June 8, 2023

Ms. Pam Steele
MIG INC.
1650 Spruce Street, Suite 106
Riverside, California 92507

RE: Brew Harley Knox Industrial Project Transportation Study Screening Assessment
Project No. 19619

Dear Ms. Steele:

Ganddini Group, Inc. is pleased to provide this transportation study screening analysis for the proposed Brew Harley Knox Industrial Project in the City of Perris. We trust the findings of this analysis will aid the City of Perris in assessing whether preparation of a transportation study will be required for the proposed project.

PROJECT DESCRIPTION

The 4.01-acre project site (APN 302-090-021) is located on the south side of Harley Knox Boulevard between Indian Avenue and Perris Boulevard within the Perris Valley Commerce Center Specific Plan (PVCC SP). in the City of Perris, California. The project site is currently undeveloped and zoned Commercial (C). The proposed project also involves a Specific Plan Amendment to redesignate the project site zoning from Commercial (C) to Light Industrial (LI). The project location map is shown on Figure 1.

The proposed project (DPR 22-00036) involves construction of a 59,974 square foot industrial warehouse building. Based on the existing raised median along Harley Knox Boulevard, the two vehicular access driveways proposed at Harley Knox Boulevard are assumed to provide right in/right out only access, including one passenger car only access driveway and one truck only access driveway. The proposed site plan is illustrated on Figure 2. Figure 2 also exhibits truck turning templates in/out of the truck only access.

TRIP GENERATION

Proposed Trip Generation

Table 1 shows the project trip generation forecast based on rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition, 2021). Based on review of the ITE land use description, trip generation rates for ITE Land Use Code 150 (Warehousing) were determined to adequately represent the land use for the proposed project and were selected for calculation of the project trip generation forecast. The number of trips generated is determined by multiplying the trip generation rates and directional distributions by the land use quantity.

As shown in Table 1, the proposed project is forecast to generate approximately 103 daily vehicle trips, including 10 vehicle trips during the AM peak hour and 10 vehicle trips during the PM peak hour.

Truck Trips

The project trip generation was also calculated in terms of Passenger Car Equivalent (PCE) trips. The percentage of truck trips was obtained from the ITE *Trip Generation Manual* (11th Edition, 2021). The truck mix by axle type was determined based on South Coast Air Quality Management District (SCAQMD) recommendations for warehousing facilities without cold-storage. Truck trips were converted to PCE trips based on the following factors: 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for trucks with four or more axles.

As also shown in Table 1, the proposed project is forecast to generate approximately 159 daily PCE trips, including 12 PCE trips during the AM peak hour and 12 PCE trips during the PM peak hour.

Zoning Amendment Trip Comparison

The project site is currently zoned Commercial (C) with a floor to area ratio (FAR) of 0.75 per Table 4-0.1 of the PVCC SP. Under the current land use and zoning designation, the buildout potential for the current commercial zoning at the site could be developed with up to 115,907 square feet (Site Area x FAR). Table 2 shows the potential commercial buildout trips are based on ITE trip generation rates for Land Use Code 821 (Shopping Plaza 40-150 TSF). As shown in Table 2, the potential commercial development is forecast to generate approximately 7,826 daily trips, including 201 trips during the AM peak hour and 602 trips during the PM peak hour.

Table 2 shows the difference in vehicle and passenger car equivalent trips between the currently zoned and proposed land uses. As shown in Table 2 the proposed project is forecast to result in a net decrease of approximately 7,667 fewer daily PCE trips compared to the currently zoned commercial buildout potential, including 189 fewer PCE trips during the AM peak hour and 590 fewer PCE trips during the PM peak hour.

TRIP DISTRIBUTION AND ASSIGNMENT

The project proposes two vehicular access driveways on Harley Knox Boulevard. Because of the median on Harley Know Boulevard, both driveways will provide right in/right out only access with one passenger car only access driveway and one truck only access driveway.

Figure 3 to Figure 6 show the forecast directional distribution patterns for the project generated trips for both automobiles and trucks. The project trip distribution patterns are based on review of existing volume data, surrounding land uses, City of Perris truck routes, and the local and regional roadway facilities in the project vicinity.

Figure 7 shows the project-generated AM and PM peak hour intersection turning movement volumes at the proposed project driveways based on the trip generation shown in Table 1 and trip distribution patterns shown on Figures 3 to 6.

CRITERIA FOR THE PREPARATION OF TRAFFIC IMPACT ANALYSES

According to the *City of Perris Transportation Impact Analysis Guidelines for CEQA* (May 12, 2020) ["City TIA Guidelines"], certain types of projects, because of their size, nature, or location, are exempt from the requirement of preparing a traffic impact analysis.

Ms. Pam Steele
MIG INC.
June 8, 2023

Vehicle Miles Traveled (VMT) Analysis Screening Analysis

The project VMT impact has been assessed in accordance with guidance from the City TIA Guidelines. The transportation guidelines provide a framework for “screening thresholds” for certain projects that are expected to cause a less than significant impact without conducting a detailed VMT study.

The project requirements for evaluation of transportation impacts under CEQA was assessed using the City of Perris VMT Scoping Form for Land Use Projects as appended to the City of Perris TIA Guidelines and included in Attachment A of this letter. As documented in the VMT Scoping Form, the proposed project satisfies the following VMT screening criteria:

A.	Is the project 100% affordable housing?	No
B.	Is the project within half mile of qualifying transit?	No
C.	Is the project a local serving land use?	No
D.	Is the project in a low VMT area[1]?	Yes
E.	Are the project’s net daily trips less than 500 ADT?	Yes

Therefore, the proposed project is presumed to have a less than significant impact on VMT since it satisfies one or more of the VMT screening criteria established by the City of Perris (the project site is in a low VMT area and has net daily trips less than 500 ADT). No additional VMT modeling or mitigation measures are required.

Level of Service (LOS) Analysis Screening Analysis

As noted in the project Scoping Form (see Attachment A), the project is exempt from Level of Service evaluation outside of CEQA since the project does not exceed the City-established trip generation threshold of 50 peak hour trips.

TRANSPORTATION SETTING

As stated previously, the proposed project is located on the south side of Harley Knox Boulevard between Indian Avenue and Perris Boulevard within the Perris Valley Commerce Center Specific Plan (PVCC SP).

Harley Knox Boulevard

This six-lane divided roadway trends in an east-west direction and is classified as a Primary Arterial (six-lane divided roadway with 94-foot roadway and 128-foot right-of-way) on the City of Perris General Plan Circulation Element in the study area. On-street parking is not permitted on either side of the roadway. There are currently no designated bicycle facilities in the project vicinity. Sidewalks are provided along the north side of the roadway where the adjacent property is developed. Harley Knox Boulevard provides direction access to the Interstate-215 freeway and is a designated truck route from Interstate-215 to Redlands Avenue.

