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Ms. Jennifer Campos  
 RECON Environmental, Inc.  
 1927 Fifth Avenue  
 San Diego, CA 92101

LLG Reference: 3-17-2780

**Subject: Victory Industrial Park/Escondido Innovation Center: Warehouse Proposal**  
 Escondido, CA

Dear Jennifer:

Linscott, Law & Greenspan, Engineers (LLG) is pleased to present this evaluation of trip generation comparison and impacts associated with the proposed warehouse use “Project” on the Victory Industrial Park (VIP) and Escondido Innovation Center (EIC) sites.

**Site Background – VIP & EIC Project Approvals**

The VIP and EIC projects were approved for 91,000 square feet (SF) and 98,500 SF of industrial/businesspark use, respectively. LLG prepared traffic impact studies for each project, which were utilized in the Mitigated Negative Declarations (MNDs) certified for each project. The VIP project will generate 728 Average Daily Trips (ADT); the EIC will generate 788 ADT (1,516 ADT total). While the sites are located adjacent to each other, the projects were processed completely independently. Each site was evaluated individually, with the other considered as a “cumulative” project along with other potential growth in the area. As such, there is no condition where the combined effects of both the VIP and EIC-only projects are evaluated. Thus, from an EIR standpoint, any comparison of the Project must be made to only the VIP or the EIC projects, not the combination of both.

Of the two, the EIC project is the larger, generating 788 ADT. **Table A** shows the approved EIC trip generation.

**TABLE A**  
**PROJECT TRIP GENERATION –APPROVED INNOVATION CENTER**

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour						
		Rate <sup>a</sup>	Vol	% of ADT	In:Out		Volume			% of ADT	In:Out		Volume		
					Split	In	Out	Tot	Split		In	Out	Tot		
EIC	98.5 KSF	8/ KSF	788	11%	9:1	78	9	87	12%	2:8	19	76	95		

**Footnotes:**

a. Rate is based on SANDAG’s (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002).

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Per the City of Escondido significance thresholds and the analysis methodologies presented in that study, two (2) short-term significant direct impacts and two (2) short-term significant cumulative impacts were calculated within the study area.

The EIC study concluded that proposed mitigation measures would be more than sufficient to mitigate the nominal impacts caused by the Project. In addition, the Project would pay a fair share toward the Citracado Parkway Extension Project to improve and redirect the flow of traffic along this roadway.

***Proposed Project Comparison – Trip Generation***

The current proposal under evaluation is the siting of a single 212,275 SF warehouse building on both the VIP and EIC sites. Again, the larger of these two approved projects with respect to traffic is the EIC site, generating 788 ADT with 98,500 SF of industrial/businesspark space. While the overall footprint of the currently proposed Warehouse Project is larger, the trip generation rate per 1,000 SF (KSF) for the warehouse land use is lower than that studied in the EIC (8 ADT/KSF for industrial/businesspark, vs. 5 ADT/KSF for warehouse).

**Table B** shows the Project trip generation using standard SANDAG rates, and the comparison to the approved EIC project:

**TABLE B  
 PROJECT TRIP GENERATION COMPARISON  
 PROPOSED WAREHOUSE VS. APPROVED INNOVATION CENTER**

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate <sup>a</sup>	Volume	% of ADT	In:Out	Volume			% of ADT	In:Out	Volume		
					Split	In	Out	Total		Split	In	Out	Total
Proposed (Warehouse)	212.275 KSF	5 / KSF	1,061	13%	7:3	97	41	138	15%	4:6	64	95	159
Approved (Innovation)	98.5 KSF	8 / KSF	788	11%	9:1	78	9	87	12%	2:8	19	76	95
<b><i>Difference</i></b>	<b><i>113.775 KSF</i></b>	–	<b><i>273</i></b>	–	–	<b><i>19</i></b>	<b><i>32</i></b>	<b><i>51</i></b>	–	–	<b><i>45</i></b>	<b><i>19</i></b>	<b><i>64</i></b>

**Footnotes:**

a. Rate is based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002).

**Figure 1** shows the conceptual site plan.

***Comparison of Impacts to EIC – Additional Project Trips (Non-PCE Volumes)***

The proposed warehouse Project would increase the daily traffic over the approved EIC by 273 ADT, and the total AM/PM peak hour traffic of 51 and 64 trips, respectively. This is a relatively nominal increase in terms of traffic volume generation with respect to potential impacts. It is important to note that these standard rates do not specifically account for “heavy vehicle” (i.e. tractor trailer) traffic, which could be higher for a warehouse use than for an industrial/businesspark use.

