



Memorandum

Date: May 20, 2020
To: Mr. Tyler Rogers, David J. Powers and Associates, Inc.
From: Brian Jackson
Subject: Supplemental Traffic Analysis for the Mixed-Use Development at 645 Horning Street in San Jose, CA

Hexagon Transportation Consultants, Inc. completed a Transportation Impact Analysis (TIA) for a proposed commercial and light industrial mixed-use project at 645 Horning Street in San Jose, California. The August 2, 2017 TIA evaluated replacing 52,634 square feet (s.f.) of various existing light industrial and commercial uses with a 3,814 s.f. convenience store with 6 fuel pump stations and a 1,341 s.f. car wash, a 2,494 s.f. fast food restaurant with a drive-through, and four mini-storage warehouse buildings totaling 93,443 s.f.

The amount of mini-storage square-footage that is now being proposed totals 151,958 s.f. No changes to the amount of commercial development (i.e., convenience store, fuel station, car wash, and fast food restaurant) are being proposed. Project site access and circulation also would remain unchanged from the previous study. Due to the small increase in the project size, revising the entire TIA to address the change is not necessary. Instead, preparation of this supplemental traffic memo will be adequate to address the small increase in mini-storage square-footage.

Scope of Study

The purpose of this supplemental traffic analysis is to determine whether the change in the amount of mini-storage warehouse development, and associated minor increases in AM and PM peak hour vehicle trips, would affect the results of the original 2017 TIA. This memo includes a trip generation comparison and a figure showing the additional project trips at the study intersections based on the proposed increase in mini-storage square footage. This supplemental traffic analysis also includes an estimate of the increase in the number of PM peak hour project-generated trips that would use the US 101/Oakland Road interchange in order to calculate the increase in the US 101/Oakland/Mabury Transportation Development Policy (TDP) fee due to the added mini-storage trips.

Additionally, the City adopted a new transportation analysis policy in March of 2018. Thus, in addition to providing the revised trip generation estimates and US 101/Oakland TDP fee estimates, this supplemental traffic analysis provides an evaluation of the project in accordance with the City's newly adopted Policy, as described below.

Transportation Policy Change

Historically, traffic impact analysis has focused on the identification of traffic impacts and potential roadway improvements based on delay to relieve traffic congestion that may result due to planned growth. However, with the adoption of the State of California Senate Bill 743 (SB 743), all public agencies will be required by July 2020 to base transportation impacts on vehicle miles traveled (VMT) rather than level of service (LOS). The change in measurement is intended to better evaluate the effects on the state's goals for climate change and multi-modal transportation. Therefore, in adherence with SB 743 legislation and the City's goals as set forth in the Envision San Jose 2040 General Plan, the City of San Jose has adopted a new Transportation Analysis Policy,



Council Policy 5-1. The policy replaces its predecessor (Council Policy 5-3) and establishes the thresholds for transportation impacts under CEQA based on VMT rather than intersection LOS. The intent of this change is to shift the focus of transportation analysis under CEQA from vehicle delay and roadway auto capacity to a reduction in vehicle emissions, and the creation of robust multimodal networks that support integrated land uses. All new projects in the City of San Jose are required to analyze transportation impacts using the VMT metric and conform to Council Policy 5-1.

Project Trip Generation

Based on the trip generation estimates contained in the August 2, 2017 TIA, the originally proposed project would generate 61 new AM peak hour trips (15 inbound and 46 outbound) and 26 new PM peak hour trips (26 inbound and 0 outbound) as shown in Table 1 below.

The revised trip generation estimates (see Table 2) show the currently proposed project would generate 69 new AM peak hour trips (20 inbound and 49 outbound) and 42 new PM peak hour trips (34 inbound and 8 outbound). Thus, the new project would generate 8 additional AM peak hour trips and 16 additional PM peak hour trips compared to the originally proposed project.

Once the additional AM and PM peak hour trips are distributed to the surrounding roadway network, they become scattered, and the increase in trips for individual turning movements at intersections becomes negligible (see Figure 1). Thus, it can be concluded that the proposed increase in mini-storage warehouse square footage would not change the overall results of the August 2, 2017 TIA, and no further traffic operations analysis, including intersection level of service, is warranted.

