TECHNICAL MEMORANDUM

DATE: December 23, 2025
TO: Connie Anderson, T&B Planning, Inc.
FROM: Alex So, Urban Crossroads, Inc.
JOB NO: 16437-01 VMT Truck.docx

SUBJECT: HESPERIA GATEWAY SUPPLEMENTAL VEHICLE MILES TRAVELED (VMT) ANALYSIS

Urban Crossroads, Inc. has completed the following Supplemental Vehicle Miles Traveled (VMT) Analysis for the Hesperia Gateway development (Project The approximately 90.13-acre property to be evaluated in the EIR is located within the City of Hesperia's Hesperia Main Street and Freeway Corridor Specific Plan area, on the west side of Caliente Road between Ranchero Road and Farmington Street on Assessor Parcel Numbers (APNs) 0357-591-58 and 0357-591-59.

PROJECT OVERVIEW

The proposed Project includes the development of a 1,061,780 square foot warehouse building that is proposed to be evaluated assuming High-Cube Fulfillment Warehouse (Sort Facility) use in Phase 1. The future retail development would occur in Phase 2 and although a site plan is not currently available, the following uses have been evaluated for the purposes of this TA: 84-room Hotel, 4,750 square feet of Strip Retail Plaza use, 5,000 square feet of High Turnover (Sit-Down) Restaurant use, 4,750 square feet of Fast Food restaurant without Drive-Through Window use, and a 16-vehicle fueling position gas station use. A site plan for the proposed Project is shown in Attachment A.

SUPPLEMENTAL VMT EVALUATION

In an effort to fully disclose potential VMT impacts, this memorandum includes a supplemental VMT evaluation measuring project generated total VMT and total VMT per Service Population (VMT per SP). For purposes of this analysis, total VMT has been estimated from vehicle trip generation rates (see Attachment B) consistent with the Project's Hesperia Gateway Traffic Analysis (Urban Crossroads, October 2025), and average trip length for each vehicle type. Average trip length information has been obtained from the San Bernardino Traffic Analysis Model (SBTAM) for passenger cars and StreetLight™ Data's Truck Volume Metrics for medium heavy-duty trucks (MDT) (2 and 3 axle trucks) and heavy heavy-duty trucks (HDT) (4+ axle trucks). This supplemental assessment is intended to accompany the Hesperia Gateway VMT Analysis (Urban Crossroads, October 2025), which followed the City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS) (July 2020) (**City Guidelines**) (1) (VMT Guidelines).

ABOUT STREETLIGHT DATA[1]

StreetLight gets its data from anonymous location information collected through smartphones, navigation apps, connected vehicles, and commercial fleets. These signals show where and when devices are moving, but they do not identify individual people. StreetLight processes billions of these data points to figure out travel patterns, such as where trips start and end, the routes people take, and whether the travel is by car, truck, bike, or walking. To make sure the information is accurate, StreetLight compares its results to real traffic counts from sensors and state transportation records, then adjusts the data to match actual conditions. In simple terms, StreetLight turns anonymous signals from phones and vehicles into a clear picture of how people and goods move around, which planners can then use to understand traffic and transportation impacts.

Building on this general framework, StreetLight applies more detailed technical methods to estimate truck activity and validate its results. StreetLight Data's truck volume metrics are based on five linked machine learning models that estimate vehicle volume and trip length by vehicle class and total vehicles. StreetLight provides truck volume information from 2019 through 2025. To support volume estimates across different time periods, StreetLight applies the Monthly Average Daily Trip (MADT) to the days or parts of the day required for a particular analysis. In the scaling process, StreetLight factors the ratio between sample trip counts for particular hours and days and the trip counts for the entire month with the volume for corresponding hours, day type, and MADT for that zone.

The estimated truck volume is compared to the actual volume reported by permanent traffic counters to validate the model results. The permanent counter data comes from the Federal Highway Administration (FHWA) Travel Monitoring Analysis System (TMAS) vehicle classification dataset, which includes traffic counts from more than 3,000 unique sites collected between September 2021 and September 2022. The StreetLight model produces Pearson correlation coefficients of 0.99, 0.92, and 0.97 for light, medium, and heavy-duty vehicles, respectively, when comparing estimated and actual MADT. These results indicate that the StreetLight model is highly robust.

