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Transportation Data Analysis
Technical Assistance Program

JULY 2026

Complete Streets Analysis

Pomona

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Transportation Data Analysis Technical Assistance Program Overview

The Southern California Association of Governments (SCAG) Transportation Data Analysis Technical Assistance Program (TA Program) was established to advance the use of emerging transportation data platforms in local and regional planning practice. The program operates under SCAG's Regional Pilots Initiative program, which demonstrates next generation technologies to guide the Southern California region toward a more sustainable region. The TA Program also demonstrates how public agencies can utilize big data analytics to support regional sustainability goals aimed at reducing transportation-related carbon reduction emissions.

To support this effort, SCAG procured a regional subscription to StreetLight Insight®, providing data access at no cost to local agencies through June 2026. This subscription enables access to multimodal origin-destination data, safety analytics, truck telematics data, near real-time speed data, transportation network company activity data, and integrated transportation network tools. With this subscription, public agency staff and regional stakeholders can analyze local and regional travel behavior patterns using big data analytics to inform decisions that reduce emissions, improve multimodal access and connectivity, mitigate safety risk, and ensure equitable access to the broader transportation system.

The key objectives of the TA Program include:

- Encourage a culture of data-driven decision making across the region.
- Bridge traditional and emerging planning approaches, integrating big data with established planning tools and policy frameworks.
- Refine complex transportation research questions so they are appropriately scoped and right sized for big data analysis.
- Empower local partners through technical guidance, hands-on analytical support, and expanded access to advanced mobility datasets.
- Promote cross-platform validation, encouraging comparison between big data sources and traditional datasets to enhance data literacy and analytical reliability.
- Document best practices for leveraging big data in transportation planning and public sector decision-making.

Equitably deliver data access and technical guidance, prioritizing capacity building among smaller and underserved jurisdictions. SCAG solicited research questions from public agencies through a request for questions process in the fall of 2025. Selected case studies demonstrate practical applications of mobility analytics to address transportation safety, congestion, transit performance, demand management, and land use impacts on transportation.

Case Study Overview

The city of Pomona is undertaking significant changes to their complete streets policy and implementation by embedding complete streets classifications and designs into local zoning ordinances for all city-owned streets. This effort offers several benefits to the city: 1) the city's complete streets vision will be realized regardless of the mechanism by which developer plans are reviewed and approved and 2) environmental review and other administrative hurdles can be cleared as a batch for the entire plan, rather than separately for each facility.

At the beginning of this technical assistance effort, city staff submitted several questions that could be addressed with big data to advance the city's complete streets goals and support data-driven decision making. Ultimately, the city was interested in speed and safety performance as they relate to the city's complete streets initiative and design typology. Through this question, the city and consultant team explored how to use observed vehicle speeds from StreetLight and relate that data to roadway characteristics, including posted speed limit, functional classification, and the city's complete streets typology. The complete streets typologies are used to categorize the characteristics along streets such as streetscape, right-of-way and curb-to-curb width, roadway design and configuration, surrounding land use and zoning, etc. As part of this effort, StreetLight speed data were processed and joined to the city's roadway network using Python and PostgreSQL (PostGIS) to support both citywide summaries and segment-level review. Visit the [Pomona city webpage] for more information about these complete streets types. The analysis may help the city refine site-specific street classifications and designs to support their complete streets program. The data may also help the city with education to the public or stakeholders about safety considerations associated with the proposed street design recommendations. This task is intended to provide city staff with a usable dataset and an initial set of findings that can help inform future planning, design, and policy discussions around speed management and street design.

This memo summarizes the purpose of the work, presents preliminary findings from the speed analysis, and outlines additional ways the city can use the processed dataset going forward. The analysis methodology frames this work around comparing the city of Pomona's complete street types and other roadway attributes with observed 50th, 85th, and 95th percentile speeds from StreetLight, with outcomes of both summary findings and a roadway dataset with joined speed data.

Data Processing Methodology

The data consolidation process focused on integrating StreetLight speed data with the city of Pomona's roadway and complete streets datasets so that observed speed patterns could be evaluated in the context of local roadway characteristics.

StreetLight line segments were spatially joined (many-to-one) using Python and SQL (PostGIS) to the city's street polygons, allowing speed metrics from the vendor data to be associated with Pomona's transportation network and the associated planning attributes (see Exhibit 1). For intersections, IDs from all intersecting StreetLight segments were retained so that summary statistics and aggregation could be done to compute metrics like minimum, maximum, and mean speeds where multiple StreetLight segments overlapped with the city of Pomona data. The multiple IDs only apply to location types where more than one street feature converge (intersections, knuckles[1], etc.). Segment locations only have one StreetLight feature that overlap, therefore only one ID is joined.

Exhibit 1 Example Join Between Streetlight and Pomona Datasets

To support a range of planning and screening uses, speed metrics were organized by percentile measures, including the 85th and 95th percentiles, as well as by time of day and day-of-week groupings. This allows the city to examine not only traditional operating speed metrics (85th percentile), but also the higher-end speed conditions (95th percentile) that are often most relevant for understanding speeding patterns and potential safety concerns.