Table 1
Original Project Trip Generation Estimates

Land Use	Size	Daily Trip Rates	Daily Trips	AM Peak Hour			PM Peak Hour				
				Pk-Hr Rate	Trips		Pk-Hr Rate	Trips			
				In	Out	Total	In	Out	Total		
Existing Use											
General Light Industrial ¹	52.634 ksf	20.00	1,053	1.60	59	25	84	2.20	46	70	116
Proposed Use ²											
Convenience Market with Gas Pumps (and Car Wash) ⁴	12 fuel pos.	542.60	6,511	16.57	100	99	199	19.07	115	114	229
		<i>Pass-By Trips ³</i>	<i>-4,200</i>	<i>63%</i>	<i>(63)</i>	<i>(62)</i>	<i>(125)</i>	<i>66%</i>	<i>(76)</i>	<i>(75)</i>	<i>(151)</i>
		Gas Station Total:	2,311		37	37	74		39	39	78
Fast Food with Drive-Through	2.494 ksf	496.12	1,237	45.42	58	55	113	32.65	42	39	81
		<i>Pass-By Trips ³</i>	<i>-612</i>	<i>49%</i>	<i>(28)</i>	<i>(27)</i>	<i>(55)</i>	<i>50%</i>	<i>(21)</i>	<i>(20)</i>	<i>(41)</i>
		Fast Food Total:	625		30	28	58		21	19	40
Mini-Warehouse	93.443 ksf	2.50	234	0.14	7	6	13	0.26	12	12	24
Total Proposed Trips:			3,170		74	71	145		72	70	142
Net Project Trips (Proposed - Existing):			2,117		15	46	61		26	0	26
Notes:											
¹ Light Industrial trips based on <i>San Jose Traffic Impact Analysis Handbook</i> (November 2009) trip rates for Auto Repair.											
² Proposed use daily and peak hour trip rates based on <i>ITE Trip Generation Manual, 9th Edition</i> (2012).											
Convenience Market with Gasoline Pumps (Land Use 853), average rates per fueling position were used.											
Fast Food with Drive-Through (Land Use 934), average rates per 1,000 SF were used.											
Mini-Warehouse (Land Use 151), average rates per 1,000 SF were used.											
³ Pass-By trips based on ITE rates and applied to Convenience Store with Gas Station and Fast Food with Drive-Through uses as directed by the City of San Jose. Peak hour pass-by percentages applied are shown in the Pk-Hr Rate column.											
⁴ Trips associated with the Car Wash use are included in the Convenience Market with Gas Station trip generation.											

**Table 2
Revised Project Trip Generation Estimates**

Land Use	Size	Daily Trip Rates	Daily Trips	AM Peak Hour			PM Peak Hour				
				Pk-Hr Rate	Trips		Pk-Hr Rate	Trips			
					In	Out		Total	In	Out	Total
Existing Use											
General Light Industrial ¹	52.634 ksf	20.00	1,053	1.60	59	25	84	2.20	46	70	116
Proposed Use ²											
Convenience Market with Gas Pumps (and Car Wash) ⁴	12 fuel pos.	542.60	6,511	16.57	100	99	199	19.07	115	114	229
		<i>Pass-By Trips ³</i>	<i>-4,200</i>	<i>63%</i>	<i>(63)</i>	<i>(62)</i>	<i>(125)</i>	<i>66%</i>	<i>(76)</i>	<i>(75)</i>	<i>(151)</i>
		Gas Station Total:	2,311		37	37	74		39	39	78
Fast Food with Drive-Through	2.494 ksf	496.12	1,237	45.42	58	55	113	32.65	42	39	81
		<i>Pass-By Trips ³</i>	<i>-612</i>	<i>49%</i>	<i>(28)</i>	<i>(27)</i>	<i>(55)</i>	<i>50%</i>	<i>(21)</i>	<i>(20)</i>	<i>(41)</i>
		Fast Food Total:	625		30	28	58		21	19	40
Mini-Warehouse	151.958 ksf	2.50	380	0.14	12	9	21	0.26	20	20	40
Total Proposed Trips:			3,316		79	74	153		80	78	158
Net Project Trips (Proposed - Existing):			2,263		20	49	69		34	8	42
Notes:											
¹ Light Industrial trips based on <i>San Jose Traffic Impact Analysis Handbook</i> (November 2009) trip rates for Auto Repair.											
² Proposed use daily and peak hour trip rates based on <i>ITE Trip Generation Manual, 9th Edition</i> (2012). Convenience Market with Gasoline Pumps (Land Use 853), average rates per fueling position were used. Fast Food with Drive-Through (Land Use 934), average rates per 1,000 SF were used. Mini-Warehouse (Land Use 151), average rates per 1,000 SF were used.											
³ Pass-By trips based on ITE rates and applied to Convenience Store with Gas Station and Fast Food with Drive-Through uses as directed by the City of San Jose. Peak hour pass-by percentages applied are shown in the Pk-Hr Rate column.											
⁴ Trips associated with the Car Wash use are included in the Convenience Market with Gas Station trip generation.											