Survey Area

To ensure that the survey results reflect the operational characteristics of large-scale warehouse uses comparable to those proposed by the Project, it was necessary to identify facilities of similar size and function.

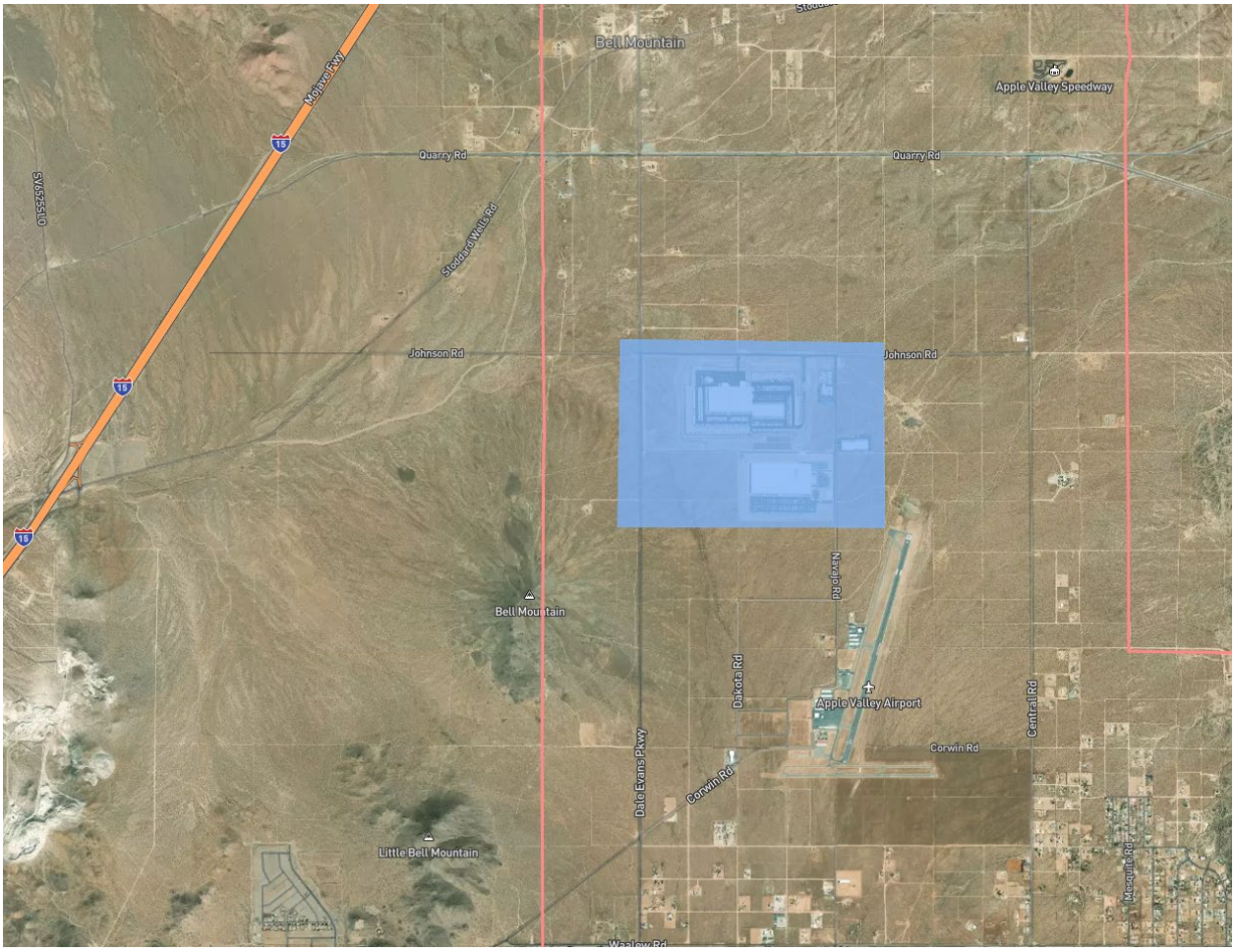
The primary survey area is the Hesperia Commerce Center (previously referenced as "Hesperia Commerce Center I") along Caliente Road, which was used to characterize Heavy Heavy-Duty Truck (HDT) operations based on the most recent consecutive 12-month StreetLight truck dataset available at the time of analysis. To supplement these conditions, the Apple Valley Walmart and former Big Lots distribution campuses were used solely to characterize Medium Heavy-Duty Truck (MDT) activity and employee travel patterns. Although Big Lots ceased operations near the end of 2024, the 2021–2022 survey period captured the facility during full operation, providing valid MDT and workforce inputs.

