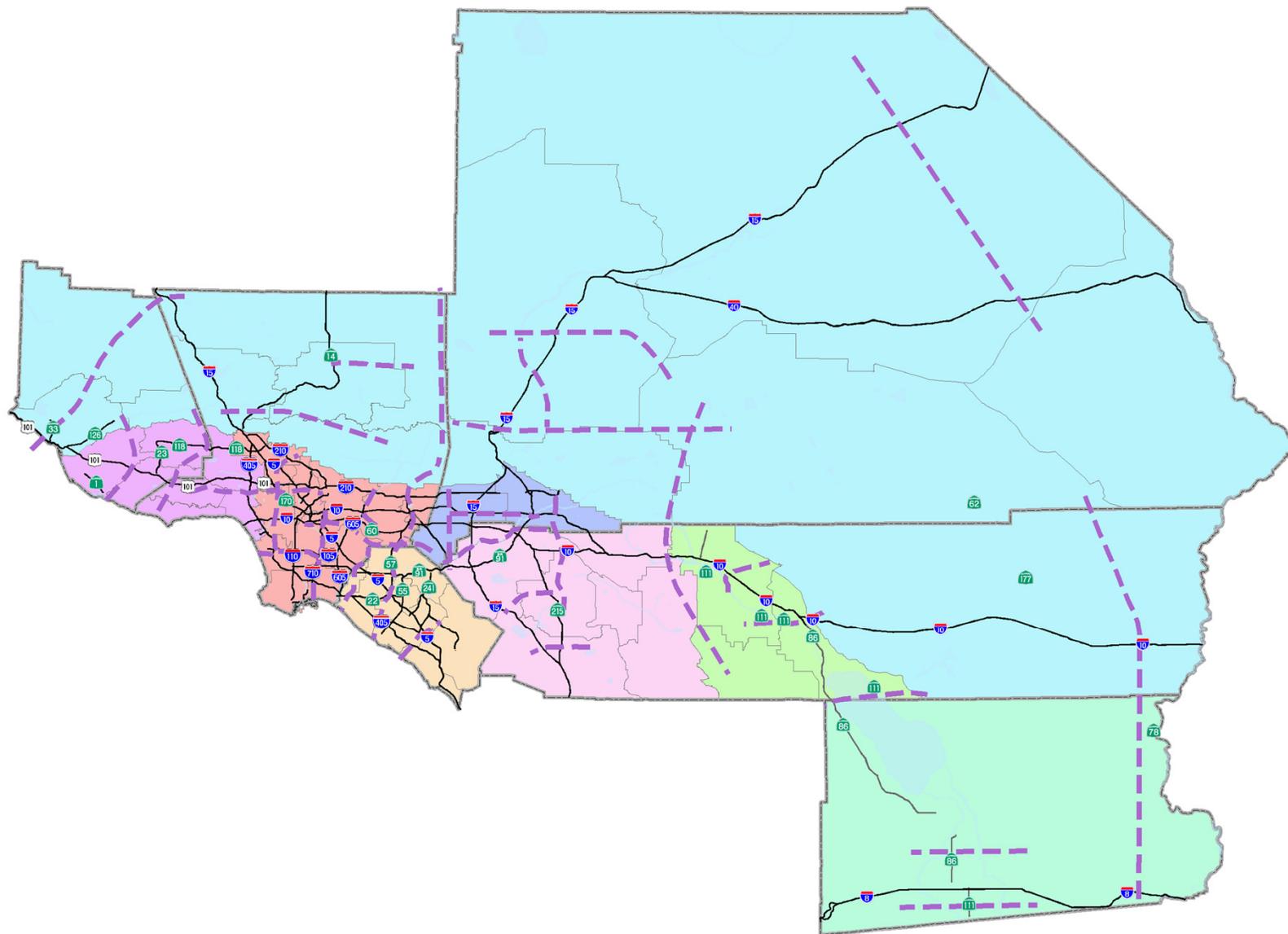


Legend

- 15-Minute (With Vehicle Classification)
- 15-Minute
- Hourly (With Vehicle Classification)
- Hourly
- 24-Hour (Directional); 24-Hour (Two-Way)
- No Data



DATA PROCESSING (RSA Groups)



RESULTS (Each Link)