[1] A knuckle is a compact, rounded intersection treatment where two local streets (only 2 legs) meet, often at approximately 90 degrees, with curb geometry that flares into a small bulb or micro cul-de-sac. Knuckles are generally used on local streets in subdivisions or developments to provide additional turning space, calm vehicle movements, and resolve tight intersection geometry without constructing a full cul-de-sac.

The complete streets typology was also carried through both in its original form and in simplified categories to support clearer summaries and comparisons across street types.

Important Analytical Considerations

One important data issue identified during processing is that Streetlight speed data on individual segments can exhibit variability based on the sample size (a direct result of the segment's volume) and proximity of the segment relative to other facilities. In this analysis, the team observed suspected influences of nearby freeway segments on the speed metrics for non-freeway segments. Segments near freeways may be artificially inflated due to incorrect attribution of freeway speeds to nearby segments within Streetlight's data. To address this concern, local streets within one foot and 20 feet of freeways were flagged for review, and many of the preliminary summary tables exclude streets within 20 feet of a freeway.

The project team found segments not near freeways had average 50th, 85th, and 95th percentile speeds of approximately 30, 37, and 42 mph, respectively, while flagged freeway-adjacent segments averaged roughly 39, 48, and 53 mph (see Exhibit 2 and Exhibit 3). In other words, some segments adjacent to freeways exhibited roughly 30 percent higher observed speeds. This discrepancy matters for corridor-specific and citywide interpretation. For local segments near freeways, unusually high observed speeds might reflect data conflation rather than typical operating conditions on the local street itself, though the city may want to verify this finding with a local speed study or another data source before making decisions about these segments.

The preliminary findings reported in this document focus primarily on summaries that exclude those flagged segments. This is an important quality control step and should be considered in future use of the dataset.

Exhibit 2 Observed Speeds by Proximity to Freeways

Freeway Proximity (20ft)	# of Segments	# of Miles	% of Miles	Average 50thPercentile Speed (mph)	Average 85th Percentile Speed (mph)	Average 95th Percentile Speed (mph)
No	1,198	66	96%	30	37	42
Yes	45	3	4%	39	48	53

Exhibit 3 Observed Speeds (85th Percentile) near Freeway

Key Findings

Observed Speeds Generally Increase with Roadway Class

The initial summaries show a clear positive relationship between roadway class and observed speed (see Exhibit 4). Major arterials had the highest average observed speeds among the roadway classes shown, followed closely by minor arterials, while collectors had lower speeds and local streets had substantially lower speeds.

Major arterials averaged 32.7 mph at the 50th percentile, 40.9 mph at the 85th percentile, and 45.3 mph at the 95th percentile. Minor arterials were nearly as high, at 32.2, 40.0, and 44.1 mph, while collectors averaged 25.9, 33.4, and 37.6 mph. Local streets were markedly lower at 16.4, 22.3, and 25.8 mph.

Speed metrics are not typically available for alleys, and the Pomona dataset only contains a very small number of alley segments. These segments are near a freeway, so the high speeds may be a result of the data consideration described in the previous section (misattribution of freeway speeds onto nearby segments).

This pattern is not surprising, but it is useful. It suggests that using observed speed data, the city can capture meaningful differences in how streets function and how drivers behave across the network. It also reinforces that arterial streets are where the city is most likely to observe the highest operating speeds and where speed management and design discussions may be a priority.

Exhibit 4 Observed Speeds by Road Classification, Citywide

Road Class	Mean 95th Percentile Speed	Mean 85th Percentile Speed	Mean 50th Percentile Speed
Major Arterial	45.3	40.9	32.7
Minor Arterial	44.1	40.0	32.2
Railroad Crossing	39.7	35.2	27.0
Collector	37.6	33.4	25.9
Alley[2]	29.3	27.7	25.0
Intersection	31.2	27.4	20.8
Local	25.8	22.3	16.4
Other	24.4	21.1	13.0
Knuckle	23.3	20.3	15.6
Cul de Sac	22.3	18.9	13.2
Private	21.7	18.0	13.7
Total	***31.9***	***28.1***	***21.5***

[2] Note there were a very limited number of alleys in the dataset, and these segments may exhibit artificially inflated speeds due to their proximity to freeway segments.

Higher-Percentile Observed Speeds Exceed Posted Speed Limits

When observed speeds are grouped by posted speed limit, the data show that 85th and 95th percentile speeds exceed posted limits across every posted speed limit shown in the preliminary analysis (see Exhibit 5). The largest differences were observed on 25–30 mph streets and on 45 mph streets.

- 25 mph streets: the mean 85th and 95th percentile speeds were 31.7 mph and 36.0 mph.
- 30 mph streets: the mean 85th and 95th percentile speeds were 36.5 mph and 40.5 mph.
- 45 mph streets: the mean 85th and 95th percentile speeds were 48.4 mph and 52.7 mph.