Access Management Requirements

The *Perris Valley Commerce Center Amendment No. 12 Specific Plan* (February 2022) Table 5.0-1, Roadway Design Requirements and Intersection Spacing, provides roadway and driveway design requirements. According to this Standard, a Primary Arterial requires intersection spacing of 1,320 feet and commercial/industrial spacing as determined by the City Engineer

[1] See Attachment B: The WRCOG VMT Screening Tool was developed from the Riverside Transportation Analysis Model (RIVTAM) travel forecasting model to measure VMT performance for individual jurisdictions and for individual traffic analysis zones (TAZs).

The distance between the east and west project driveways is 525 feet. The distance between the project east driveway and Indian Avenue is approximately 1,355 feet, and the distance between the project west driveway and Perris Boulevard is approximately 750 feet. While the proposed project driveway spacing does not meet the PVCC SP spacing requirements, spacing between the two driveways is maximized within the project frontage and provides separate access points for cars and trucks. Additionally, project east and west driveways are restricted to right turns in/out only with the raised median on Harley Knox Boulevard. With no median break and restricted movement at the project driveways, the potential conflicting movements such as left turns are prohibited and will not occur at these driveways. As such, the general intent of the PVCC spacing requirements is met such that no turning conflicts or queuing concerns are anticipated to occur between the project driveways.

SITE ACCESS

Based on the existing raised median along Harley Knox Boulevard, the two vehicular access driveways proposed at Harley Knox Boulevard are assumed to provide right in/right out only access, including one passenger car only access driveway and one truck only access driveway.

Gate Stacking Analysis

As the truck access is proposed to be a gated entry, the vehicle stacking length has been evaluated for the gated ingress location. Adequate vehicle stacking allows vehicles a place to wait for the gate to open without blocking traffic in the public right-of-way. The vehicle stacking area is measured from the gate to the edge of sidewalk.

The gate queueing analysis was performed based on procedures outlined in the ITE *Transportation and Land Development* (1988). The methodology estimates the number of queueing vehicles at the service point based on a Poisson distribution algorithm for estimating the effect of surges and random arrivals. Analysis inputs include the number of inbound vehicles, the number of gated access locations, the number of service lanes per access, service rate capacity of the gate, and the confidence interval used for the analysis. The length of necessary stacking space is then based on the design vehicle length multiplied by the expected number of vehicles per service lane.

Table 3 summarizes the parking gate access analysis, and a detailed worksheet is provided in Attachment C. As shown in Table 3, the truck gate entrance provides approximately 79.6 feet of storage length, which is sufficient to accommodate the forecast queue length of 74 feet (approximately one truck).

Vehicle Turning/Swept Path Movement

Truck turning/swept paths exhibit for a typical service truck (WB-67) circulating the project are provided in Attachment D.

Recommendations

Since the passenger car driveway is right -in/out, a high percentage of the outbound vehicles are expected to perform an eastbound U-turn at the intersection of Perris Boulevard at Harley Knox Boulevard. A R73-2 (CA) sign may be installed for the eastbound left turn lane. The feasibility for trucks to perform a U-turn movement at this location will depend on the size of the truck. Turning movement analysis shows that the movement should be feasible for intermediate semitrailer trucks with 33-foot trailers (WB-40 design vehicle) or smaller; larger trucks will make a left-turn or through movement at Perris

All on-site and off-site roadway design, traffic signing and striping, and traffic control improvements relating to the proposed project shall be constructed in accordance with applicable State/Federal engineering standards and to the satisfaction of the City of Perris.

CONCLUSION

The proposed project is forecast to generate approximately 103 daily vehicle trips, including 10 vehicle trips during the AM peak hour and 10 vehicle trips during the PM peak hour, which equates to approximately 159 daily PCE trips, including 12 PCE trips during the AM peak hour and 12 PCE trips during the PM peak hour.

The proposed site is currently zoned Commercial (C), and the project involves a Specific Plan Amendment to redesignate zoning from commercial to industrial (LI). As previously stated, the proposed industrial project is forecast to generate fewer trips than a comparable size commercial project.

The proposed project satisfies the City-established VMT screening criteria for projects in a low VMT area and with net daily trips less than 500 ADT; therefore, the project is exempt from preparation of a detailed VMT analysis and may be presumed to result in a less than significant VMT impact.

The project is exempt from Level of Service evaluation outside of CEQA based on the project trip generation.

We appreciate the opportunity to assist you on this project. Should you have any questions or if we can be of further assistance, please do not hesitate to call at (714) 795-3100 x 103.

Sincerely,
GANDDINI GROUP, INC.

Perrie Ilercil, P.E. (AZ)
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
GIANCARLO J. GANDDINI
TR 2663
TRAFFIC
STATE OF CALIFORNIA

Giancarlo Ganddini, PE, PTP
Principal

Table 1
Project Trip Generation

Land Use: Warehousing	
Size: 59.974 TSF	

TRIP GENERATION RATES PER TSF[1]

Vehicle Type	Source[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Rate	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Rate	Daily Rate
All Vehicles	ITE 150	77%	23%	0.170	28%	72%	0.180	1.710
Trucks Only	ITE 150	52%	48%	0.020	52%	48%	0.030	0.600
Passenger Car (88.2% AM, 83.3% PM, 64.9% Daily)		0.116	0.035	0.151	0.042	0.108	0.150	1.110
Truck (11.8% AM, 16.7% PM, 35.1% Daily)		0.010	0.010	0.020	0.016	0.014	0.030	0.600
Truck Mix:	SCAQMD							
2-Axle Trucks (16.7%)		0.002	0.001	0.003	0.003	0.002	0.005	0.100
3-Axle Trucks (20.7%)		0.002	0.002	0.004	0.003	0.003	0.006	0.124
4+ Axle Trucks (62.6%)		0.007	0.006	0.013	0.010	0.009	0.019	0.376

VEHICLE TRIPS GENERATED

Vehicle Type	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Passenger Car	7	2	9	3	6	9	67
Trucks[3]							
2-Axle Trucks	0	0	0	0	0	0	6
3-Axle Trucks	0	0	0	0	0	0	7
4+ Axle Trucks	0	1	1	0	1	1	23
Subtotal	0	1	1	0	1	1	36
Total Vehicle Trips Generated	**7**	**3**	**10**	**3**	**7**	**10**	**103**

PCE[3] TRIPS GENERATED

Vehicle Type	PCE Factor[4]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Passenger Car	1.0	7	2	9	3	6	9	67
Trucks[3]								
2-Axle Trucks	1.5	0	0	0	0	0	0	9
3-Axle Trucks	2.0	0	0	0	0	0	0	14
4+ Axle Trucks	3.0	0	3	3	0	3	3	69
Subtotal		0	3	3	0	3	3	92
Total PCE Trips Generated		**7**	**5**	**12**	**3**	**9**	**12**	**159**

