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January 12, 2023

Green Trucking Solutions, LLC
Attn: Ilnaz Patric
14816 Valley Blvd.
Fontana, California 92335

Subject: GTS Cold Storage Project Trip Generation and Vehicle Miles Traveled Memorandum (LSA Project No. GTS2201)

Dear Ilnaz:

LSA Associates, Inc. (LSA) has prepared this Trip Generation and Vehicle Miles Traveled (VMT) Memorandum (Memo) for the proposed GTS Cold Storage Project (project) in the Town of Apple Valley (Town). The project will include a High-Cube Cold Storage Warehouse of a total area of 385,067 square feet (sf). The project will be located at the north-west corner of Navajo Road and Lafayette Street. Access to the project will be provided via two driveways on Navajo Road and two driveways on Lafayette Street. Figure 1 illustrates the regional and project location (All figures and tables attached). Figure 2 illustrates a conceptual site plan for the project.

The project is within the North Apple Valley Industrial Specific Plan Area (NAVISP) and is zoned as I-SP or Specific Plan Industrial, allowing for a broad range of clean manufacturing and warehousing uses, including manufacturing facilities with showrooms and offices, regional warehouse facilities, and support services for manufacturing and warehouses. As such, the proposed project is consistent with the specific plan land use designation, and therefore, consistent with the City's General Plan land use designation.

TRIP GENERATION ANALYSIS

Trip generations for the project was developed using rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition) for Land Use 157 – “High-Cube Cold Storage Warehouse”. Project trips were converted to trucks and passenger vehicles based on the South Coast Air Quality Management District (SCAQMD) recommendations for warehousing projects. As such, 31 percent of project traffic will be trucks. Based on Vehicle Mix from the SCAQMD, the truck mix was considered as 6.8% 2-axle trucks, 5.5% 3-axle trucks, and 18.7% 4 or more axle trucks. All truck trips were converted to Passenger Vehicle equivalents (PCEs) using a 1.5 PCE factor for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for 4 or more axle trucks.

Table A summarizes the project trip generation and shows that the proposed project is anticipated to generate 62 PCE trips in the a.m. peak hour, 70 PCE trips in the p.m. peak hour, and 1,196 daily PCE trips.

It is our understanding that the Town does not have their own LOS traffic study guidelines but recommends following the requirements established within the *San Bernardino County*

Transportation Impact Study Guidelines (County's TIS Guidelines), dated July 2019. As per the County's TIS Guidelines, a LOS study shall not be required for a project if it generates less than 100 peak hour trips. Since the anticipated number of peak hour trips generated by the proposed project is lower than the 100-trip threshold established by the County's TIS Guidelines, a detailed LOS study may not be required for this project.

VEHICLE MILES TRAVELED ANALYSIS

On December 28, 2018, the California Office of Administrative Law cleared the revised California Environmental Quality Act (CEQA) guidelines for use. Among the changes to the guidelines was removal of vehicle delay and level of service from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated using the metric of VMT.

The Town adopted its Resolution No. 2021-08 on May 11, 2021. The resolution contains the VMT analysis methodologies for non-screened development. Additionally, the Town recommended using the screening criterion from the County's TIS Guideline to determine whether a project could be screened out from a detailed VMT analysis.

Project Screening Determination

The County's TIS Guidelines provides multiple screening criteria for land use projects. The project was compared with the screening criteria established in Section 4.1, Analysis Methodology, of the TIS Guidelines to check if the project can be screened out. Following is a brief description about the project in relation with the project screening criteria:

- **Local Serving Projects:** The County's TIS Guidelines includes a list of local-serving land uses including K-12 schools, local serving retail (less than 50,000 s.f.), local serving gas stations, daycare centers, banks, among others that are presumed to have less than significant VMT impact. Based on the project land use, it does not satisfy this screening criteria.
- **Small Project/Low Trip Generator:** The County's TIS Guidelines identifies that projects that are estimated to generate up to 110 daily trips, including 63,000 sq. ft. of warehousing and 79,000 sq. ft of high cube transload and short-term storage warehouse is estimated to have minimal effect on regional VMT and could be screened out. Based on the project area and daily trip generation estimated in Table A, the project does not satisfy this screening criteria.
- **Transit Priority Area (TPA) Screening:** The project is not located within a TPA. Therefore, this screening criteria does not apply to the project.
- **Low VMT Area Screening:** The TIA Guidelines recommends examining the project location within the San Bernardino County Transportation Authority (SBCTA) VMT Screening Tool. Based on information obtained from the SBCTA VMT screening tool, the project is not located within a low VMT area. Therefore, this screening criteria does not apply to the project.