The 85th and 95th percentile metrics help highlight where speed management concerns are likely to be most pronounced. The city of Pomona could choose to explore the GIS data to further explore location-specific conditions along corridors where excessive speeding is present in the data.

Exhibit 5 Difference Between Observed Speeds and Posted Speed Limit, Citywide

	50th Percentile		85th Percentile		95th Percentile	
Posted Speed Limit	Mean (mph)	Delta from Posted Speed Limit	Mean (mph)	Delta from Posted Speed Limit	Mean (mph)	Delta from Posted Speed Limit
0	18.7	NA	24.9	NA	28.6	NA
25	24.0	-1.0	31.7	6.7	36.0	11.0
30	28.9	-1.1	36.5	6.5	40.5	10.5
35	30.2	-4.8	38.1	3.1	42.3	7.3
40	33.6	-6.4	41.9	1.9	46.6	6.6
45	41.2	-3.9	48.4	3.4	52.7	7.7
Total	***21.7***	***NA***	***28.3***	***NA***	***32.1***	***NA***

Speed Differences by Functional Class Persist Even When Limiting the Analysis to Non-Local Streets with Posted Speed Data

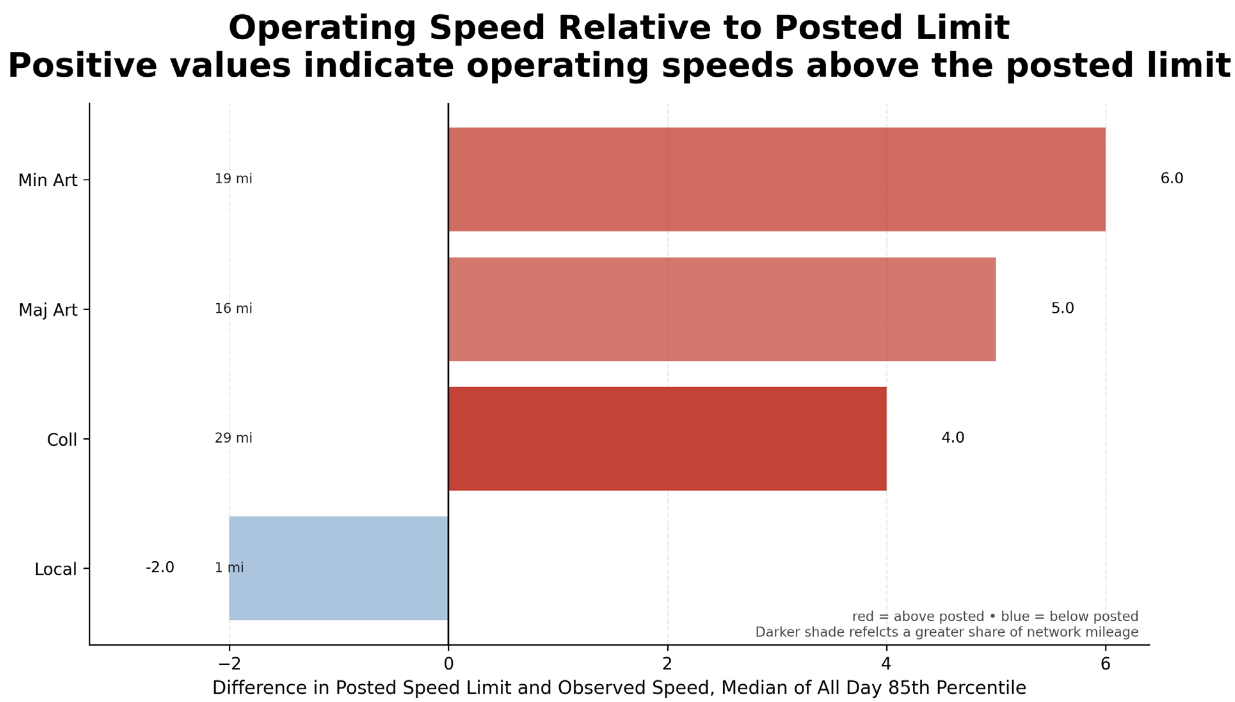
When the analysis is limited to collectors, minor arterials, and major arterials with posted speed limit data, observed speeds remain high across all three road classifications (see Exhibit 6 and Exhibit 7). Collectors averaged 26.0 mph at the 50th percentile, 33.6 mph at the 85th percentile, and 37.7 mph at the 95th percentile. Major arterials averaged 32.7, 40.9, and 45.3 mph, while minor arterials averaged 32.2, 40.0, and 44.0 mph.

The differences between collectors, minor arterials, and major arterials are relatively modest in this subset, and speeding remains present across all non-local streets. An important nuance suggests the issue is not limited only to a few high-speed arterial corridors. Even within the broader non-local street network, higher-percentile operating speeds remain elevated enough to merit additional review, especially where the surrounding land use or complete streets vision aims for a lower-speed and more multimodal context.

