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396 Hayes Street
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Subject: ***Review of Transportation/Traffic Analysis***
***Draft Environmental Impact Report***
***Los Angeles International Airport (LAX) Landside Access Modernization Program***
***Los Angeles, California***

Dear Ms. Impett:

As requested, MRO Engineers, Inc., (MRO) has reviewed the "Transportation/Traffic" section of the Draft Environmental Impact Report (DEIR) for the Los Angeles International Airport (LAX) Landside Access Modernization Program (Los Angeles World Airports, September 2016). The "Transportation/Traffic" section of the DEIR is based on a traffic impact analysis prepared by Raju Associates (Raju). (Reference: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September, 2016.) The Raju traffic study is presented as Appendix O to the DEIR.

Our review focused on the technical adequacy of the Transportation/Traffic analysis, including the detailed procedures and conclusions documented in the Raju study.

**Transportation/Traffic Analysis Review**

Our review of the DEIR Transportation/Traffic analysis revealed potentially significant deficiencies that should be addressed prior to approval of the project and its related environmental documentation by the City of Los Angeles. These issues are summarized below.

1. ***Traffic Volume Data Does Not Accurately Represent LAX Activity*** – Traffic volume data for the 183 study intersections was collected at various times between 2013 and 2015. The traffic count summary sheets for 179 of the study intersections are presented in DEIR Appendix O. The years in which those traffic counts were conducted are summarized below:

   - 2016 – 3 locations,
   - 2015 – 130 locations,
   - 2014 – 40 locations, and
   - 2013 – 6 locations.

   DEIR p. 4.12-59 presents slightly different information regarding when the counts used in the study were performed:

   - 2016 – 0 locations,
   - 2015 – 133 locations,

- 2014 – 44 locations, and
- 2013 – 6 locations.

Of greater interest are the months in which the data were collected, according to the data sheets in Appendix O:

- January – 3 locations,
- February – 3 locations,
- March – 76 locations,
- April – 38 locations,
- May – 4 locations,
- June – 0 locations,
- July – 23 locations,
- August – 0 locations,
- September – 13 locations,
- October – 13 locations,
- November – 0 locations,
- December – 6 locations,

DEIR p. 4.12-11 provides information regarding monthly traffic activity in the LAX Central Terminal Area (CTA) for the years 2006 through 2014. As described there:

> *. . . CTA traffic reached peak activity during the summer months of June, July and August. August is typically the peak month for Airport roadway traffic followed closely by July. For the purposes of this analysis, August 2014 was used as the peak month for traffic data, because the field data was collected in August. Although July had slightly more passengers in 2014, the analysis was based on a peak month average day in August.*

This quote specifically applies to the analysis of on-airport traffic conditions, but it also relates to the off-airport traffic analysis, since the two systems are inextricably linked; all vehicles traveling to or from the on-airport road system must also use the off-airport road system. For that reason, it is instructive to compare the intersection data collection schedule to the level of traffic activity at LAX. Table 1 presents that comparison, with the CTA average daily traffic volumes ranked from highest month to lowest month.

**Table 1**
**CTA Traffic Volume Data vs. Data Collection Schedule**

| CTA Traffic Volume Data[1] | | | Intersection Counts[2] | | |
|---|---|---|---|---|---|
| Month | Average Daily Traffic[3] | Monthly Ranking | Monthly Ranking | No. | % |
| August | 77,311 | 1 | 10 | 0 | 0.0% |
| July | 76,476 | 2 | 3 | 23 | 12.8% |
| June | 75,635 | 3 | 10 | 0 | 0.0% |
| December | 72,647 | 4 | 6 | 6 | 3.4% |
| May | 71,404 | 5 | 7 | 4 | 2.2% |
| April | 69,091 | 6 | 2 | 38 | 21.2% |
| November | 69,064 | 7 | 10 | 0 | 0.0% |
| March | 67,996 | 8 | 1 | 76 | 42.5% |
| September | 67,838 | 9 | 4 | 13 | 7.3% |
| October | 67,418 | 10 | 4 | 13 | 7.3% |
| January | 65,673 | 11 | 8 | 3 | 1.7% |
| February | 63,553 | 12 | 8 | 3 | 1.7% |

Notes:
[1] Source: DEIR Table 4.12.1-2: CTA Average Daily Traffic Volumes, p. 4.12-11.
[2] Source: DEIR Appendix O.
[3] Overall average of all data points in DEIR Table 4.12.1-2 is 70,358 vehicles per day.