Notes:
1. TSF = Thousand Square Feet
2. ITE = Institute of Transportation Engineers *Trip Generation Manual* (11th Edition, 2021); ### = ITE Land Use Code. SCAQMD = South Coast Air Quality Management District recommendations for non-cold storage warehouse.
3. Truck vehicle totals rounded up to whole values for a conservative analysis of small industrial projects that have a small percentage of trucks by axle. Truck PCE totals rounded up to a whole value after PCE factor applied to unrounded by axle totals.
4. PCE = passenger car equivalent. PCE factors are based on the County of Riverside Transportation Analysis Guidelines (December 2020), "Appendix C – Analysis Input Parameters"

Table 2

Trip Generation Comparison (Proposed Project Minus Zoned Land Use)

Trip Generation Rates									
			AM Peak Hour			PM Peak Hour			
Land Use	Source[1]	Land Use Variable[2]	In	Out	Total	In	Out	Total	Daily
Shopping Plaza (40-150k without Supermark	ITE 821	TSF	62%	38%	1.73	49%	51%	5.19	67.52
Warehousing	ITE 150	TSF	77%	23%	0.17	28%	72%	0.18	1.71

Trips Generated										
				AM Peak Hour			PM Peak Hour			
Land Use	Source	Quantity	Unit	In	Out	Total	In	Out	Total	Daily
COMMERCIAL TRIPS[3]										
Shopping Plaza (40-150k without Supermark	ITE 821	115.907	TSF	124	77	201	295	307	602	7826
PROPOSED INDUSTRIAL TRIPS										
Warehousing (Vehicle Trips)	ITE 150	59.974	TSF	7	3	10	3	7	10	103
Warehousing (PCE[4] Trips)[5]				7	5	12	3	9	12	159
Difference in PCE Trips Generated				-117	-72	-189	-292	-298	-590	-7,667

Notes:

1. ITE = Institute of Transportation Engineers Trip Generation Manual (11th Edition, 2021); ### = Land Use Code.
   All rates based on General Urban/Suburban setting.
2. TSF = Thousand Square Feet.
3. Current buildout potential is based on the maximum permissible commercial floor-area-ratio (FAR) for Commercial (C) zoning.
   Site Area x FAR = Commercial Square Footage
4. PCE = passenger car equivalent.
5. See Table 2.

Table 3
Gate Stacking Minimum Queue Requirements

Gate / Peak Hour	Demand Flow (veh/hr)[1]	Service Lanes	Service Rate Capacity (veh/hr/ln)	Utilization Factor	Queue Length (feet)[2]	Storage Length (feet)	Adequate Storage Provided
Entering							
AM Peak Hour	1	1	113	0.01	74	80	YES
PM Peak Hour	1	1	113	0.01	74	80	YES

Notes:

1. See Table 1. AM and PM peak hour inbound demand for trucks is less than one, so the demand was rounded up to one.
2. Based on Transportation and Land Development (Institute of Transportation Engineers, 1988) "Applications of Queuing Analysis" methodology with service rate capacities from *Entrance-Exit Design and Control for Major Parking Facilities* (Crommelin, 1972); see Attachment C.