Exhibit 6 Observed Speeds by Functional Classification, Citywide

Functional Classification	Mean 50th Percentile Speed	Mean 85th Percentile Speed	Mean 95th Percentile Speed
Collector	26.0	33.6	37.7
Major Arterial	32.7	40.9	45.3
Minor Arterial	32.2	40.0	44.0
Total	***29.0***	***36.7***	***40.9***

Exhibit 7 Operating Speeds Relative to Posted Speed Limit by Functional Classification, Citywide



Complete Streets Lane-Change Categories Show Meaningful Differences in Observed Speeds

The preliminary summaries also compare speed outcomes to simplified complete streets categories based on lane-change calculations (difference between existing lane count and complete streets lane count). Among the categories shown in Exhibit 8 and Exhibit 9, streets classified as "staying two lanes" averaged 33.0 mph at the 50th percentile, 41.2 mph at the 85th percentile, and 45.6 mph at the 95th percentile. The delta between observed speeds and posted speed limits are situated on the high end for the 85th and 95th percentile speeds for this category at 5.6 mph and 10 mph. Streets classified as "already one lane" had lower 85th and 95th percentile speeds and deltas between observed versus posted speed limits. The "staying three lanes" category was highest, though it represents a very small share of the network (0.7

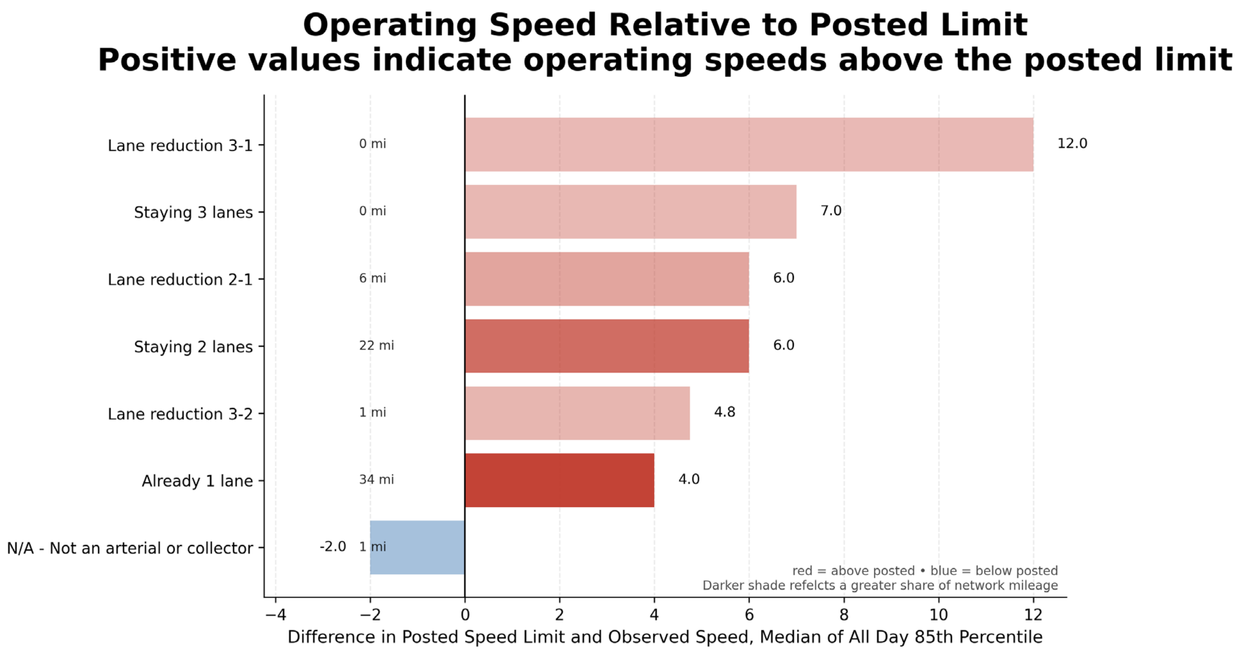
percent), averaging 44.5, 52.0, and 57.0 mph and have a very high delta between observed versus posted speed limit.

These findings suggest that the city's complete streets typology can be a useful organizing framework for understanding speed conditions. Segments with no planned lane reduction and with more travel lanes tend to exhibit higher observed speeds, which may indicate locations where the current planned typology does not fully align with observed operating conditions. Additionally, some typology categories represent small mileage totals, so they should be interpreted as screening-level indicators rather than standalone evidence for a design change.