US 101/Oakland/Mabury Transportation Development Policy

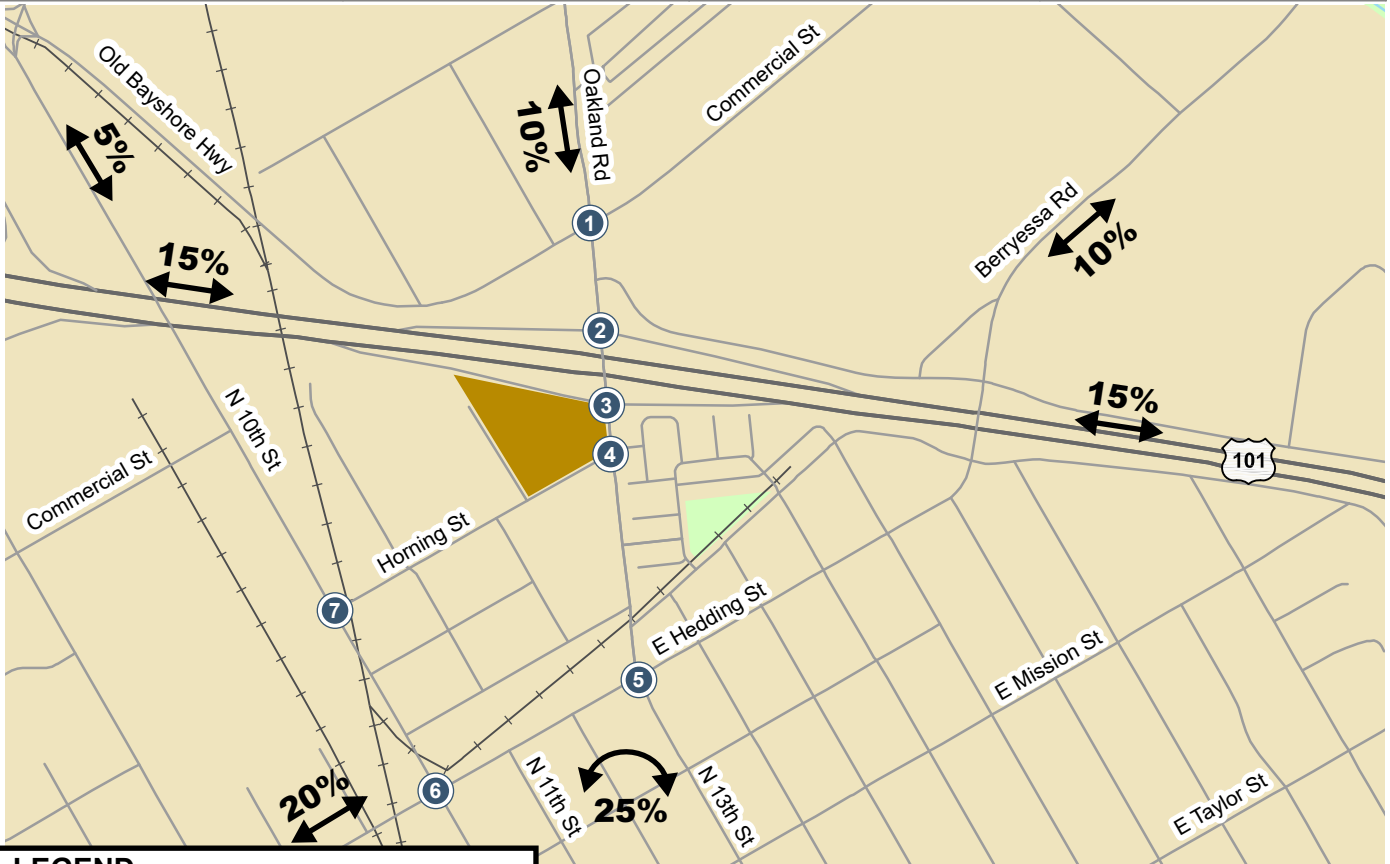
The City of San Jose has identified operational problems along the Oakland Road corridor at the US 101 interchange, which are due primarily to the capacity constraints of the interchange. As a result, the City has identified two key capital improvement projects: 1) modification of the US 101/Oakland Road interchange, including improvements to the Oakland Road/Commercial Street intersection, and 2) construction of a new US 101/Mabury Road interchange. To fund these interchange improvements, the City has developed the US 101/Oakland/Mabury Transportation Development Policy (TDP).