[1] StreetLight Insight Truck Volume Methodology and Validation (April 2025).

This two-site approach prioritizes data recency for HDT (Hesperia) while retaining representative MDT and employee characteristics (Apple Valley). Together, the datasets provide the best available information to estimate project trip generation and VMT, aligning facility scale and function with observed regional logistics behavior. Exhibits 1 and 2 show the surveyed locations.

EXHIBIT 1: HESPERIA COMMERCE CENTER SURVEY LOCATION

EXHIBIT 2: APPLE VALLEY WALMART AND FORMER BIG LOTS SURVEY LOCATION



TRUCK TRIP LENGTH

Utilizing the above parameters, average daily zone traffic[2] of MDT vs. HDT, average trip length by vehicle class, and distance bins[3] of per-trip length in miles were obtained from StreetLight Data. Results from the StreetLight™ Data is summarized in Table 1 (see Attachment B for StreetLight data output).

TABLE 1: AVERAGE TRIP LENGTH BY VEHICLE TYPE

	MDT Avg Trip Length[1]	HDT Avg Trip Length[2]
Survey Area	47.2 mi	161.5 mi

[1]MDT data is based on StreetLight Truck Volume and Truck Trips 2021, Apple Valley (Walmart and former Big Lots).
[2]HDT data is based on StreetLight Index and Truck Trips 2025, Hesperia (Hesperia Commerce Center).

[2] Average daily zone traffic was then used to calculate % of total aggregated trucks for each disaggregate.
[3] Distance bins were defaulted to: 0-1, 1-2, 2-5, 5-10, 10-20, 20-30, 30-40, 40-50, 50-60, 60-70, 70-80, 80-90, 90-100, and 100+ in miles.

As shown in Table 1, traffic monitoring data collected over the most recent 12-month period for each truck type, as provided by StreetLight Data, estimates an average trip length of 47.2 miles for MDT and 161.5 miles for HDT.

PROJECT VMT ESTIMATES

Table 2 presents an estimation of total VMT for the Project, which utilizes vehicle trip generation rates consistent with the Project's traffic study multiplied by the average trip length for each vehicle type.

TABLE 2: PROJECT TOTAL VMT

Project	Vehicle Trips	Trip Length	VMT
Automobile	8,636	13.9 mi[1]	120,040
MDT	104	47.2 mi	4,909
HDT	174	161.5 mi	28,101
Total	**8,914**	-	**153,050**

[1] Automobile trip lengths are consistent with data obtained from the SBTAM travel demand model.

Table 3 presents the calculation of the efficiency metric total VMT per SP, which is the product of total VMT generated by the Project divided by its SP (employment). Table 3 identifies a comparison between the Project's total VMT per SP to the City's adopted impact threshold. As specified in the City of Hesperia's VMT Guidelines **if the baseline project generated VMT per SP exceeds the baseline County of San Berardino VMT per SP, it would result in a significant impact.** As calculated from SBTAM the Countywide baseline average VMT per SP is 39.0[4].

TABLE 3: VMT PER SP

	Project
SP	1,077
Total VMT	153,050
VMT per SP	142.1
Threshold	35.7
VMT Exceeds Threshold	Yes

As presented in Table 4, using the VMT calculation methodology previously described, the Project is forecast to generate total VMT per SP of 142.1, which would exceed the City's VMT impact threshold and result in a significant VMT impact.