As such, the project could not be screened out of VMT analysis. Therefore, a detailed VMT analysis was conducted to assess the project's VMT impact.

Detailed VMT Analysis Methodology

The detailed VMT analysis was conducted using the San Bernardino Traffic Analysis Model (SBTAM). Additionally, as recommended in the Town's VMT resolution, VMT per service population (population + employment) metric was used for this analysis. As included in the Town's VMT resolution, project generated VMT impact needs to be evaluated by comparing both baseline and cumulative project generated VMT per service population with the Town's General Plan Buildout VMT per service population. The Town's General Plan Buildout scenario VMT per service population data was obtained from the SBCTA VMT screening tool.

Project's effect on VMT needs to be determined by comparing the citywide VMT per service population for baseline and cumulative plus project scenario with corresponding no project scenario metric. The following is a detailed description of the VMT analysis:

Project Traffic Analysis Zone Update

The first step in preparation of this analysis was to update the traffic analysis zone (TAZ) in the model that includes the project area. Since, SBTAM does not allow addition of new TAZs, non-project related land use for the project location TAZ was moved to an adjacent TAZ and the project land use was added in this TAZ. The project TAZ was utilized to calculate project specific VMT per service population. Project land uses were converted into model socioeconomic data using appropriate regional factors.

A similar approach was used for cumulative year. It should be noted that the project land use was included in the model as an additional land use and no shifting of land use/socioeconomic data from the parent TAZ was applied. Therefore, the cumulative VMT analysis can be considered as a conservative estimate.

Model Runs and Project VMT Estimation

Model runs were conducted for this updated with project model scenarios after incorporating the project land use as described above. Project VMT was estimated from SBTAM model runs using origin-destination trip matrices and by multiplying them with the final assignment skim matrices. The extracted project VMT was divided by the estimated project service population to develop the project VMT per service population for both scenarios.

VMT Analysis

Project VMT Impact

Table A summarizes the Town's significant threshold and project VMT per service population for the base year. As shown in Table A, the project's VMT per service population is 5.7 percent lower than the Town's threshold. Therefore, based on the Town's VMT resolution, the project will not have a significant VMT impact for the base year.

Detailed VMT calculation for the project is included in Appendix A.

Table A: Threshold and Base Year Project VMT per Service Population

Town Threshold*	Project	Difference	Percentage Difference	Significant Impact
33.2	31.3	(1.9)	(5.7%)	No

* Estimated using "No project" SBTAM Future year (2040) model runs

Table B summarizes the significant threshold and the project VMT per service population for the cumulative year. As shown in Table B, the project's cumulative year VMT per service population is 0.2 percent lower than the Town's threshold. Therefore, as stated in the Town's VMT resolution, the project will not have a significant VMT impact for the cumulative year.

Detailed VMT calculation for the project is included in Appendix A.

Table B: Threshold and Cumulative Year Project VMT per Service Population

Town Threshold*	Project	Difference	Percentage Difference	Cumulative Impact
33.2	33.1	(0.1)	(0.2%)	No

* Source - Estimated using "No project" SBTAM Future year (2040) model runs

Project's Effect on VMT

Table C summarizes the base year no project and with project townwide roadway VMT per service population. As shown in Table C, the with project townwide roadway VMT per service population remains unchanged compared to the no project metric. As such, the project's effect on VMT for the base year is less than significant.

Detailed VMT calculation for the project is included in Appendix A.

Table C: Base Year (2016) Townwide Roadway VMT per Service Population

	No Project	With Project	Difference	Percentage difference
Town of Apple Valley *	9.3	9.3	0.0	0.0%

* Source - Estimated using SBTAM model

Table D summarizes the corresponding values for cumulative year. As shown in Table D, the with project townwide roadway VMT per service population remains unchanged compared to the no project metric. As such, the project's effect on VMT for the cumulative year is less than significant.