While August has historically had the highest average daily traffic volumes in the CTA, none of the intersection traffic counts used in the DEIR Transportation/Traffic analysis were performed in that month. This is also true for June, which is the third busiest month in the CTA. In July, the second busiest month, 23 (12.8 percent) of the 179 counts were performed.

The largest number of intersection traffic counts (76 counts, representing 42.5 percent of the counts) were conducted in March, which is the eighth busiest month in the CTA. Thirty-eight counts (21.2 percent) were performed in April, which is the sixth busiest month in the CTA. The average daily traffic volumes in those two months are 88 – 90 percent of the August volumes. In addition, they are somewhat below the overall average value of 70,358 vehicles per day, based on all of the data points (from 2006 through 2014) in DEIR Table 4.12.1-2.

Clearly, the "existing conditions" intersection traffic volumes employed in the DEIR analysis are not representative of the level of activity at LAX. Over 60 percent of the counts were performed in the bottom half of the ranking of monthly traffic volumes in the CTA. Only about 13 percent of the counts were conducted in the busiest three months.

In short, the existing traffic volumes are too low to accurately reflect traffic operations in the study area. As a result, the existing conditions level of service findings provide an overly optimistic view of the average vehicular delay and the current level of congestion in the study area. This deficiency will carry through to all subsequent analysis scenarios, so that intersection delays and project-related impacts will be understated.

2. ***Inadequate Midday Study Area*** – As noted above, the study area includes 183 intersections, all of which were included in the AM and PM peak hour analyses. According to DEIR p. 4.12-48:

> *. . . 36 of these intersections (immediately adjacent to or in the vicinity of the Project site) have been selected for a midday off-peak hour traffic impact evaluation.*

However, describing this as an "off-peak hour" analysis might be a misnomer. DEIR Figure 4.12.1-4 illustrates the pattern of arriving and departing passenger volumes over the course of an entire day. The arrival and departure patterns of airline passengers are closely linked to the traffic patterns of LAX as a whole.

According to DEIR p. 4.12-60, the midday traffic counts were generally conducted between 11:00 AM and 2:00 PM. Referring to DEIR Figure 4.12.1-4, a distinct peak in passenger arrival and departure activity is shown at about 11:00 AM. In fact, that peak is clearly higher than the total passenger activity shown in the AM (7:00 - 9:00 AM) and PM (4:00 - 6:00 PM) peak periods, for which all 183 intersections were analyzed.

In short, the midday traffic analysis is not inconsequential, given the LAX activity patterns demonstrated in the DEIR Transportation/Traffic section. This is clearly illustrated in DEIR Table 4.12.2-4, which summarizes the existing trip generation at LAX, as follows:

- AM Peak hour: 12,338 vehicle-trips,
- Midday peak hour: 16,097 vehicle-trips, and
- PM peak hour: 12,840 vehicle-trips.

As shown, the volume of traffic generated at LAX in the midday peak hour is 25 – 30 percent higher than either the AM or PM peak hours.

Therefore, it is inappropriate to limit the midday traffic analysis to the 36 arbitrarily selected locations addressed in the DEIR. In fact, given the factors presented above (i.e., non-representative existing conditions data and the fact that LAX traffic generation is highest in the midday period), we believe that a truly conservative analysis would include all 183 intersections in the midday analysis.

At a minimum, review of DEIR Figure 4.12.2-1 – Traffic Study Intersections (DEIR p. 4.12-55) and the existing conditions level of service (LOS) results presented in DEIR Table 4.12.2-6 (DEIR pp. 4.12-63 – 4.12-71) reveals a number of additional midday analysis candidate locations, each of which is also "adjacent to or in the vicinity of the Project site." Furthermore, each operates at LOS D or worse in either or both of the AM and PM peak hours, which is a reasonable indicator that it might operate poorly in the midday peak hour, as well. The additional midday study intersections are as follows:

- Intersection 21: Lincoln Boulevard/83rd Street (LOS F – AM)
- Intersection 69: Sepulveda Boulevard/Grand Avenue (LOS D – AM & PM)
- Intersection 70: Sepulveda Boulevard/El Segundo Boulevard (LOS D – AM & LOS E – PM)
- Intersection 71: Sepulveda Boulevard/Rosecrans Avenue (LOS E – AM & LOS F – PM)
- Intersection 88: Douglas Street/El Segundo Boulevard (LOS D – PM)