Exhibit 8 Difference Between Observed Speeds and Posted Speed Limit by Changes in Lanes, Citywide

Changed in Lanes	# Miles	% Miles	Mean 50th Percentile Speed	Mean 50th Percentile Delta from Posted Speed Limit	Mean 85th Percentile Speed	Mean 85th Percentile Delta from Posted Speed Limit	Mean 95th Percentile Speed	Mean 95th Percentile Delta from Posted Speed Limit
Already 1 lane	34.2	52.1%	28.0	-3.6	35.6	4.0	39.7	8.1
Staying 2 lanes	22.1	33.6%	33.0	-2.6	41.2	5.6	45.6	10.0
Lane reduction 2-1	6.1	9.3%	30.0	-3.4	37.8	4.4	42.1	8.7
N/A - Not an arterial or collector	1.4	2.2%	24.1	-10.1	32.4	-1.8	36.9	2.8
Lane reduction 3-2	1.2	1.9%	33.3	-5.2	42.5	4.0	47.3	8.8
Staying 3 lanes	0.5	0.7%	44.5	-0.5	52.0	7.0	57.0	12.0
Lane reduction 3-1	0.1	0.2%	28.7	3.7	37.2	12.2	41.5	16.5
Total	***65.6***	***100.0%***	***29.6***	***-3.4***	***37.4***	***4.4***	***41.6***	***8.6***

Exhibit 9 Operating Speeds Relative to Posted Speed Limit by Proposed Lane Changes, Citywide



Higher-Volume Corridors Appear to Have High Excessive Speeds, Though Some Categories Are Very Small

"Road diets" or lane reductions are commonly considered for streets with an annual average daily traffic (AADT) below about 20,000 or 25,000 vehicles per day, based on FHWA safety guidance. This countermeasure improves safety for all road users and can help reduce operating speeds. The project team examined speed patterns on streets across three AADT categories, based on these reference thresholds: AADT of 20,000 or less, AADT from 20,001 to 25,000, and AADT above 25,000.

The following cross-tabulation (see Exhibit 10 and Exhibit 11) shows 50 (median), 85th, and 95th percentile speeds by lane-change category and AADT. The speed delta columns show the difference between the 50th, 85th, or 95th percentile speed and the posted speed limit. In general, these results show that higher-volume streets exhibit higher observed speeds and larger deltas above posted speed limits than streets with AADT at or below 20,000. Within the AADT <= 20,000 bracket, speeds are higher on multi-lane roads than arterials or collectors with one lane in each direction or local streets. The highest instance of 95th percentile speeds exceeding the posted speed limit occurs on lower-volume streets designated for a lane reduction from three lanes to one lane in either direction.

It's important to note that these high-volume subgroups account for very little mileage in the summary table, often less than 1 percent. These high-volume corridors are important for screening; however, analysis of outcomes should be interpreted carefully. Additionally, some high-volume segments were filtered out of this analysis due to their proximity to freeways and the risk of artificially inflated speed values.

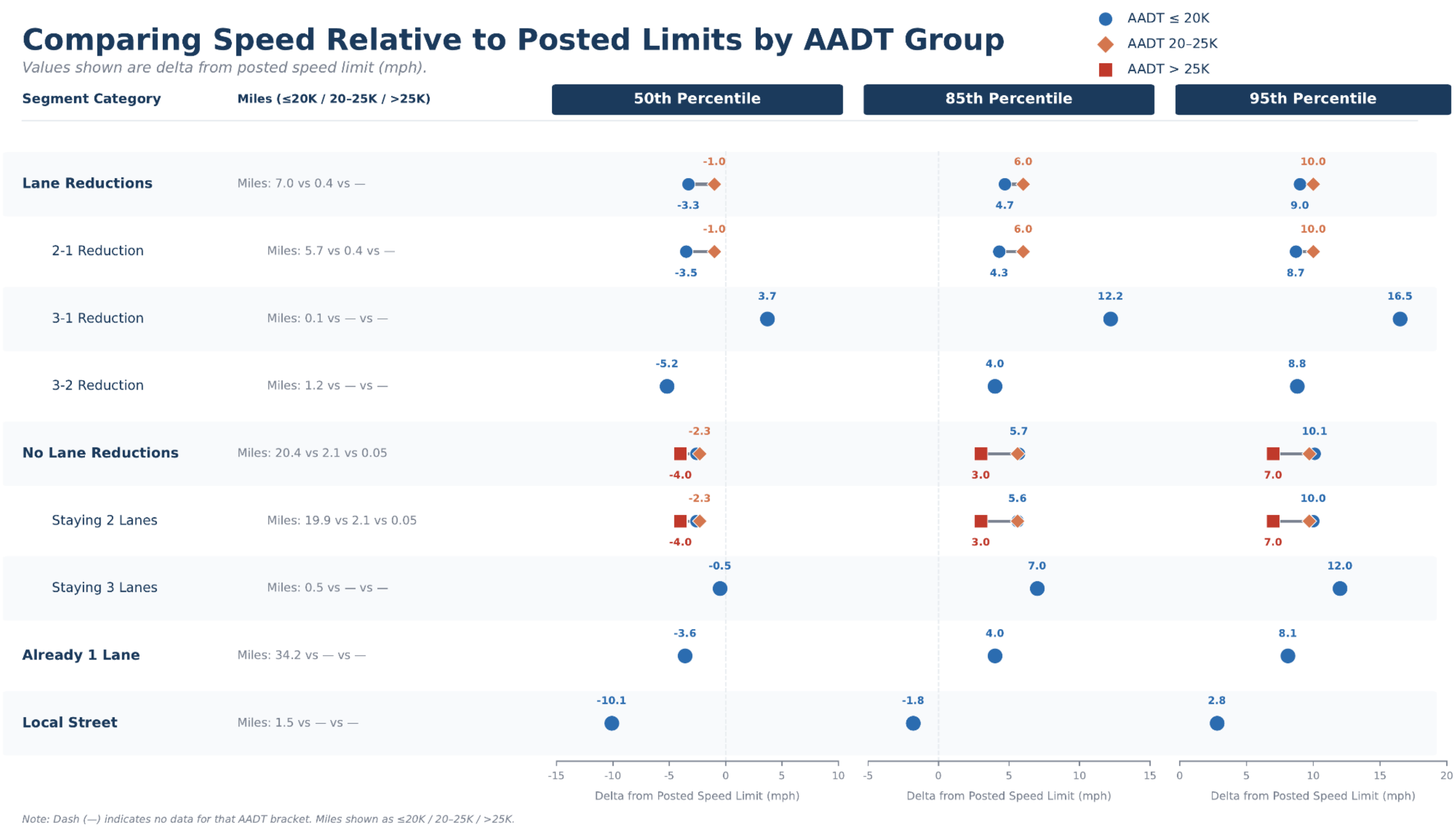
Exhibit 10 Difference Between Observed Speeds and Posted Speed Limits by Proposed Changes to Number of Lanes and AADT