As part of the Policy, a fee to fund the planned interchange improvements has been adopted. Any project that would add traffic to the US 101/Oakland Road interchange is required to participate in the TDP program. The fee for the US 101/Oakland/Mabury TDP is based on the number of PM peak hour vehicular trips that a project would add to the interchange. The current TDP traffic impact fee (as of May 2019) is \$38,623 per each new PM peak hour vehicle trip that would be added to the interchange. Note that the signalized intersections of Oakland Road/US 101 (South), Oakland Road/US 101 (North), and Oakland Road/Commercial Street make up the interchange.

Based on the trip distribution pattern contained in the original TIA for light industrial land uses, the increase in mini-storage square footage would add another 7 PM peak hour vehicle trips to the US 101/Oakland Road interchange (see intersection #3 in Figure 1). This would increase the US 101/Oakland/Mabury TDP fee by \$270,361 (based on the 2019 rate). The original 2017 fee calculation totaled \$958,022 as follows: 26 PM peak hour trips x \$36,847 = \$958,022. Therefore, with the proposed changes the project would be required to pay a total of \$1,228,383 (based on 2019 rates) to help fund the interchange improvements described in the US 101/Oakland/Mabury TDP.

645 Horning Street Supplemental Traffic Analysis

<p>1</p> <p>0(1) ↓</p> <p>1(1) ↶</p> <p>Commercial St</p> <p>Oakland Rd</p> <p>0(1) ↑</p>	<p>2</p> <p>US 101 NB On-Ramp</p> <p>1(2) ↓</p> <p>1(1) ↶</p> <p>Oakland Rd</p> <p>US 101 NB Off-Ramp</p> <p>1(1) ↷</p> <p>0(1) ↑</p>	<p>3</p> <p>US 101 SB Off-Ramp</p> <p>2(3) ↓</p> <p>1(1) ↷</p> <p>Oakland Rd</p> <p>US 101 SB On-Ramp</p> <p>1(2) ↑</p> <p>0(1) ↶</p>	<p>4</p> <p>Horning St</p> <p>3(4) ↶</p> <p>Oakland Rd</p> <p>2(6) ↷</p> <p>1(3) ↑</p>
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LEGEND

- = Site Location
- = Study Intersection
- XX%** = Light Industrial Trip Distribution Pattern
- = AM(PM) Peak-Hour Trips

Figure 1
Added Project Trips at the Study Intersections
Due to the Increase in Mini-Storage Square Footage

VMT Analysis

The City's *Transportation Analysis Handbook 2018* includes screening criteria for projects that are expected to result in less-than-significant VMT impacts based on the project description and location. Projects that meet the screening criteria are exempt from a CEQA-level VMT analysis.