- **Arterial Streets**

- Directional 24-Hour Volume
- Directional peak period/peak hour volumes
- Vehicle Classification Data
- Original Source Information

- **Freeways**

- 24-Hour Volume
- Directional peak period/peak hour volumes
- Original Source Information



RESULTS



• Screenline and Cordon Coverage

Data Format	Original Screenlines	Revised Screenlines	Database
1. Arterial and Collector (Existing Data)	423	534 (+26%)	135
2. Arterial and Collector (Collected Data)			350
3. Arterial and Collector (Low Priority with pre-existing Counts)			29
4. Arterial and Collector (No Count)			20*
5. Freeways	120	182 (+52%)	182**
6. HOV	45	53 (18%)	53
Total	588	769 (+31%)	769

*20 locations were unpaved (12), posted with "No Trespassing" signs (2), were removed from the screenline (2), or were not possible to count for other reasons (2).

**11 Freeway locations could benefit from updated count data collected as part of SCAG's Goods Movement Program.



DATABASE CONTENTS



- 5,522 traffic counts
 - Expansion of all data to 15 minutes
 - Expansion of arterial data to 13 vehicle classifications
 - Metadata such as date, source, and latitude and longitude
- Simple user interface
 - Export data summary to a spreadsheet
 - Review detailed data
 - View locations in Google Maps
 - Enter additional data