Volume and Lane Categories	Miles	% Miles	50th Percentile Speed	50th %ile Delta from Posted Speed Limit	85th Percentile Speed	85th %ile Delta from Posted Speed Limit	95th Percentile Speed	95th %ile Delta from Posted Speed Limit
AADT <= 20k	**63.07**	**96.1%**	**29.5**	**-3.4**	**37.3**	**4.4**	**41.5**	**8.6**
Lane Reduction	**7.01**	**10.7%**	**30.0**	**-3.3**	**38.0**	**4.7**	**42.3**	**9.0**
2-1 Reduction	5.66	8.6%	29.7	-3.5	37.5	4.3	41.8	8.7
3-1 Reduction	0.13	0.2%	28.7	3.7	37.2	12.2	41.5	16.5
3-2 Reduction	1.22	1.9%	33.3	-5.2	42.5	4.0	47.3	8.8
No Lane Reduction	**20.41**	**31.1%**	**33.2**	**-2.6**	**41.4**	**5.7**	**45.8**	**10.1**
Staying 2 Lanes	19.93	30.4%	33.1	-2.6	41.3	5.6	45.7	10.0
Staying 3 Lanes	0.48	0.7%	44.5	-0.5	52.0	7.0	57.0	12.0
Already 1 Lane	**34.19**	**52.1%**	**28.0**	**-3.6**	**35.6**	**4.0**	**39.7**	**8.1**
Local Street	**1.45**	**2.2%**	**24.1**	**-10.1**	**32.4**	**-1.8**	**36.9**	**2.8**
AADT 20-25k	**2.53**	**3.9%**	**33.3**	**-2.2**	**41.1**	**5.6**	**45.2**	**9.7**
Lane Reduction	**0.44**	**0.7%**	**44.0**	**-1.0**	**51.0**	**6.0**	**55.0**	**10.0**
2-1 Reduction	0.44	0.7%	44.0	-1.0	51.0	6.0	55.0	10.0
No Lane Reduction	**2.09**	**3.2%**	**32.7**	**-2.3**	**40.6**	**5.6**	**44.7**	**9.7**
Staying 2 Lanes	2.09	3.2%	32.7	-2.3	40.6	5.6	44.7	9.7
AADT > 25k	**0.05**	**0.1%**	**36.0**	**-4.0**	**43.0**	**3.0**	**47.0**	**7.0**
No Lane Reduction	**0.05**	**0.1%**	**36.0**	**-4.0**	**43.0**	**3.0**	**47.0**	**7.0**
Staying 2 Lanes	0.05	0.1%	36.0	-4.0	43.0	3.0	47.0	7.0
All Facilities	**65.64**	**100.0%**	**29.6**	**-3.4**	**37.4**	**4.4**	**41.6**	**8.6**

Color Keys:

- Speeds of 29.9 mph or less OR speed delta of 3+ mph *below* the posted speed limit
- Speeds of 30 to 39.9 mph OR speed delta of 3 to 4.9 mph above the posted speed limit
- Speeds of 40 to 49.9 mph OR speed delta of 5 to 9.9 mph above the posted speed limit
- Speeds of 50+ mph OR speed delta of 10+ mph above the posted speed limit

Exhibit 11 Visualization of the Difference Between Observed Speeds and Posted Speed Limits by Proposed Changes to Number of Lanes and AADT