- Intersection 98: Aviation Boulevard/West 120th Street (LOS D – AM)
- Intersection 99: Aviation Boulevard/El Segundo Boulevard (LOS D – AM & LOS E – PM)
- Intersection 100: Aviation Boulevard/Rosecrans Boulevard (LOS E – AM & PM)
- Intersection 126: La Cienega Boulevard/West 120th Street (LOS D – PM)
- Intersection 127: La Cienega Boulevard/El Segundo Boulevard (LOS D – PM)
- Intersection 131: I-405 Northbound Ramps/Imperial Highway (LOS D – PM)
- Intersection 136: Inglewood Avenue/Century Boulevard (LOS D – PM)
- Intersection 137: Inglewood Avenue/Lennox Boulevard (LOS D – AM & LOS E – PM)
- Intersection 138: Inglewood Avenue/Imperial Highway (LOS E – AM & LOS F – PM)

To fully reflect the traffic patterns at LAX and to provide a comprehensive evaluation of the potential impacts of the proposed project, the midday traffic impact analysis must be revised to include these additional study intersections. The revised analysis should then be incorporated into a revised DEIR, which must be circulated for additional public review.

3. ***Obsolete Level of Service Calculation Procedures*** – DEIR p. 4.12-57 states:

> *For the City of Los Angeles study locations, including those shared with other jurisdictions, the* Critical Movement Analysis-Planning[l] *(CMA) method of intersection capacity analysis was used to determine the intersection volume-to-capacity (V/C) ratio and corresponding level of service at the signalized study intersections.*

The footnote in the quote presented above clarifies that the intersection level of service calculations were performed using the Transportation Research Board "Circular 212" method. This methodology was published in a document entitled, *Interim Materials on Highway Capacity* (Transportation Research Board, Transportation Research Circular Number 212, January 1980). As referenced, the document was published in 1980, almost 27 years ago.

The purpose of "Circular 212" was to provide a set of procedures to supplement the 1965 version of the *Highway Capacity Manual* until such time as a fully-updated manual could be published. Such an updated manual was distributed to the traffic engineering profession in 1985. Since that time, additional updated manuals have been published in 1994, 1997, 2000, and the year 2010. Each of these revised versions of the *Highway Capacity Manual* has advanced the technical procedures associated with the analysis of transportation facilities, including intersections, roadway segments, and freeway facilities.

The introduction to the 1980 Circular 212 document addresses the anticipated life span of the procedures documented there, including the following statements:

- "The choice of a Transportation Research Circular as the publication medium has been quite deliberate. By definition, Circulars contain information of immediate interest but not necessarily of long-lasting value."
- ". . . the methods presented here can be put to use until such time as a revised Manual becomes available." [As noted above, that occurred in 1985, followed by subsequent revisions in 1994, 1997, 2000, and 2010.]

- "This report comprises the first set of interim materials which will be distributed prior to the publication of a new "Highway Capacity Manual" in the mid-1980s. These interim materials are intended for application by HCM users in the 1980-1982 period."

It is clear from these statements that the "interim" procedures documented in Circular 212 have long ago outlived their usefulness and have been superseded. Thus, their use in this analysis is inappropriate. To ensure the accuracy of the traffic analysis, the intersection level of service calculations must be performed using the current, year 2010 version of the *Highway Capacity Manual*. (Reference: Transportation Research Board, *Highway Capacity Manual*, Fifth Edition, December 2010.)

In that regard, we note that the analyses of stop-sign-controlled intersections were performed using the 2010 *Highway Capacity Manual* procedures, as were the analyses of facilities under the jurisdiction of Caltrans.

4. ***Inconsistent On-Airport and Off-Airport Traffic Analyses*** – The DEIR presents separate analyses of the on-airport and off-airport transportation systems. It is not clear, however, that those two analyses are consistent with each other, which leads to questions regarding the validity of the results of those analyses. Particular areas of concern are delineated below.