If you have any questions, please contact me directly at aso@urbanxroads.com.

[4] As calculated from SBTAM.

REFERENCES

1. **City of Hesperia.** *Traffic Impact Analysis Guidelines for Vehiclemiles Traveled and Level of Sevice Assessment.* July 2020.

ATTACHMENT A:
PROJECT SITE PLAN

ATTACHMENT B:
PROJECT TRIP GENERATION

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Actual Vehicles:									
High-Cube Fulfillment (Sort)	1,061.780	TSF							
Passenger Cars:			356	80	436	257	359	616	4,852
2-axle Trucks:			1	1	2	2	1	3	46
3-axle Trucks:			1	1	2	2	2	4	58
4+-axle Trucks:			3	3	6	6	7	13	174
Total Truck Trips (Actual Vehicles):			5	5	10	10	10	20	278
Industrial Total Trips (Actual Vehicles)[2]			361	85	446	267	369	636	5,130
Hotel	84	Rooms	11	18	29	14	12	26	338
Internal Capture Reduction			*0*	*-2*	*-2*	*-11*	*-8*	*-19*	*-248*
Strip Retail Plaza (<40,000 SF)	4.750	TSF	10	8	18	15	15	30	260
Internal Capture Reduction			*-1*	*-1*	*-2*	*-8*	*-5*	*-13*	*-114*
Pass-by Trip Reduction (40% - PM/Daily)			*0*	*0*	*0*	*-3*	*-3*	*-6*	*-58*
High Turnover (Sit-Down) Restaurant	5.000	TSF	25	20	45	28	18	46	520
Internal Capture Reduction			*-1*	*0*	*-1*	*-2*	*-4*	*-6*	*-68*
Pass-by Reduction (43% - PM/Daily)			*0*	*0*	*0*	*-6*	*-6*	*-12*	*-194*
Fast-Food w/out Drive-Through Window	4.750	TSF	85	103	188	84	91	175	1,964
Internal Capture Reduction			*-2*	*-1*	*-3*	*-10*	*-14*	*-24*	*-270*
Pass-by Reduction (50% - AM; 55% - PM/Daily)			*-51*	*-51*	*-102*	*-42*	*-42*	*-84*	*-932*
Fast-Food w/ Drive-Through Window	3.200	TSF	54	52	106	53	49	102	1,434
Internal Capture Reduction			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Pass-by Reduction (50% - AM; 55% - PM/Daily)			*-26*	*-26*	*-52*	*-27*	*-27*	*-54*	*-790*
Passenger Cars			460	200	660	342	435	777	6,694
Trucks			5	5	10	10	10	20	278
Total Trips (Actual Vehicles)[2]			**465**	**205**	**670**	**352**	**445**	**797**	**6,972**

[1] TSF = thousand square feet

[2] Total Trips = Passenger Cars + Truck Trips.

ATTACHMENT C
STREETLIGHT DATA OUTPUT

TABLE C-1: HESPERIA (HESPERIA COMMERCE CENTER)

Intersection Type	Zone ID	Zone Name	Zone Is Pass-Through	Zone Direction (degrees)	Zone is Bi-Direction	Day Type	Day Part	Average Daily Zone Traffic (StL Volume)	Avg Travel Time (sec)	Avg All Travel Time (sec)	Avg Trip Length (mi)
Trip Pass-Through	1	Hesperia Gateway	yes	N/A	no	1: Weekday (M-Th)	0: All Day (12am-12am)	8046	13051	13053	161.5

TABLE C-2: APPLE VALLEY (WALMART AND FORMER BIG LOTS)

Intersection Type	Zone ID	Zone Name	Zone Is Pass-Through	Zone Direction (degrees)	Zone is Bi-Direction	Day Type	Day Part	Average Daily Zone Traffic (StL Volume)	Avg Travel Time (sec)	Avg All Travel Time (sec)	Avg Trip Length (mi)
Trip Pass-Through	1	Apple Valley	yes	N/A	no	1: Weekday (M-Th)	0: All Day (12am-12am)	375	3641	3846	47.2