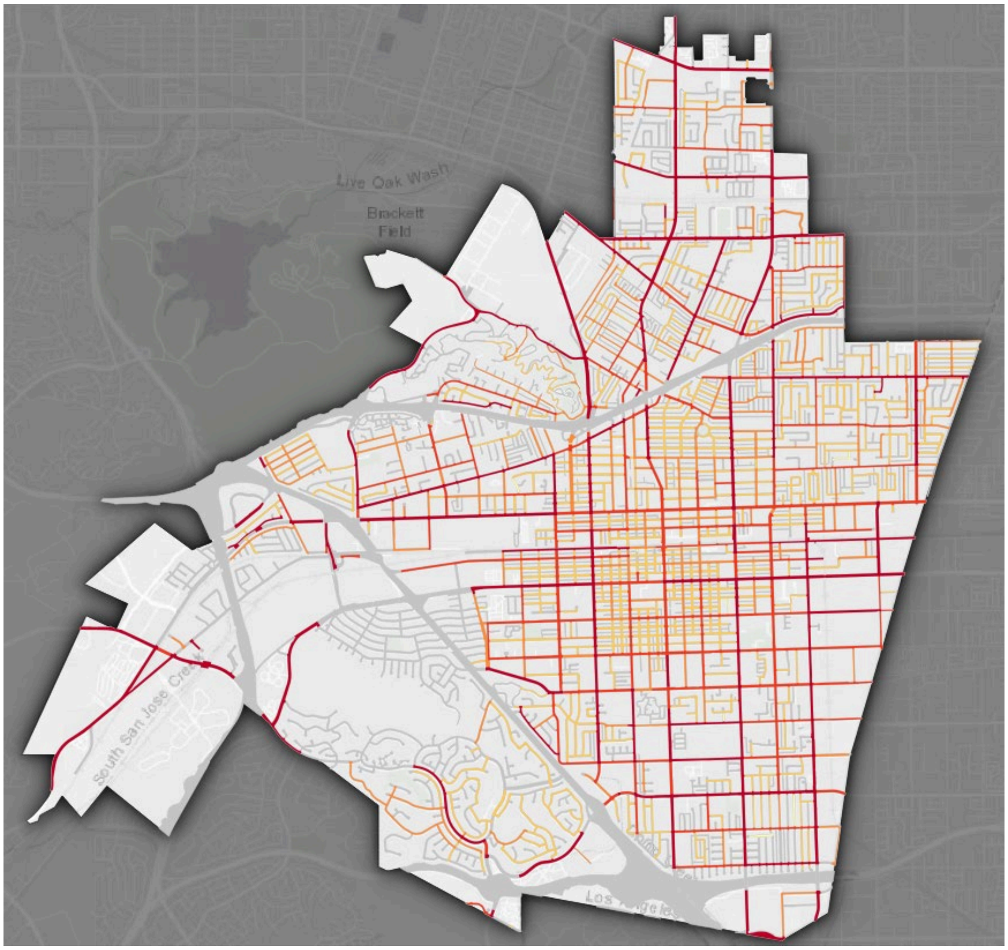
Data Outputs and Usage

As part of this technical assistance effort, the city will receive multiple data products derived from the data processing and conflation work. These data deliverables include:

- A processed wide table of StreetLight speed metrics by percentile, time period, and day grouping.
- A CSV and GIS dataset with StreetLight speed metrics joined to the City's complete streets network.
- An Excel workbook containing the same joined data in a format that can be readily sorted, filtered, and summarized using pivot tables and crosstabs.

These datasets provide the city of Pomona with a segment-level view of observed operating speeds alongside its own roadway attributes and complete streets planning classifications. The city may use the data to examine specific corridors, identify segments where observed speeds appear misaligned with street context, and support future discussions about street design, traffic calming, or implementation priorities. The map example in Exhibit 12 displays the 85th percentile speeds along all segments and the max 85th percentile for intersections. Streets represented as grey lines do not have StreetLight speed data available or are freeways, which were excluded from this analysis.

Exhibit 12 85th Percentile Speeds



What Pomona Can Do with This Data

One of the most valuable outcomes of this effort is not only the initial findings and guidance for how to use this data, but the delivery of processed and ready-to-use roadway dataset that combines observed speed data with the complete streets typology network and roadway attributes. City staff may use this dataset in several practical ways, not limited to:

1. **Corridor screening and prioritization**. City staff can sort and filter the Excel or GIS data to identify corridors where the 85th or 95th percentile speed is high relative to the posted speed limit, where roadway type and complete street type suggest a more multimodal context, or where speeds appear elevated despite a lower-speed design intent. Additionally, the Excel workbook includes several PivotTables that can be used as a template to diver deeper into the relationship between roadway design and observed speeds. This can help prioritize segments for further staff review or design reconsideration.

2. **Design and policy discussions**. The dataset links observed speeds to posted speed, functional class, and complete streets type, which can help city staff evaluate whether certain roadway configurations are consistently associated with higher operating speeds. While this type of analysis does not prove causation by itself, it may be a useful evidence base for identifying where roadway design and context may not be aligned with speed management goals.

3. **Complete streets refinement.** This data can also support project development and refinement of complete streets. The data can be used to evaluate where observed operating speeds may suggest the need for additional review and analysis. Streets with no planned lane reduction, multiple travel lanes, and elevated 85th or 95th percentile speeds may be candidates for future planning, corridor studies, or conceptual design efforts.