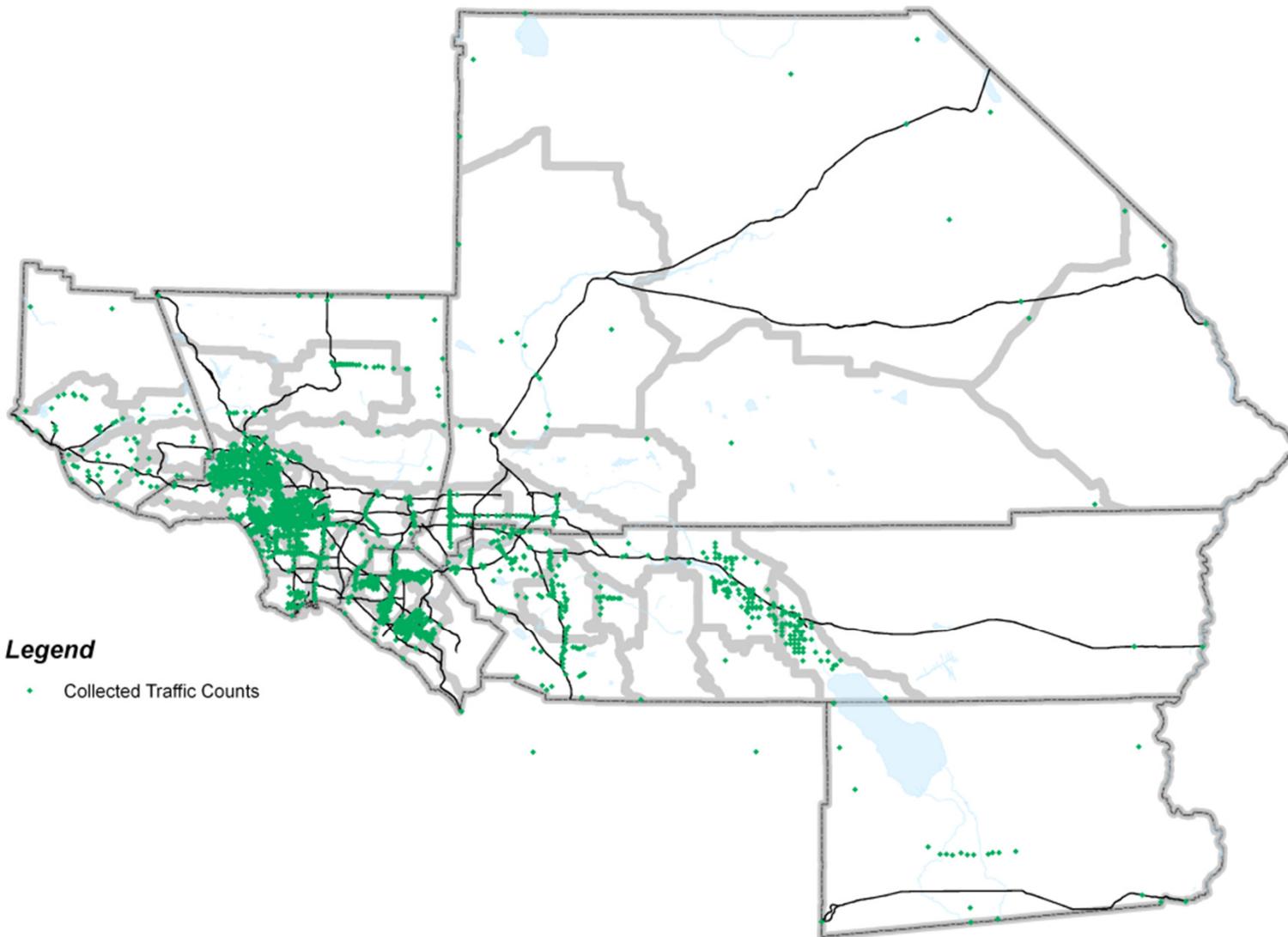
DATABASE CONTENTS



- GIS layers
 - Linked to the TransCAD network and ArcGIS
 - Pinpoint locations for:
 - Geocoded counts
 - Counts with GPS coordinates
- Powerful analysis tools
 - Modify peak periods, truck groupings
 - Import new data en-masse
 - Modify seasonal and annual adjustment factors