Legend
Study Intersection

Figure 1
Project Location Map

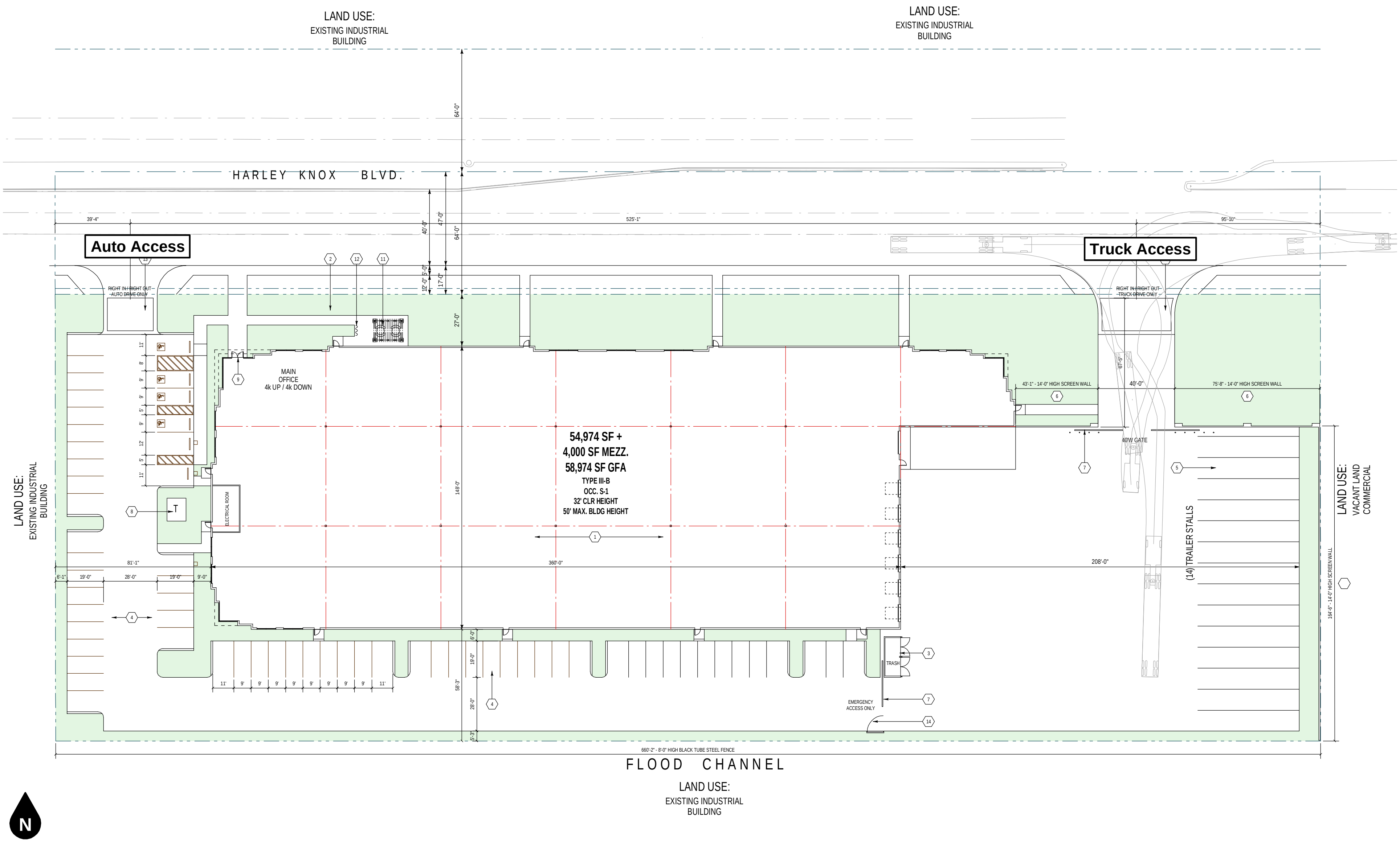


Figure 2
Site Plan

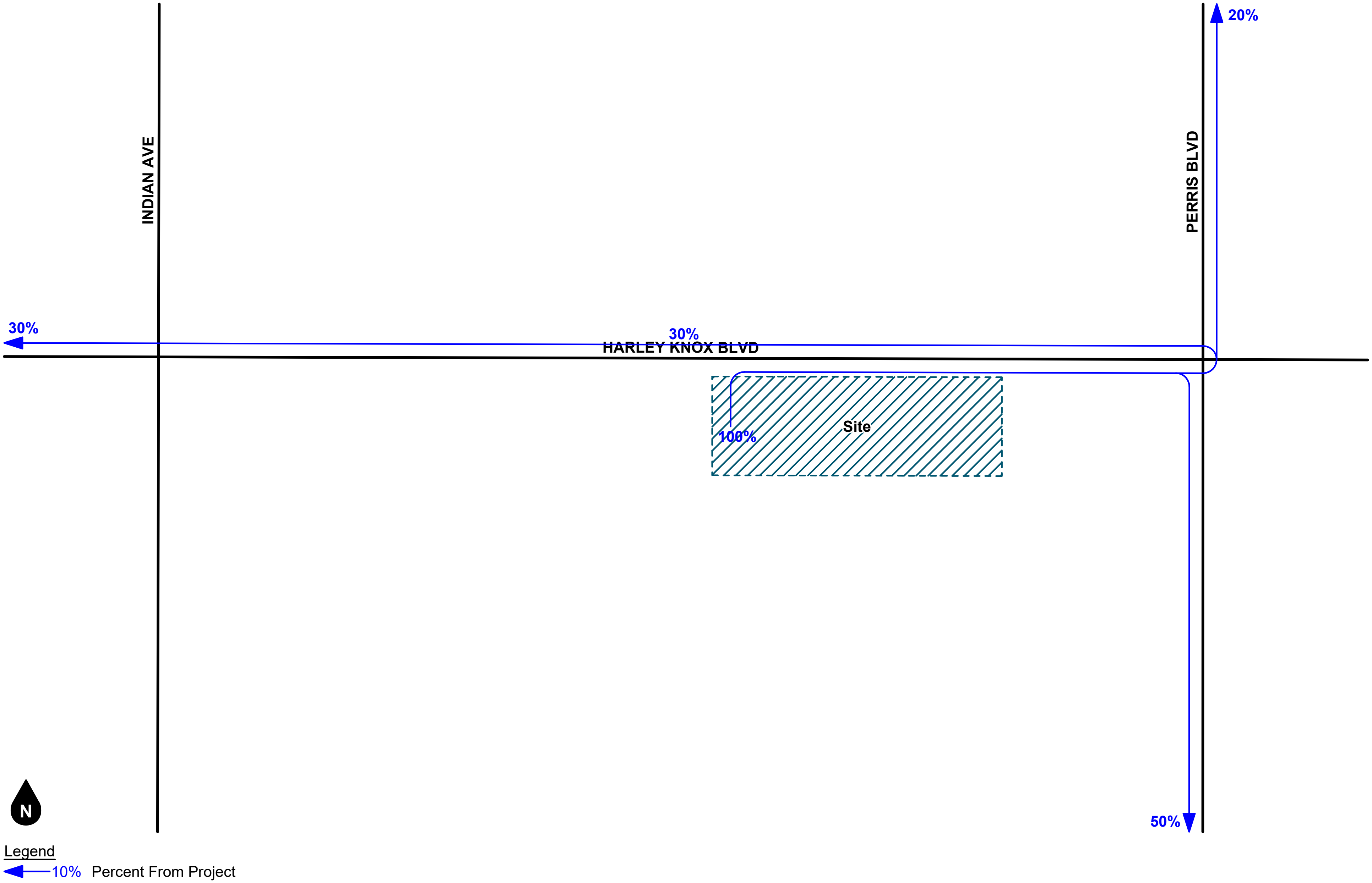


Figure 3
Project Passenger Cars Trip Distribution (Outbound)