It is a common practice in San Diego County to apply a “Passenger Car Equivalence” (PCE) factor to truck-intensive land uses to analytically simulate the additional effects of heavy vehicles in the Level of Service (LOS) capacity analyses (e.g. slower starting and stopping, lane changes, queuing etc.). A factor between 2.0 and 4.0 is typically applied to some or all of a land use’s trip generation to account for heavy vehicles. A PCE factor is common for analysis of truck haul routes, construction traffic evaluations, etc. It is not clear that a PCE factor could or should be applied to the warehouse use, as the number of trucks that may occur is not known at this time, although national trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual cite truck-traffic operations related to warehouse uses at about 20% (see ***Attachment A***).

The EIC Project determined the following four (4) impacts:

***Intersections***

- TRA-1. Intersection #5: Harmony Grove Road/Hale Avenue (Short-Term Direct & Cumulative)

***Street Segments***

- TRA-2. Segment #1: Harmony Grove Road – Project Access “A” and Enterprise Street (Short-Term Cumulative)
- TRA-3. Segment #2: Harmony Grove Road – Enterprise Street and Hale Avenue (Short-Term Cumulative)
- TRA-4. Segment #4: Hale Avenue – Harmony Grove Road and 9th Avenue (Short-Term Direct & Cumulative)

Mitigation measures were identified and approved in the MND.

In the EIC study, the remaining study locations were shown to operate at acceptable LOS C or better. A Project impact would occur if the additional volumes discussed above caused any of these LOS C locations to degrade to LOS D or worse.

LLG assigned and evaluated the additional traffic (without PCE) to the street system segments and intersections using the analysis models from the EIC study. The additional traffic was shown to not reduce LOS to substandard levels for the non-EIC impacted locations. ***No additional impacts would be expected with the Project as proposed using standard rates without PCE.***

### ***Comparison of Impacts to EIC – Additional Project Trips (PCE-adjusted Volumes)***

As discussed, a percentage of the 1,061 ADT generated by the overall warehouse Project would be heavy vehicles, potentially subject to a PCE factor. A conservative PCE factor would be 3.0 from the range of 2.0 to 4.0 discussed earlier.

To determine how much of the Project's 1,061 ADT could be increased with the PCE before an impact were to occur, LLG conducted a "reserve capacity" analysis of the street system studied in the EIC MND to determine which LOS C-operating locations would be the first to degrade to LOS D. The most sensitive location was the Harmony Grove Road/ Project Access "B" intersection, located on the northeastern side of the site. Traffic volumes are forecast to decrease on this segment with the proposed extension of Citracado Parkway, which would improve traffic operations at this intersection and towards which the EIC project would make a fair share contribution. However, the Citracado Parkway Extension was not assumed in this analysis. It should be noted that the Project's revised driveway configuration as shown on *Figure 1* was assumed for all analyses. Frontage improvements as mitigation for the VIP/EIC impacts would also sufficiently address the same impacts associated with proposed warehouse use.

The reserve capacity analysis showed that a total Project driveway trip generation of 2,500 ADT (total, with or without PCE) could occur before the intersection degraded to LOS D and an impact would occur. *Table B* above shows that the Project as proposed will generate 1,061 ADT (without PCE), leaving an additional 1,439 ADT-worth of trips to which a PCE increase could be applied before resulting in an impact to the Harmony Grove Road/ Driveway "A" intersection. Using the conservative PCE factor of 3.0, the 1,439 ADT of available "reserve driveway non-PCE ADT" would amount to 480 PCE-adjusted ADT ( $1,439 \text{ reserve ADT} \div 3.0 \text{ PCE} = 480 \text{ ADT w/PCE}$ ). In this case, 44% ( $480 \text{ PCE-adjusted ADT} \div 1,061 \text{ total driveway} = 45\%$ ) of the Project's overall ADT could be truck-related without an impact. This is over twice the 20% of trucks associated with warehousing described in the ITE rates.

***Attachment B*** shows the near-term intersection operations of the theoretical 2,500 ADT Project. As shown, all intersections are calculated to operate at LOS C or better, with the exception of Intersection #5, which was previously identified as a significant direct and cumulative impact for the approved EIC project. However, further increases in traffic would result in LOS D operations at the intersection of Harmony Grove Road and Project Driveway "B" during the PM peak hour under Existing + Cumulative Projects + Project conditions.