COUNT SUMMARY

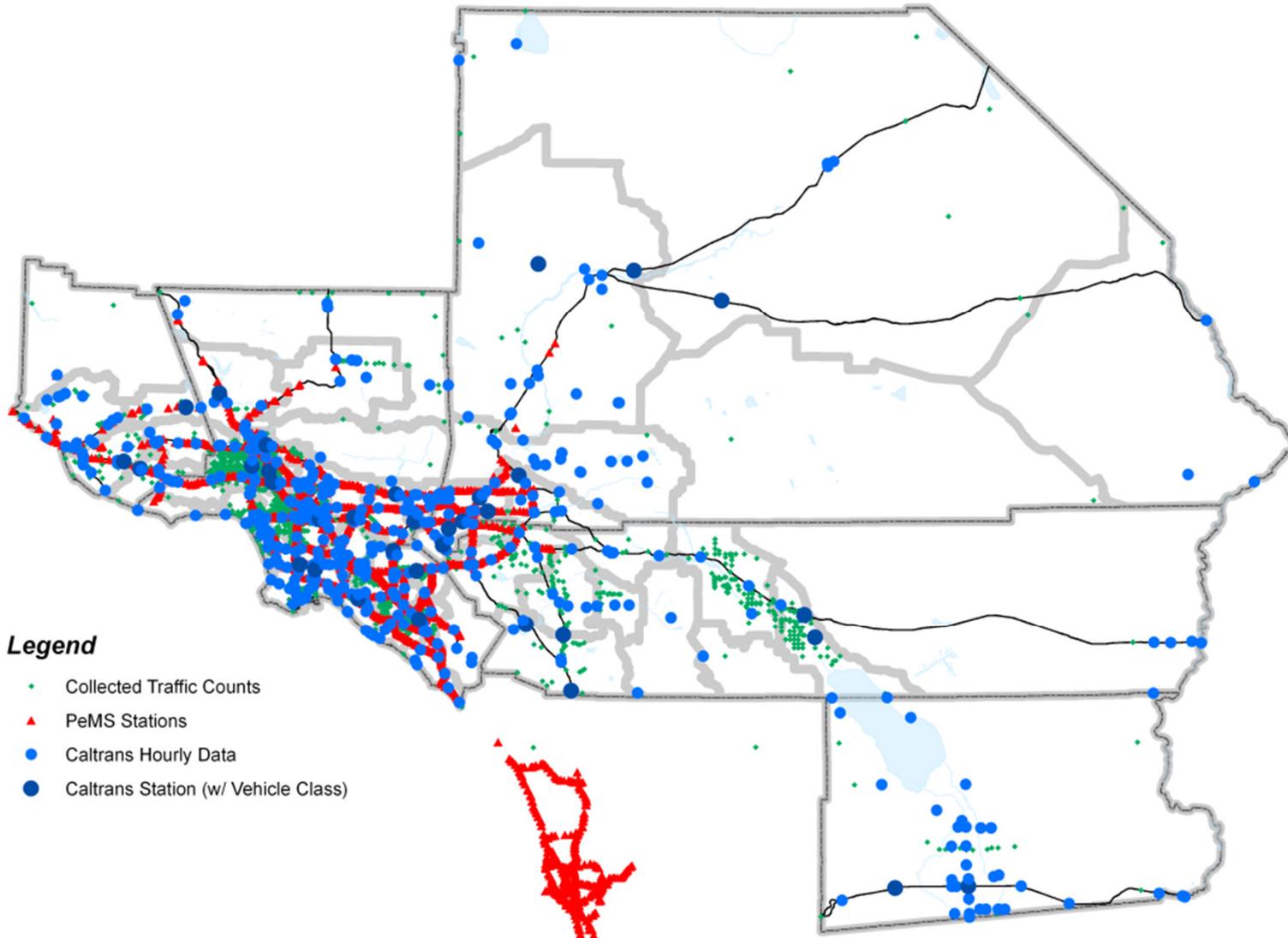


Legend

- Collected Traffic Counts



COUNT SUMMARY

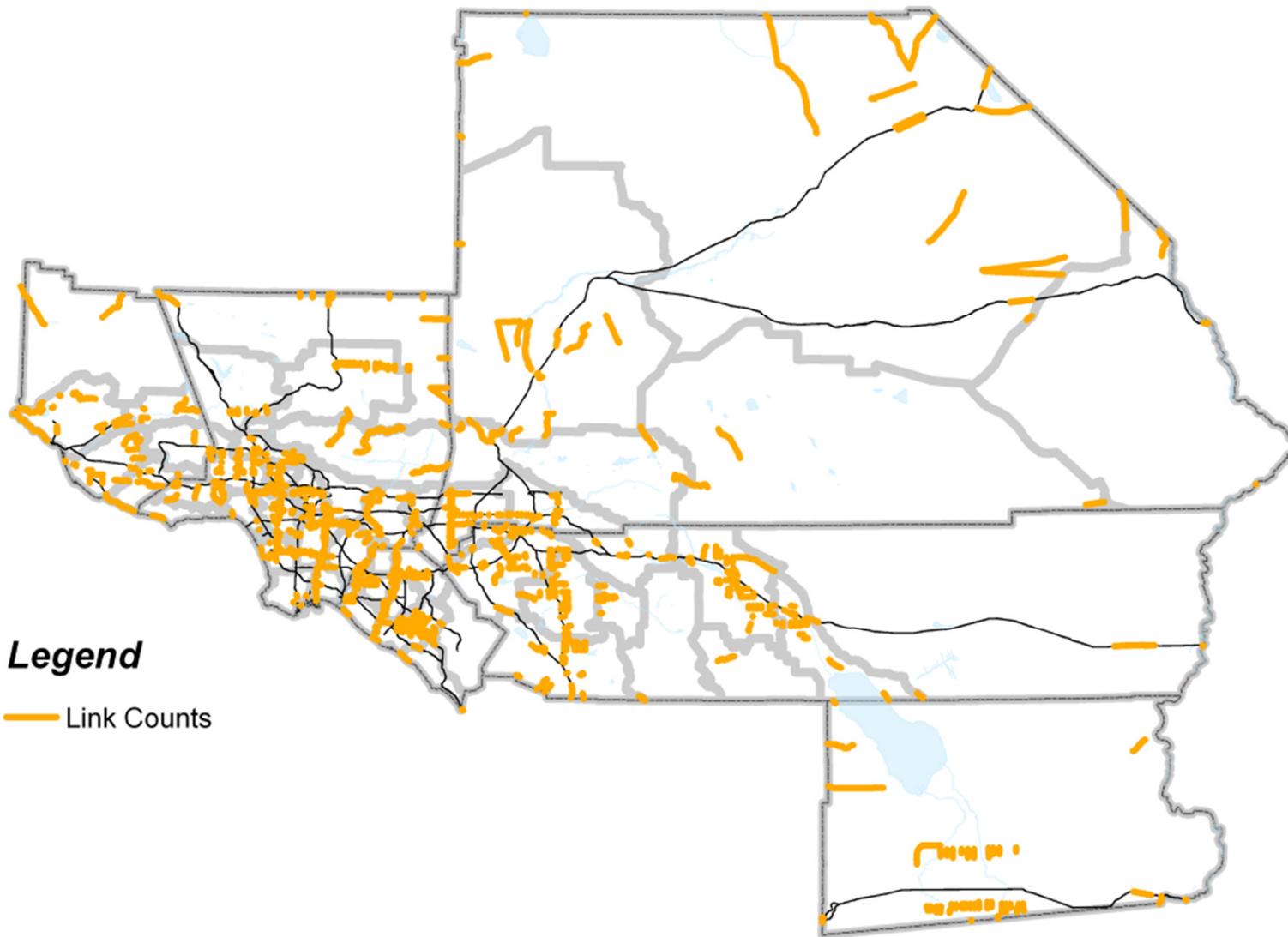


Legend

- Collected Traffic Counts
- ▲ PeMS Stations
- Caltrans Hourly Data
- Caltrans Station (w/ Vehicle Class)