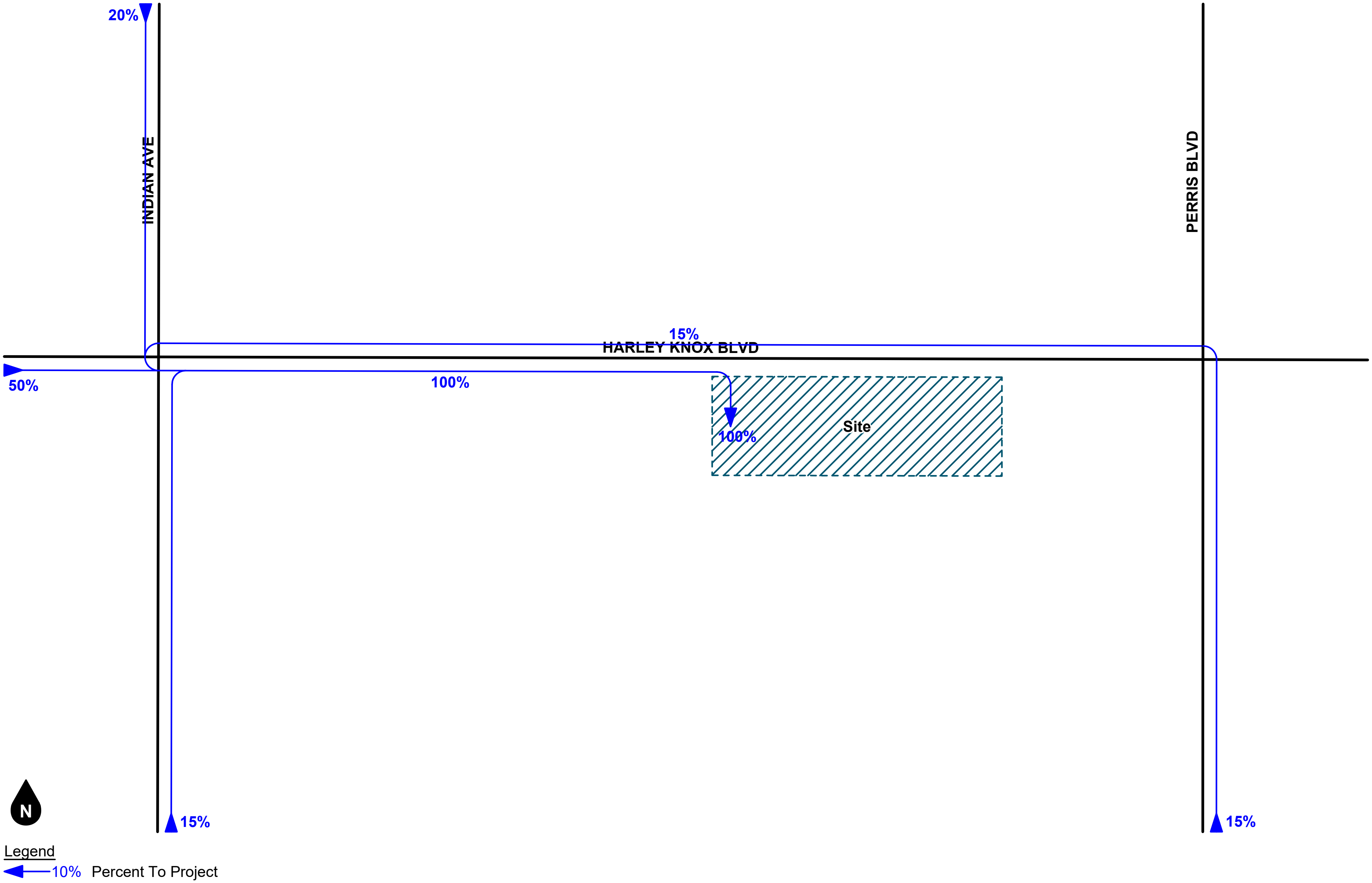


Figure 4
Project Passenger Cars Trip Distribution (Inbound)

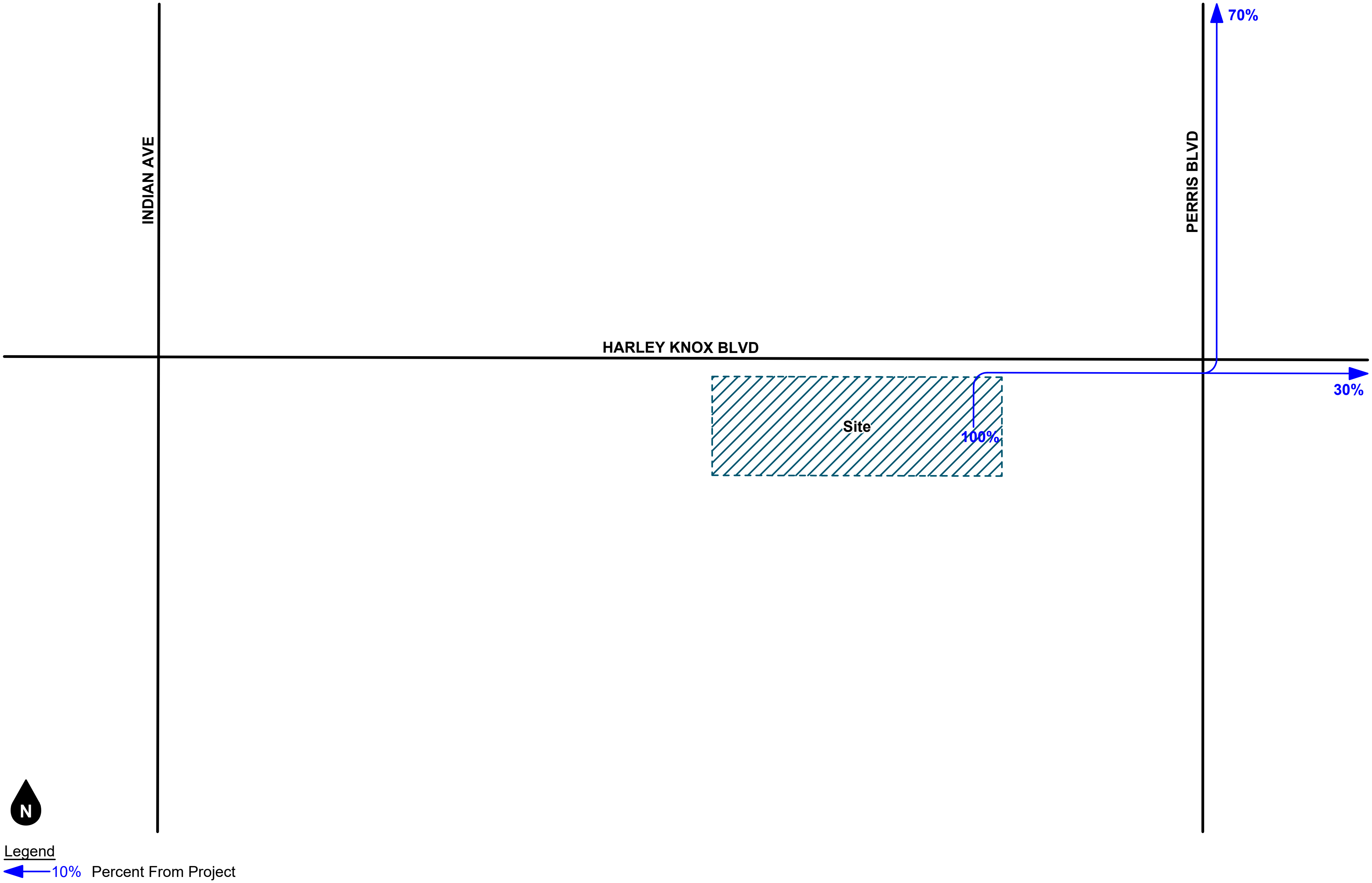


Figure 5
Project Trucks Trip Distribution (Outbound)