Screening Criteria for CEQA Transportation Analysis

Screening Criteria for Industrial Uses

- 30,000 s.f. of gross floor area or less.

Screening Criteria for Local-Serving Retail Uses

- 100,000 s.f. of total gross floor area or less without drive-through operations.

Light Industrial VMT Analysis Results

The light industrial component of the mixed-use project (i.e., a 151,958 s.f. mini-storage facility) does not meet the City's screening criteria because the amount of light industrial development exceeds 30,000 s.f. The City of San Jose's VMT Evaluation Tool was used to calculate the VMT generated by the mini-storage facility. The daily VMT estimated by the evaluation tool is 13.66 VMT per employee, which is below the existing regional average (industrial threshold) of 14.37 VMT per employee and just below the Area VMT of 13.67 per employee. Therefore, the proposed mini-storage facility would have a less-than significant VMT impact.

The VMT evaluation summary report generated by the City of San Jose's VMT Evaluation Tool for the mini-storage component of the project is included at the end of this memorandum (see Figure 2). The chart shows the Area VMT, Project VMT, and the impact threshold for industrial uses.

Retail VMT Analysis Results

The retail components of the proposed mixed-use project (i.e., a 3,814 s.f. convenience store with fuel station and car wash, and a 2,494 s.f. fast food restaurant with a drive-through) total well under 100,000 s.f. but do not meet the City's screening criteria because the retail uses include drive-throughs. The proposed retail components of the project are small, however, and fit the definition of a local-serving retail use. Local-serving retail projects tend to redistribute existing similar retail trips instead of creating new trips. Furthermore, local-serving retail projects typically shorten vehicle trips and reduce VMT by diverting existing shopping trips from established local retail uses to the new local retail project without measurably increasing trips outside of the local area. Thus, it is presumed that local-serving retail projects, both with and without drive-through operations, will have a less-than significant VMT impact.

Drive-Through Lane Policy (Council Policy 6-10)

Council Policy 6-10 provides design guidelines for establishments with drive-through facilities in the City of San Jose. The Policy sets forth criteria (Traffic Criteria A through G) relating to drive-through location, vehicular ingress and egress, and vehicle stacking. The language below was taken from the August 2, 2017 TIA and the October 30, 2017 traffic memo prepared by City staff for the TIA.

Drive-Through Lane Policy for Fast Food Restaurants

According to Council Policy 6-10, primary ingress and egress to drive-through type parking lots should be from at least a four-lane major street (Traffic Criterion A). Since access to and from the site would be provided via Horning Street, a two-lane minor street, the project would not meet this requirement. Note that the project frontage on four-lane Oakland Road is between the US 101 southbound off-ramp to Oakland Road and Horning Street. Since Caltrans has vehicular access

restrictions along project frontages adjacent to any Caltrans right-of-way, providing primary ingress and egress to the fast food restaurant drive-through lane from a four-lane major street is not possible.

The Policy also requires a fast food restaurant to provide stacking space for at least 8 vehicles within the drive-through lane, assuming 20 feet per vehicle (Traffic Criterion E). The site plan shows the drive-through lane would provide approximately 160 feet of storage, or enough stacking space for 8 vehicles. This drive-through lane capacity would meet the City's minimum requirement. A queue of more than 8 vehicles would spill into the main fast food parking area. There is an additional 160 feet of available stacking space within the fast food parking area (east-west drive aisle) between the drive-through entrance and the primary north-south drive aisle that serves the site, should overflow space be required. Policy 6-10 (Traffic Criterion B) requires overflow stacking capacity to equal 50 percent of the required drive-through stacking space, with overflow restricted to the parking lot. The project would meet this requirement, as well as Traffic Criteria C and D, which are Policy requirements related to drive-through lane ingress and egress.