Table D: Cumulative Year (2040) Townwide Roadway VMT per Service Population

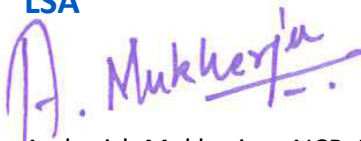
2040	No Project	With Project	Difference	Percentage difference
Town of Apple Valley *	10.7	10.7	0.0	0.0%

**Source - Estimated using SBTAM model*

If you have any questions, please do not hesitate to contact me at (951) 781-9310 or Ambarish.Mukherjee@lsa.net.

Sincerely,

LSA



Ambarish Mukherjee, AICP, PE
Principal

Attachments:

Figure 1: Regional and Project Location

Figure 2: Conceptual Site Plan

Table A: Project Trip Generation

Appendix A: Project VMT Calculation

FIGURES

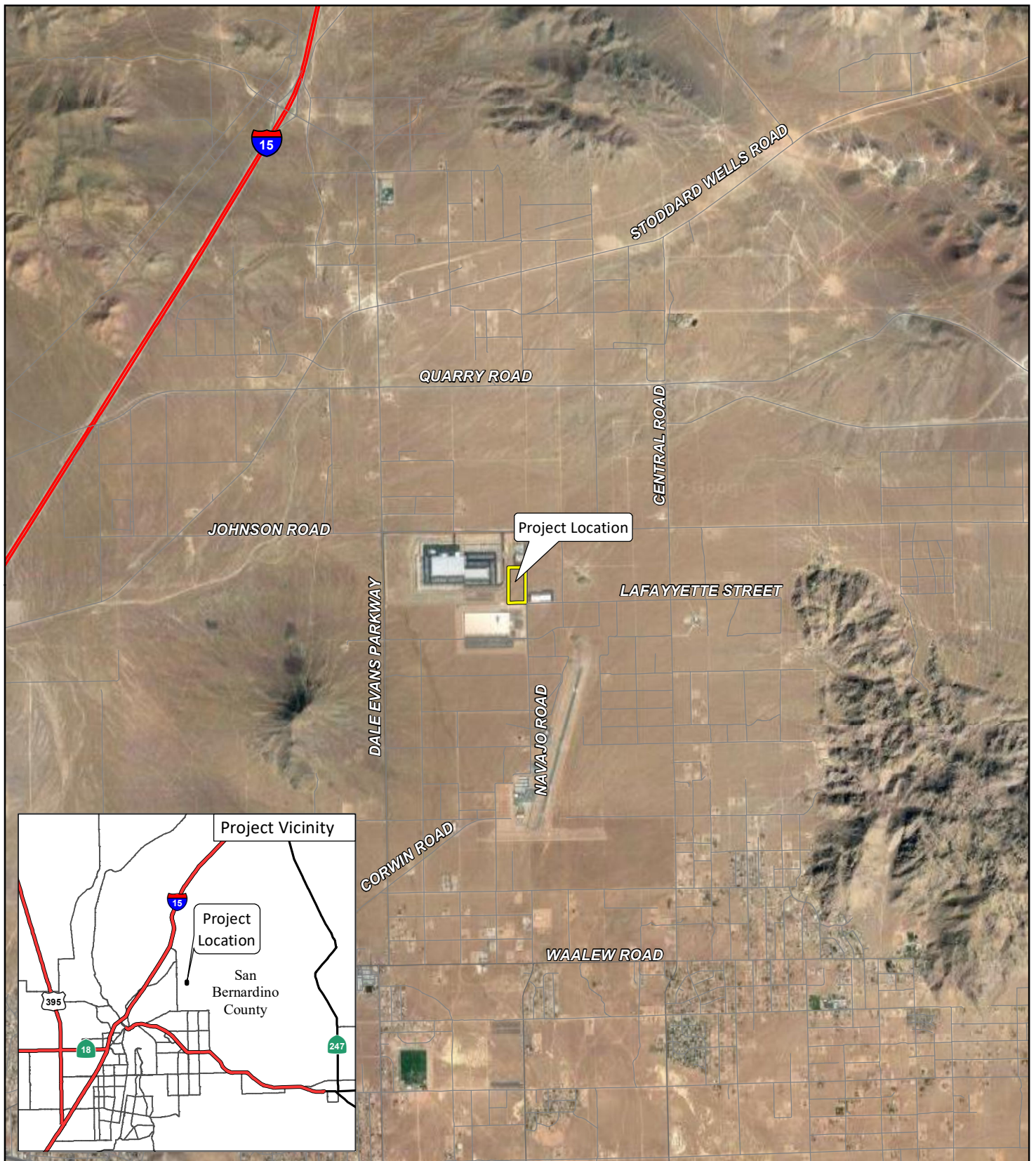
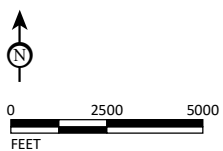