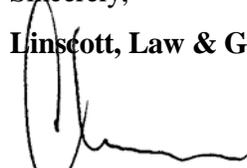
### ***Conclusions***

The proposed 212,275 KSF warehouse Project would replace two approved projects: the 91 KSF Victory Industrial Park, and the 98.5 KSF Escondido Innovation Center "industrial/businesspark" projects. As compared to only the larger approved EIC, the Project would result in an increase in daily traffic of 273 ADT, and in total AM/PM peak hour traffic of 51 and 64 trips, respectively. Practically speaking, it will generate 455 ADT less traffic than the combined VIP/EIC sites it will replace, but for the purposes of environmental analysis, its effects must be compared to only one, the larger EIC project.

The Project would not result in additional impacts over those identified and mitigated in the EIC project, either without or with PCE adjustment. These conclusions assume a maximum “heavy vehicle” percentage of 45%, which is over twice the 20% heavy vehicles associated with warehousing as described in the national trip generation rates.

Sincerely,

**Linscott, Law & Greenspan, Engineers**



Chris Mendiara  
Associate Principal

cc: File

Attachments: Figure 1 – Conceptual Site Plan  
Attachment A: ITE Warehouse Excerpt  
Attachment B: Reserve Capacity Analysis



Figure 1

Conceptual Site Plan

**ATTACHMENT A**  
**ITE WAREHOUSE EXCERPT**

# Land Use: 150

## Warehousing

### Description

Warehouses are primarily devoted to the storage of materials, but they may also include office and maintenance areas. High-cube warehouse/distribution center (Land Use 152) and business park (Land Use 770) are related uses.

### Additional Data

Truck trips accounted for 20 percent of the weekday traffic at one of the sites surveyed.

No vehicle occupancy data were available specifically for warehousing, but the average was approximately 1.3 persons per automobile for all industrial uses.

The peak hour of the generator typically coincided with the peak hour of the adjacent street traffic.

Facilities with employees on shift work may peak at other hours.

Two sources indicated that the warehousing sites comprised multiple buildings.

The sites were surveyed from between the late 1960s and the 2000s throughout the United States and Canada.

### Source Numbers

6, 7, 12, 13, 15, 17, 74, 184, 192, 390, 406, 411, 436, 443, 571, 579, 583, 596, 598, 611

**ATTACHMENT B**  
**RESERVE CAPACITY ANALYSIS**

**NEAR-TERM INTERSECTION OPERATIONS  
500 KSF (2,500 ADT) PROJECT**

Intersection	Control Type	Peak Hour	Existing		Existing + Project			Existing + Cumulative		Existing + Project + Cumulative			Significant Impact?
			Delay <sup>a</sup>	LOS <sup>b</sup>	Delay	LOS	Δ <sup>c</sup>	Delay	LOS	Delay	LOS	Δ <sup>c</sup>	
1. Harmony Grove Rd / Project Drwy A	MSSC <sup>d</sup>	AM	0.0	A	12.9	B	12.9	0.0	A	14.7	B	14.7	No
		PM	0.0	A	20.3	C	20.3	0.0	A	21.4	C	21.4	No
2. Andreasen Dr / Enterprise St	Signal	AM	26.1	C	26.1	C	0.0	27.6	C	27.7	C	0.1	No
		PM	24.6	C	26.0	C	1.4	26.8	C	31.1	C	4.3	No
3. Harmony Grove Rd / Enterprise St	Signal	AM	15.9	B	16.9	B	1.0	16.5	B	18.1	B	1.6	No
		PM	15.0	B	15.4	B	0.4	19.2	B	20.0	B	0.8	No
4. Harmony Grove Rd / Project Drwy B	MSSC	AM	0.0	A	10.7	B	10.7	0.0	A	12.2	B	12.2	No
		PM	0.0	A	18.1	C	18.1	0.0	A	22.9	C	22.9	No
5. Harmony Grove Rd / Hale Ave	AWSC <sup>e</sup>	AM	15.7	C	23.0	C	7.3	36.8	E	<b>63.8</b>	<b>F</b>	<b>27</b>	<b>Yes<sup>f</sup></b>
		PM	25.5	D	<b>42.7</b>	<b>E</b>	<b>17.2</b>	66.9	F	<b>98.5</b>	<b>F</b>	<b>31.6</b>	<b>Yes<sup>f</sup></b>

**Footnotes:**

- a. Average delay in seconds per vehicle.
- b. Level of Service.
- c. Increase in delay due to Project traffic.
- d. Minor Street Stop Control. Minor street turn delay reported.
- e. All-Way Stop Control. Average delay reported.
- f. Significant impact also identified at this location with approved EIC Project.

SIGNALIZED		UNSIGNALIZED	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 45.0	D	25.1 to 35.0	D
45.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F