Conclusions

This technical assistance task provides the city of Pomona with both an initial analytical foundation and a dataset for future planning and safety work. The processed StreetLight and complete streets datasets give the city a practical resource it can continue to use to support their traffic safety and complete streets goals. The data can support future screening, corridor prioritization, complete streets refinement, and multimodal analysis, helping Pomona connect observed speed conditions to street design decisions in a systematic and data-driven way.

Appendix: StreetLight Study Parameters, Post-Processing, and StreetLight Source Data Methodology White Paper

StreetLight Study Parameters

The consultant team coordinated with StreetLight analysts to generate the data required for this analysis. Due to processing limitations associated with the size of the city of Pomona network, the analysis was divided into five separate study areas. Each study area was processed independently within the StreetLight platform using identical parameters to ensure consistency and comparability across all results.

Upon completion, the outputs from all five study areas were merged into a single, citywide dataset during post-processing.

The following parameters were used consistently across all five StreetLight analyses:

- **Years:** 2024, 2025
- **Months:** April, May, June, July
- **Day Types:**
  - Weekday (Monday–Thursday)
  - Weekend (Saturday–Sunday)
  - All Days
- **Day Parts:**
  - Early AM (midnight-6 a.m.)
  - Peak AM (6-10 a.m.)
  - Midday (10 a.m.-3 p.m.)
  - Peak PM (3-7 p.m.)
  - Late PM (7pm.-mignight)
  - All Day
- **Speed Percentiles:**
  5th, 10th, 15th, 20th, 25th, 30th, 35th, 40th, 45th,
  50th, 55th, 60th, 65th, 70th, 75th, 80th, 85th, 90th, 95th

Following completion of all StreetLight runs, the datasets were combined and spatially joined to the Pomona street network GIS layer to support corridor-level analysis.

StreetLight Data Post-Processing

StreetLight Data outputs were provided by StreetLight as both tabular network performance datasets and corresponding spatial segment geometries. The tabular outputs included speed percentiles (5th through 95th), inferred volumes, and average daily traffic estimates, disaggregated by day type and time of day.

All five tabular datasets were consolidated into a single dataset and standardized to ensure consistency across batches. Day-type and time-of-day fields were normalized and combined into a unified time-period identifier, allowing for consistent comparison across weekday, weekend, and all-day conditions, as well as across defined time-of-day periods (e.g., peak periods and off-peak conditions). Selected performance metrics, including key speed percentiles and volume measures, were retained and reshaped from long to wide format using a pivot operation. This resulted in a structure where each row represents a single StreetLight segment and each column represents a specific combination of **metric** (e.g., 85th percentile speed), **day type** (e.g., weekday), and **time period** (e.g., 6-10 a.m.). The structure can be represented as this combination of metrics: <**metric**>_<**day_type**>__<**time_period**>. Column naming conventions were further simplified to concise, analysis-ready formats (e.g., **p85_wkdy_6am_10am**, **aadt_all_all_day**) to support downstream processing and interpretation.

Spatial StreetLight segment geometries were similarly merged across all batches into a single geospatial dataset. These geometries were joined to the processed tabular metrics using a common zone identifier and reprojected to a common coordinate system (California State Plane, EPSG:2229) to ensure alignment with the Pomona street network. To integrate StreetLight data with the city's roadway segments, a spatial join was performed between the StreetLight segments and the city's roadway geometry using a buffered intersection approach. StreetLight geometries were buffered by a small tolerance (5 feet) to account for minor spatial misalignments and differences in geometric representation. Records with null identifiers or associated with service roads were excluded to maintain consistency with the roadway network used for StreetLight analysis.

Because multiple StreetLight segments can intersect a single city of Pomona roadway feature, the resulting relationship is many-to-one. This was addressed by aggregating all intersecting StreetLight segments to the corresponding roadway segment. For each roadway segment, the set of associated StreetLight zone identifiers was retained, and a count of contributing segments was calculated to support quality control and interpretation. Performance metrics were then aggregated to the roadway segment level using summary statistics such as mean, minimum, and maximum values, depending on the metric and intended use. This approach preserves both central tendencies and potential variability in operating conditions along each corridor.

Additional derived variables were calculated to support safety and performance analysis. Segment length was standardized in miles, and differences between observed operating speeds and posted speed limits were computed for each speed percentile (e.g., 85th and 95th percentile speeds). These "speed delta" measures represent the extent to which observed travel speeds exceed or fall below posted regulatory speeds and serve as a key input for identifying corridors with potential speed-related safety concerns.

The final dataset provides a unified, segment-level representation of travel speeds and volumes across the Pomona roadway network. It includes spatial geometry, aggregated StreetLight performance metrics, zone association attributes, and derived variables suitable for safety screening, corridor prioritization, and systemwide performance evaluation.

StreetLight Methodology

The March 2025 “StreetLight Data Sources and Methodology White Paper” has been attached to the PDF copy of this report. This white paper describes at a high level how the data are collected and joined to the street network. It also includes links to other supporting Streetlight white papers and documentation.

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