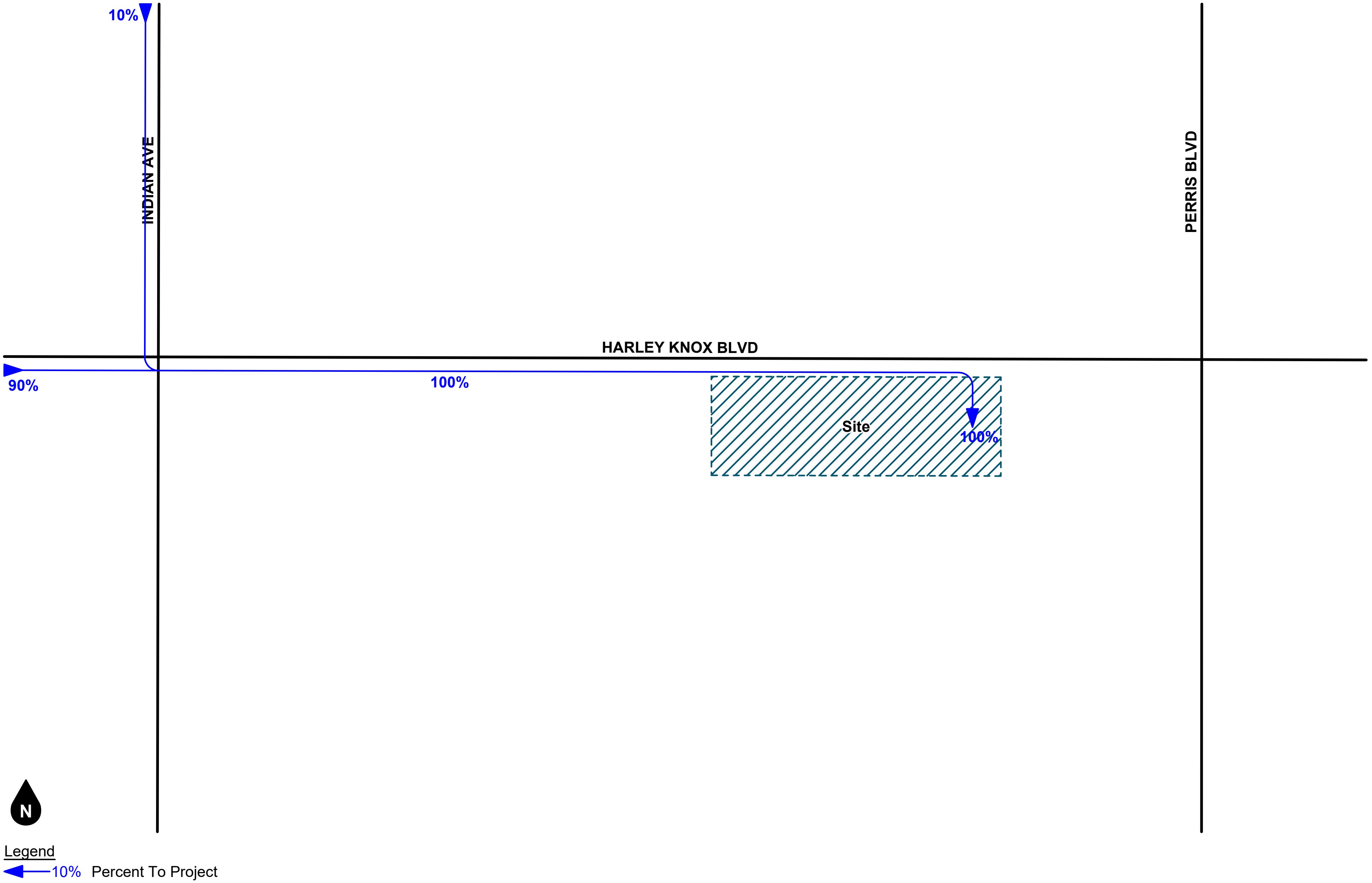


Figure 6
Project Trucks Trip Distribution (Inbound)

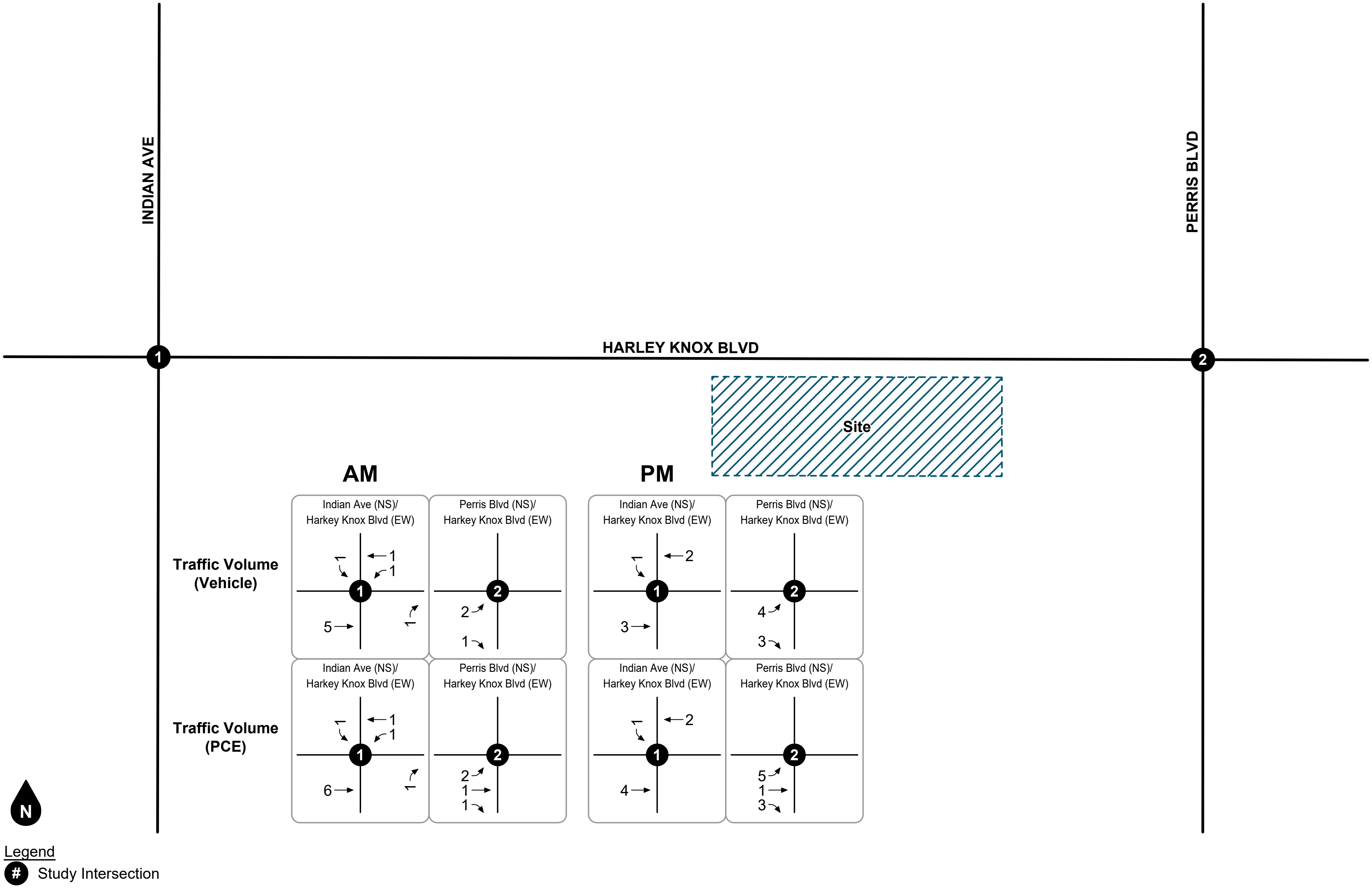


Figure 7
Project Peak Hour Intersection Turning Movement Volumes

ATTACHMENT A

VMT SCOPING FORM FOR LAND USE PROJECTS

City of Perris
www.cityofperris.org

CITY OF PERRIS
VMT SCOPING FORM FOR LAND USE PROJECTS

This Scoping Form acknowledges the City of Perris requirements for the evaluation of transportation impacts under CEQA. The analysis provided in this form should follow the City of Perris TIA Guidelines, dated May 12, 2020.