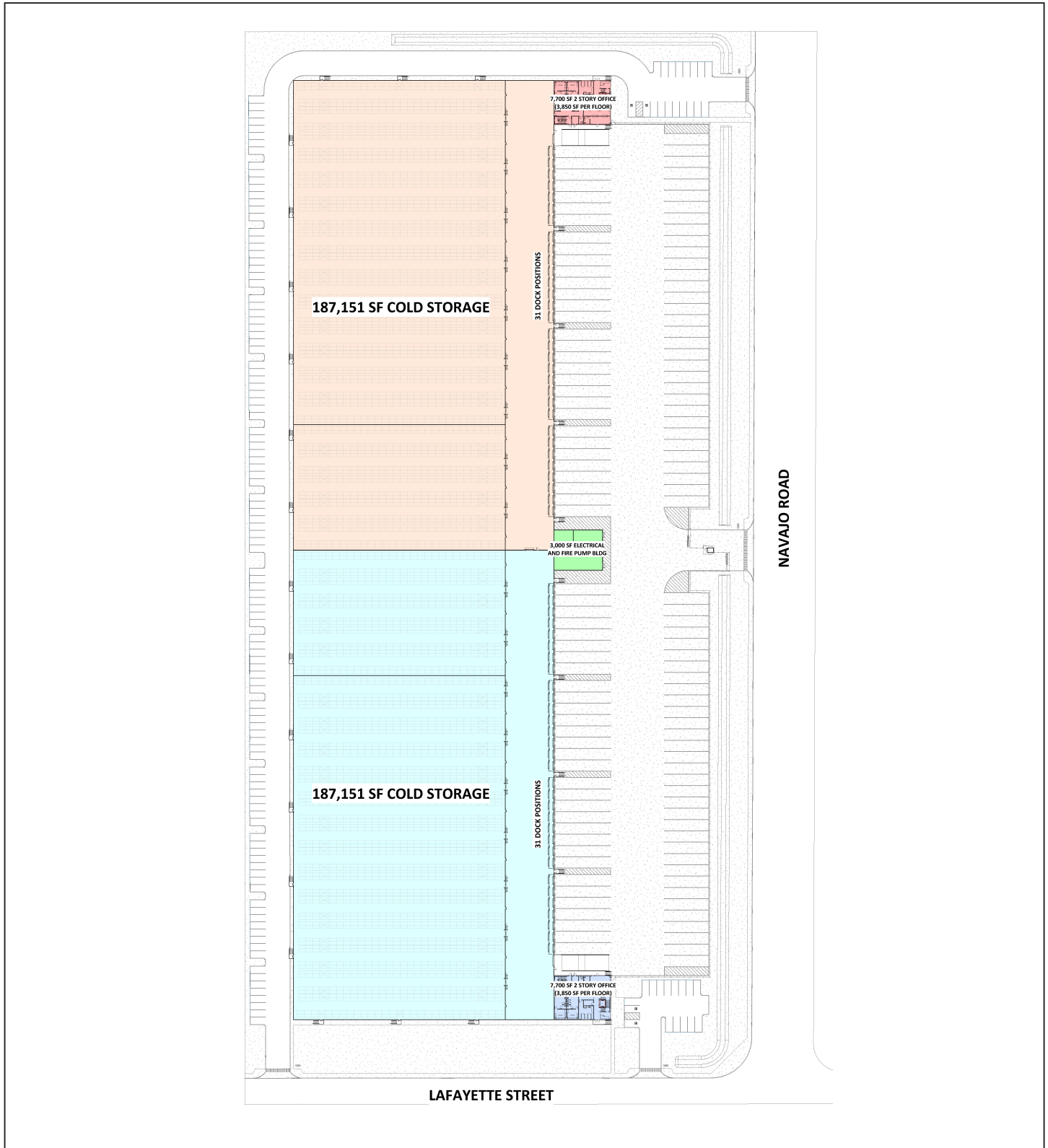
FIGURE 1



SOURCE: ESRI Streetmap, 2021; Google Earth, 2018.