COUNT SUMMARY

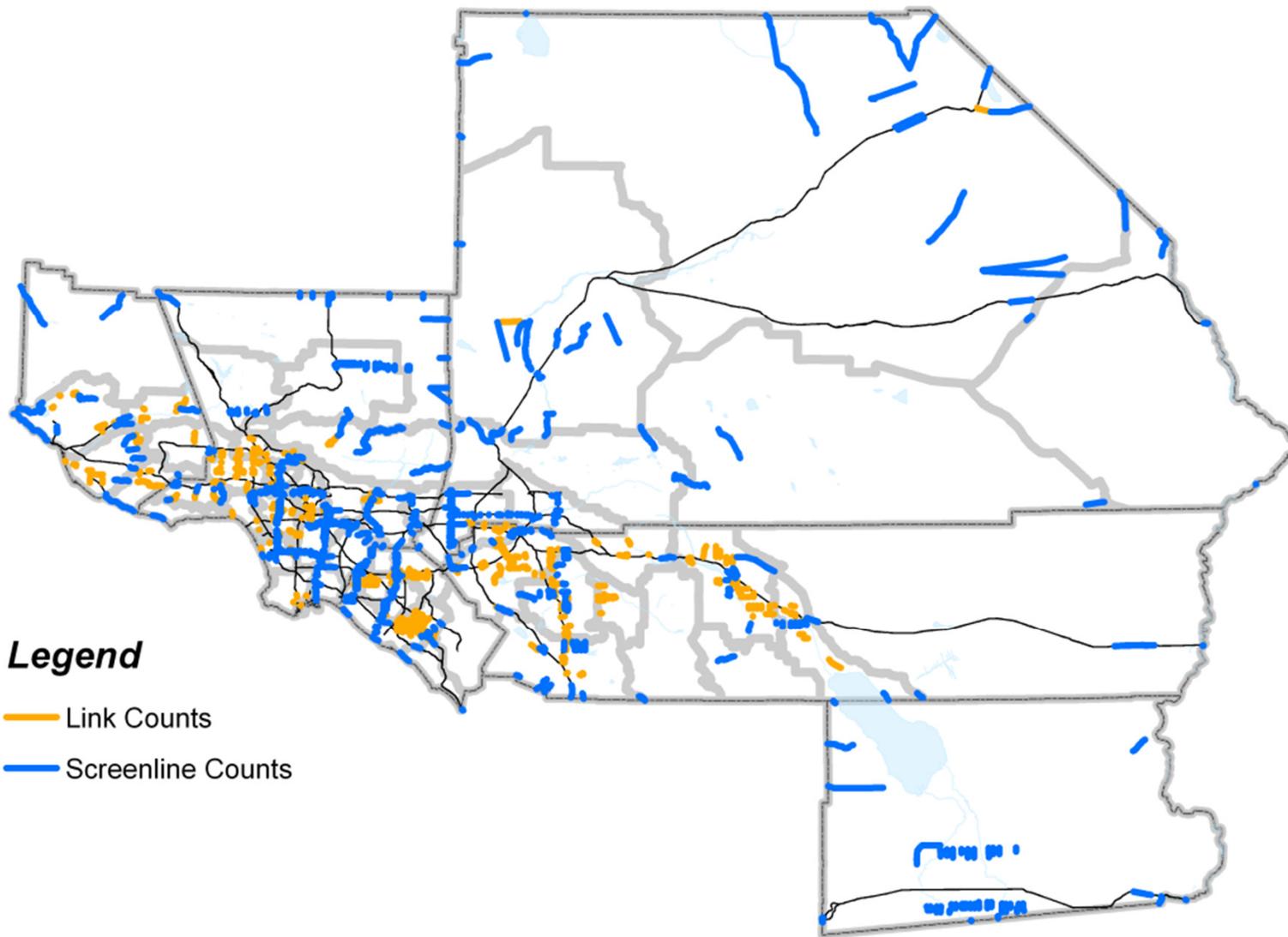


Legend

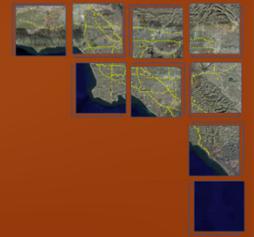
— Link Counts



COUNT SUMMARY



DATABASE INTERFACE



- Review screenline links

MainInterface

SCAG Screenline Count Database

Data Review

Review Screenline Links Review Count Descriptions

Review Screenline Count Summary Review All Count Summary Data

Data Export

All Counts Screenline Counts Screenline Counts (with Veh. Class)

Data Maintenance

Add Count Data Update Traffic Count Expansion Update GIS Data Tables

Back End Database

C:\SCAGLOCAL\SCAGCountDatabase_BE.mdb

Update Link

Exit Database Exit Interface

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

Review Screenline Links

aScreenlineLinks

Allow Edits Return to Main Menu

SCRL: 1 STATUS: OK

SCRL_LOC: 1 DATE: 3/1/2005

SCRL_WRK: 1 DAY: Tuesday

NAME: 1a Comments:

LINK_ID: 102672

LINK_DIR: 1 FT_DTL: Major Collector - Undivided

COUNT_ID: 99925 Lanes: 4_T

STREET: LAS VIRGENES RD CROSS_ST1: Agoura Rd

FT: Major Collector CROSS_ST2: Lost Hills Rd

AVAIL: Promised

JURIS: Calabasas / Los Angeles County

Available Counts: 99925 Use Selected Description Data

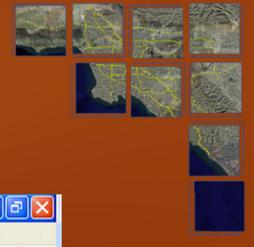
Record Navigation Selected Count

Goog Maps

SCRL	SCRL_I	SCRL_WRK	NAME	LINK_ID	LINK_DIR	COUN	STREET	FT
1	1	1	1a	102672	1	99925	LAS VIRGENES RD	Major Collector
1	2	1	1b	102600	1	42000	MULHOLLAND HIGHWAY	Major Collector
1	3	1	1c	102745	1	42001	N TOPANGA CANYON BLVD	Principal Arterial



DATABASE INTERFACE



34.134997254, -118.702757994 (1.1 LAS VIRGENES RD: Agoura Rd - Lost Hills Rd) - Google Maps - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://maps.google.com/maps?q=34.134997254,%20+-118.702757994%20(1.1%20LAS%20VIRGENES%20RD:%20Agoura%20Rd%20-%20Lost%20Hills%20Rd) - Wikipedia (en)

Most Visited Google Bing Wolfram|Alpha Google Maps Live Search Maps

34.134997254, -118.702757994 (1.1 ...

Web Images Videos Maps News Shopping Gmail more Help | Sign in

SCAG Screenlin

Data Review

Review Screenline Links

Review Screenline Count Summary

Data Export

All Counts Screenli Count

Data Maintenance

Add Count Data Upd Count

Back End Database

C:\SCAGLOCAL\SCAGCoun

Update Link

Google maps 34.134997254, -118.702757994 (1.1 LAS VIRGENES RD: Agoura Rd - Lost Hills Rd) Search Maps Show search options

Find businesses, addresses and places of interest.