I. Project Description

Tract/Case No.: DPR 22-00036

Project Name: Brew Harley Knox Industrial Project

Project Location: South of Harley Knox Boulevard between Indian Avenue and Perris Boulevard in the City of Perris

Project Description: 59,974 square foot industrial warehouse

(Please attach a copy of the project Site Plan)

Current GP Land Use: PVCC SP - Commercial (C) **Proposed GP Land Use:** PVCC SP - Light Industrial (LI)

Current Zoning: PVCC SP - Commercial (C) **Proposed Zoning:** PVCC SP - Light Industrial (LI)

If a project requires a General Plan Amendment or Zone change, then additional information and analysis should be provided to ensure the project is consistent with RHNA and RTP/SCS Strategies.

II. VMT Screening Criteria

	YES		NO		Attachments:
A. Is the Project 100% affordable housing?	YES		NO	✔	
B. Is the Project within 1/2 mile of qualifying transit?	YES		NO	✔	
C. Is the Project a local serving land use?	YES		NO	✔	
D. Is the Project in a low VMT area?	YES	✔	NO		B
E. Are the Project's Net Daily Trips less than 500 ADT?	YES	✔	NO		Table 1

Low VMT Area Evaluation:

Citywide VMT Averages[1]		
Citywide Home-Based VMT =		VMT/Capita
Citywide Employment-Based VMT =	16.9	VMT/Employee

WRCOG VMT MAP

Project TAZ	VMT Rate for Project TAZ[1]		Type of Project	
1810		VMT/Capita	Residential:	
	16.7	VMT/Employee	Non-Residential:	✔

[1] Per latest WRCOG VMT Tool for baseline year (2023); see Attachment B

Trip Generation Evaluation:

Source of Trip Generation: ITE 11th Edition, 2021. ITE 150 (vehicles trips); PCE factors from RC Guidelines

Project Trip Generation: 103/159 **Average Daily Trips (ADT)**

Internal Trip Credit:	YES		NO	✔	% Trip Credit:	
Pass-By Trip Credit:	YES		NO	✔	% Trip Credit:	
Affordable Housing Credit:	YES		NO	✔	% Trip Credit:	
Existing Land Use Trip Credit:	YES		NO	✔	Trip Credit:	

Net Project Daily Trips: 103/159 **Average Daily Trips (ADT)** Attachments: Table 1

Does project trip generation warrant an LOS evaluation outside of CEQA? YES [ ] NO ✔

III. VMT Screening Summary

A. Is the Project presumed to have a less than significant impact on VMT?

A Project is presumed to have a less than significant impact on VMT if the Project satisfies at least one (1) of the VMT screening criteria.

Yes. Criteria D and E.

B. Is mitigation required?

If the Project does not satisfy at least one (1) of the VMT screening criteria, then mitigation is required to reduce the Project's impact on VMT.

No.

C. Is additional VMT modeling required to evaluate Project impacts?

YES		NO	✔

If the Project requires a zone change and/or General Plan Amendment AND generates 2,500 or more net daily trips, then additional VMT modeling using RIVTAM/RIVCOM is required. If the project generates less than 2,500 net daily trips, the Project TAZ VMT Rate can be used for mitigation purposes.

IV. MITIGATION

A. Citywide Average VMT Rate (Threshold of Significance) for Mitigation Purposes:

B. Unmitigated Project TAZ VMT Rate:

C. Percentage Reduction Required to Achieve the Citywide Average VMT: %

D. VMT Reduction Mitigation Measures:

Source of VMT Reduction Estimates:	
Project Location Setting	

	VMT Reduction Mitigation Measure:	**Estimated VMT Reduction (%)**
1.		0.00%
2.		0.00%
3.		0.00%
4.		0.00%
5.		0.00%
6.		0.00%
7.		0.00%
8.		0.00%
9.		0.00%
10.		0.00%
Total VMT Reduction (%)		**0.00%**

(Attach additional pages, if necessary, and a copy of all mitigation calculations.)

E. Mitigated Project TAZ VMT Rate:

F. Is the project pressumed to have a less than significant impact with mitigation?

If the mitigated Project VMT rate is below the Citywide Average Rate, then the Project is presumed to have a less than significant impact with mitigation. If the answer is no, then additional VMT modeling may be required and a potentially significant and unavoidable impact may occur. All mitigation measures identified in Section IV.D. are subject to become Conditions of Approval of the project. Development review and processing fees should be submitted with, or prior to the submittal of this Form. The Planning Department staff will not process the Form prior to fees being paid to the City.

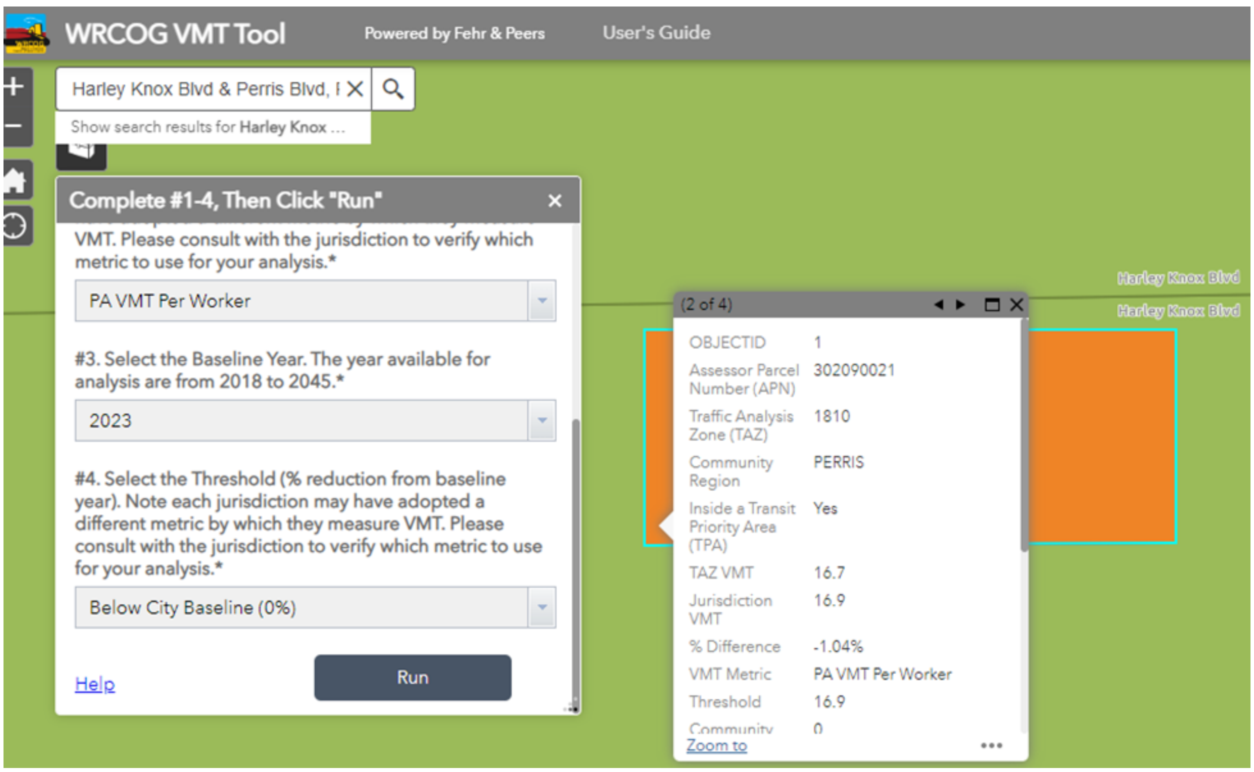
Prepared By		**Developer/Applicant**	
Company:	Ganddini Group, Inc.	**Company:**	MIG, INC.
Contact:	Perrie Ilercil	**Contact:**	Ms Pam Steele
Address:	555 Parkcenter Dr, Ste 225, Santa Ana CA 92705	**Address:**	1650 Spruce St. Ste. 106, Riverside CA 92507
Phone:	714-795-3100*103	**Phone:**	951-787-9222
Email:	perrie@ganddini.com	**Email:**	pams@migcom.com
Date:	2023-0327	**Date:**	