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Cold Storage Project
Trip Generation Memorandum
 Regional and Project Location



LSA

FIGURE 2



Cold Storage Project
 Trip Generation Memorandum
 Conceptual Site Plan

TABLES

Table A - Project Trip Generation

Land Uses	Units	A.M. Peak Hour			P.M. Peak Hour			Daily
		In	Out	Total	In	Out	Total	
High-Cube Cold Storage Warehouse¹	385.067 TSF							
Trips/Unit (Cars)		0.072	0.004	0.076	0.030	0.053	0.083	1.463
Trips/Unit (2-Axle Trucks)		0.004	0.004	0.007	0.004	0.004	0.008	0.144
Trips/Unit (3-Axle Trucks)		0.003	0.003	0.006	0.003	0.004	0.007	0.117
Trips/Unit (4+ Axle Trucks)		0.010	0.010	0.021	0.010	0.012	0.022	0.396
Trips/Unit (Total)		0.089	0.021	0.110	0.047	0.073	0.120	2.120
Trip Generation (Cars)		28	1	29	11	21	32	563
Trip Generation (2-Axle Trucks)		1	2	3	1	2	3	56
Trip Generation (3-Axle Trucks)		1	1	2	1	2	3	45
Trip Generation (4+ Axle Trucks)		4	4	8	4	5	9	153
Trip Generation (Total)		34	8	42	17	30	47	817
Trip Generation (Cars)		28	1	29	11	21	32	563
PCE Trip Generation (2-Axle Trucks)		2	3	5	2	3	5	84
PCE Trip Generation (3-Axle Trucks)		2	2	4	2	4	6	90
PCE Trip Generation (4+ Axle Trucks)		12	12	24	12	15	27	459
PCE Trip Generation (Total)		44	18	62	27	43	70	1,196

Notes:

TSF = thousand square-feet

¹ Rates from ITE Trip Generation Manual (11th Edition) for Land Use 157 – "High-Cube Cold Storage Warehouse", Setting/Location - "General Urban/Suburban." The resulting trips were converted to trucks and passenger vehicles based on SCAQMD recommendations for warehousing projects. As such, 31 percent of project traffic will be trucks. Based on Vehicle Mix from the SCAQMD, the truck mix was considered as 6.8% 2-axle trucks, 5.5% 3-axle trucks, and 18.7% 4 or more axle trucks. Since peak hour inbound and outbound splits are not available for Land Use 157, inbound and outbound splits for total vehicles (passenger vehicles + trucks) and trucks for Land Use 155 - "High Cube Fulfillment Center Warehouse" have been used to determine the inbound and outbound split in the peak hours. Inbound and outbound splits for passenger vehicles have been developed by subtracting all truck inbound and outbound rates from the total vehicles inbound and outbound rates, respectively. All truck trips were converted to passenger Passenger Vehicle equivalents (PCEs) using a 1.5 PCE factor for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for 4 or more axle trucks.

Appendix A
VMT Calculation Worksheet - GTS Cold Storage
Project VMT

2016	GTS Cold Storage (Project)	Town of Apple Valley General Plan Buildout (Threshold) *
Population	0	
Employment	296	
Service Population	296	
OD VMT	9,265	
OD VMT per service population	31.3	33.2

2040	GTS Cold Storage (Project)	Town of Apple Valley General Plan Buildout (Threshold) *
Population	0	
Employment	296	
Service Population	296	
OD VMT	9,804	
OD VMT per service population	33.1	33.2

** Threshold value obtained from SBCTA VMT Screening Tool :<https://www.gosbcta.com/vmtscreening>*

Appendix A
VMT Calculation Worksheet - GTS Cold Storage
Project's Effect on VMT

2016	With Project	Without Project
Roadway VMT	850,508	847,801
Service population	91,409	91,113
VMT per service population	9.3	9.3

2040	With Project	Without Project
Roadway VMT	1,363,549	1,360,738
Service population	127,102	126,806
VMT per service population	10.7	10.7