Get Directions My Maps

1.1 LAS VIRGENES RD:
Agoura Rd - Lost Hills Rd
+34° 8' 5.99", -118° 42' 9.93"

Directions Search nearby Save to... more

Print Send Link

Traffic More... Map Satellite Terrain

1.1 LAS VIRGENES RD:
Agoura Rd - Lost Hills Rd
+34° 8' 5.99", -118° 42' 9.93"

Street view

Get directions - Search nearby
Zoom here - Save to My Maps - Send

Agoura Rd 101 El Camino Real 54 Agoura Rd 35 Agoura Rd 101 Lost Hills Rd Las Virgenes Rd Juan Bautista De Anza Park

2000 ft 500 m

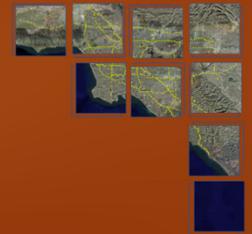
©2009 Google - Map data ©2009 Google - Terms of Use Report a problem

Done

FT
Major Collector
Major Collector
Principal Arterial



DATABASE INTERFACE



- Review individual counts

Return to Main Menu

CountID: Location:
 Date:
 Source:
 Data Type:
 Link ID: Day:

	AB (NB)	BA (SB)	Total:	View Description
Daily	<input type="text" value="9608"/>	<input type="text" value="8751"/>	<input type="text" value="18359"/>	Close Data
AM:	<input type="text" value="3124"/>	<input type="text" value="1309"/>	<input type="text" value="4433"/>	Show In Google Maps
PM:	<input type="text" value="1099"/>	<input type="text" value="1668"/>	<input type="text" value="2767"/>	

Allow Edits

Return to Main Menu

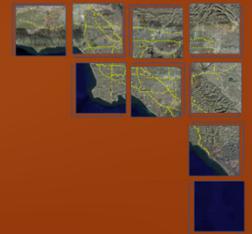
LocID:
 CountID:
 CountDate:
 LinkID:
 Location:
 City:
 County:
 Source:
 SourceID:
 Notes:

Match:
 Match2:
 Latitude:
 Longitude:
 Dir:
 StName:
 REQ_ID:
 RSA_Group:
 CheckUpdate:

[View Data](#) [Close Description](#)



DATABASE INTERFACE



- Or, just use the final results in Excel
 - Data by period, and daily total
 - Data by vehicle type

Data Export

All Counts

Screenline
Counts

Screenline Counts
(with Veh. Class)

CountID	SCRL	SCRL_LOC	RL_LI	LINK_ID	Street	CROSS_ST1	CROSS_ST2	Location
99925	1	1.1		102672	LAS VIRGENES RD	Agoura Rd	Lost Hills Rd	LAS VIRGENES ROAD N/O MULHOLLAND HIGHWAY
42000	1	2.1.2		102600	MULHOLLAND HIGHWAY	Valmar Rd	Old Topanga Canyon Rd	Mulholland Hwy bet. Valmar Rd & Old Topanga Canyon
42001	1	3.1.3		102745	N TOPANGA CANYON BLVD	Mulholland Dr	Old Topanga Canyon Rd	N Topanga Canyon Blvd bet. Mulholland Dr & Old Top
42002	1	4.1.4		125433	N SEPULVEDA BLVD	Mission Dump Rd	Mountaingate Dr	Sepulveda Blvd bet. Mission Dump Rd & Mountaingate
718314	1	5.1.5		11194	I 405 (SAN DIEGO FwY) SB	South of	Skirball Center Dr	I 405 - S @ BEL AIR CR (ML)
766954	1	6.1.6		1642715	I 405 (SAN DIEGO FwY) SB HOV	South of	Skirball Center Dr	I 405 - S @ BEL AIR CR (HV)
716733	1	7.1.7		11212	I 405 (SAN DIEGO FwY) NB	South of	Skirball Center Dr	I 405 - N @ BEL AIR CR (ML)
42003	1	8.1.8		100983	ROSCOMARE RD	Mulholland Dr	Belcanto	Roscomare Rd bet. Mulholland Dr & Belcanto Dr
42004	1	9.1.9		101591	N BEVERLY GLEN BLVD	Mulholland Dr	Nicada Dr	N Beverly Glen Blvd bet. Mulholland Dr & Nicada Dr
42005	1	10.1.10		101940	BENEDICT CANYON DR	Mulholland Dr	Wallingford Dr	Benedict Canyon Rd bet. Mulholland Dr & Wallingfor



THANK YOU!



- Thank you for your assistance in providing data to support this effort!