Approved by:

Perris Development Serivces Dept.	**Date**	**Perris Public Works Dept.**	**Date**

ATTACHMENT B

VMT SCREENING TOOL RESULTS


WRCOG VMT Tool
Powered by Fehr & Peers
User's Guide
Harley Knox Blvd & Perris Blvd, I
Show search results for Harley Knox ...
Complete #1-4, Then Click "Run"
VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*
PA VMT Per Worker
#3. Select the Baseline Year. The year available for analysis are from 2018 to 2045.*
2023
#4. Select the Threshold (% reduction from baseline year). Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*
Below City Baseline (0%)
Help
Run
(2 of 4)
OBJECTID 1
Assessor Parcel Number (APN) 302090021
Traffic Analysis Zone (TAZ) 1810
Community Region PERRIS
Inside a Transit Priority Area (TPA) Yes
TAZ VMT 16.7
Jurisdiction VMT 16.9
% Difference -1.04%
VMT Metric PA VMT Per Worker
Threshold 16.9
Community 0
Zoom to
Harley Knox Blvd
Harley Knox Blvd

ATTACHMENT C

GATE STACKING ANALYSIS

Table C-1
Gate Stacking Analysis[1]

PROJECT:	Brew Harley Knox Industrial Building		DATE: 2023-0608
LOCATION:	Project Truck Access Gate		JN: 19619

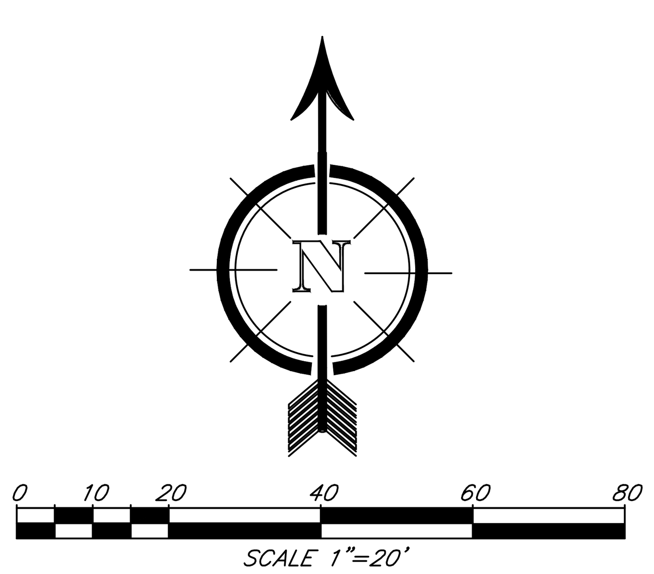
	AM	PM
Gate Distribution: 100%	INBOUND 80 ft	INBOUND 80 ft
DEMAND RATE (q) (veh/hr)	1	1
SERVICE RATE (Q) (veh/hr/channel)[2]	113	113
NO. OF SERVICE POSITIONS (N)	1	1
NO. OF STORAGE LANES (N1)	1	1
PROBABILITY OF NOT EXCEEDING (P) [3]	0.05 P'=95%	0.05 P'=95%
UTILIZATION FACTOR (q/(N*Q))	0.01	0.01
LENGTH OF SERVICE VEHICLE (L) FEET	73.5	73.5
TRAFFIC INTENSITY (q/Q)	0.009	0.009
Q(M) VALUE [5]	0.01	0.01
NO. OF VEHICLES BEING SERVED (N)	1.00	1.00
NO. OF VEHICLES IN QUEUE (M)	-1.36	-1.36
M = ((LN(P) - LN(Q(M))/LN(p)) - 1	~0	~0
TOTAL NUMBER OF VEHICLES (N+M)	1.00 ~1	1.00 ~1
NO. OF VEHICLES IN EACH LANE	1.00	1.00
PER LANE ((N+M)/N1)[6]	1	1
LENGTH OF QUEUE (L) FEET	74	74

Notes:

1. Source: *Transportation and Land Development* (Institute of Transportation Engineers, 1988).
2. Service rates obtained from *Entrance-Exit Design and Control for Major Parking Facilities* (Crommelin, 1972).
3. P' = confidence interval; probability that queue will not exceed the calculated value.
4. Vehicle length based on truck-trailer combination length of 65 feet.
5. Q(M) = interpolated table values based on number of service channels (N) and utilization factor (q/NQ) per Table 8-11 (p.231) of *Transportation And Land Development*.
6. Fractional vehicles are rounded up.

ATTACHMENT D

TRUCK TURNING/SWEPT PATH MOVEMENT EXHIBIT



SEAL:

REGISTERED PROFESSIONAL ENGINEER
DANE A. SOMMERS
No. 90433
Exp. 9-30-23
CIVIL
STATE OF CALIFORNIA

PREPARED BY:

SDH & ASSOCIATES INCORPORATED

SDH AND ASSOCIATES INC.
27363 VIA INDUSTRIA
TEMECULA, CA 92590
TEL: (951) 683-3691 FAX (951) 788-2314

SCALE: 1" =20'

DATE: OCTOBER 2022

BENCHMARK

DESCRIBED BY METRO WATER DISTRICT SO. CALIFORNIA 1992 LOCATED AT THE SOUTHWEST CORNER OF THE INTERSECTION OF PERRIS BOULEVARD AND RIDER ST, AT THE BASE OF A STEEL TRAFFIC SIGNAL LIGHT, A 3.5 FOOT (1.1 M) BY 2.7 FOOT (0.8 M) CONCRETE BASE . A 3-1/4 INCH STANDARD MWDSC ALUMINUM DISK SET ON EASTSIDE FLUSH.

CITY OF PERRIS

BREW ENT.II - HARLEY KNOX
TRUCK TURNING EXHIBIT

1 OF 1 SHEETS

FOR:

W.O.

CITY FILE NO.