Drive-Through Lane Policy for Self-Service Car Wash

As previously noted, Council Policy 6-10 states that primary ingress and egress to drive-through type parking lots should be from at least a four-lane major street (Traffic Criterion A). Since access to and from the site would be provided via Horning Street, a two-lane minor street, the project would not meet this requirement. Note that the project frontage on four-lane Oakland Road is between the US 101 southbound off-ramp to Oakland Road and Horning Street. Since Caltrans has vehicular access restrictions along project frontages adjacent to any Caltrans right-of-way, providing primary ingress and egress to the car wash drive-through lane from a four-lane major street is not possible.

The Policy requires a self-service car wash to provide stacking space for at least 5 vehicles within the drive-through lane, assuming 20 feet per vehicle (Traffic Criterion E). The site plan shows an approximately 160-foot car wash drive-through lane with a counterclockwise circulation pattern. This would provide enough stacking space for 8 vehicles, which would exceed the City requirement for self-service car wash drive-through lane capacity. Accordingly, the project would meet Traffic Criterion B (50% overflow stacking capacity) within the drive-through lane itself. The project would also meet the requirements described in Traffic Criteria C and D, which are Policy requirements related to drive-through lane ingress and egress.

Conclusions

- The proposed increase in mini-storage square footage, and associated increase in peak hour trips, would not change the overall results of the August 2, 2017 TIA, and no further traffic operations analysis, including intersection level of service, is warranted.
- The increase in mini-storage square footage would add another 7 PM peak hour vehicle trips to the US 101/Oakland Road interchange, which would increase the US 101/Oakland/Mabury TDP fee by \$270,361. The original 2017 fee calculation totaled \$958,022 (26 PM peak hour trips x \$36,847 = \$958,022). Therefore, with the proposed changes the project would be required to pay a total of \$1,228,383 (based on 2019 TDP rates) to help fund the interchange improvements described in the US 101/Oakland/Mabury TDP.
- The local-serving retail components of the mixed-use project would have a less-than significant VMT impact.
- The mixed-use project would comply with the requirements of the City of San Jose's Drive-Through Lane Policy.
- The light industrial (mini-storage) component of the mixed-use project would have a less-than significant VMT impact.

**Figure 2
San Jose VMT Evaluation Tool Summary Report**

CITY OF SAN JOSE VEHICLE MILES TRAVELED EVALUATION TOOL SUMMARY REPORT			
PROJECT:			
Name:	645 Horning Street Mixed-Use Project	Tool Version:	2/29/2019
Location:	645 Horning Street, San Jose, CA	Date:	2/26/2020
Parcel:	23518001	Parcel Type:	Urban Low Transit
Proposed Parking Spaces	Vehicles: 10	Bicycles:	0
LAND USE:			
Residential:		Percent of All Residential Units	
Single Family	0 DU	Extremely Low Income (≤ 30% MFI)	0 % Affordable
Multi Family	0 DU	Very Low Income (> 30% MFI, ≤ 50% MFI)	0 % Affordable
Subtotal	0 DU	Low Income (> 50% MFI, ≤ 80% MFI)	0 % Affordable
Office:	0 KSF		
Retail:	7.649 KSF		
Industrial:	152 KSF		
VMT REDUCTION STRATEGIES			
Tier 1 - Project Characteristics			
Increase Residential Density			
Existing Density (DU/Residential Acres in half-mile buffer)			7
With Project Density (DU/Residential Acres in half-mile buffer)			7
Increase Development Diversity			
Existing Activity Mix Index			0.84
With Project Activity Mix Index			0.85
Integrate Affordable and Below Market Rate			
Extremely Low Income BMR units			0 %
Very Low Income BMR units			0 %
Low Income BMR units			0 %
Increase Employment Density			
Existing Density (Jobs/Commercial Acres in half-mile buffer)			21
With Project Density (Jobs/Commercial Acres in half-mile buffer)			21
Tier 2 - Multimodal Infrastructure			
Tier 3 - Parking			
Tier 4 - TDM Programs			

Figure 2 (Continued)
San Jose VMT Evaluation Tool Summary Report