*Analysis Day*

For the on-airport analysis:

> *Friday was selected as the design day as it is typically the busiest overall day of the week for the Airport roadway system.* (DEIR p. 4.12-3)

Although the off-airport analysis text does not explicitly say so, that analysis was based on conditions during the mid-week period (Tuesday through Thursday), which represents the usual method for conducting traffic impact analyses. Evaluation of traffic operations outside the Tuesday through Thursday period is generally not undertaken, because those circumstances might be atypical. The classic example used to illustrate this point relates to the fact that "Black Friday" conditions are not considered in analyzing the traffic impacts of a regional shopping center.

This case is different, though, as Friday happens every week, not just once a year. Also, because LAX is the dominant generator of traffic in the study area, it deserves special consideration. As noted in DEIR Table 4.12.1-2 (DEIR p. 4.12-11), LAX generated average daily traffic of 75,690 vehicles per day in the year 2014. Further, DEIR Table 4.12.2-4 (DEIR p. 4.12-61) shows that it generated over 12,300 AM peak hour trips, almost 16,100 midday peak hour trips, and 12,840 PM peak hour trips. It is unlikely that any other nearby land use generates such substantial traffic volumes.

Limiting the traffic impact analysis to the Tuesday through Thursday period is a guideline and not a requirement. Flexibility is accorded the lead agency in choosing the analysis periods. For consistency between the on-airport and off-airport traffic analyses, as well as to ensure a thorough analysis of potential traffic impacts, the analysis must address Friday "design day" conditions, as defined in the on-airport analysis.

*Analysis Hours*

The on-airport traffic analysis addressed the following peak hours (DEIR p. 4.12-18):

- Peak arrivals: 8:18 – 9:18 PM, and
- Peak departures: 6:16 – 7:16 AM.

The "peak arrivals" hour also represents the peak overall hour (i.e., arrivals and departures combined).

The off-airport analysis addressed the following time periods:

- AM peak hour: Highest hour between 7:00 and 10:00 AM,
- Midday peak hour (reduced study area): Highest hour between 11:00 AM and 2:00 PM, and
- PM peak hour: Highest hour between 3:00 and 6:00 PM.

The fact that the off-airport analysis addresses off-peak hours at LAX raises the distinct possibility that not all of the potentially significant impacts will be identified.

*Travel Demand Forecasting Models*

The on-airport traffic analysis for future year conditions was based, in part, on:

> *A vehicle trip generation and distribution model [that] was developed to estimate future traffic volumes on the Airport's roadway system based on future passenger activities.* (DEIR p. 4.12-3)

The off-airport traffic analysis apparently based its future year projections on a different travel demand forecasting model, as described below:

> *Utilizing TransCAD Version 7.0 modeling software, a detailed and updated travel demand forecasting model (updated City of Los Angeles Travel Demand Model) was developed for the Study Area using the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) 2012 Transportation Model (the most current regional model available at the time this Draft EIR was being prepared) and the calibrated and validated City of Los Angeles' Travel Demand Model as the base.* (DEIR p. 4.12-59)

No evidence is provided to indicate that any coordination occurred between the developers of the two models. Of particular interest is the question of what happens where the on-airport and off-airport study areas meet. Do the peak-hour traffic projections for the years 2024 and 2035 match? If not, why not? This information is needed to ensure that the traffic forecasts employed in both analyses are credible.

*Summary*

The lack of consistency between the on-airport and off-airport traffic analyses raises questions regarding the validity and credibility of the analyses, particularly with regard to the off-airport evaluation. The on-airport study is generally focused on historical design hours and days at LAX, based on extensive data collection at that facility. On the other hand, the off-airport analysis focuses on analysis procedures that, while considered "standard" in the traffic

engineering profession, do not necessarily fully address traffic operations at LAX. As demonstrated above, the approach employed in the off-airport analysis reflects levels of activity that fall far short of "peak" conditions (despite being labeled "peak hours") and, as a result, significant traffic impacts might be missed.

5. ***Inadequate Transit Analysis*** – The difficulties faced by individuals who desire to use public transit to access LAX are described at DEIR p. 1-2:

> *Moreover, LAX also lacks a direct connection to the Los Angeles County Metropolitan Transportation Authority (Metro) transit system. Currently, passengers and employees who want to take public transportation to LAX must either take a bus (often requiring a transfer from the LAX City Bus Center on W. 96th Street to the LAWA operated Lot C shuttle to reach the CTA), or take the Metro Green Line light rail to the station at Imperial Highway and Aviation Boulevard. They must then transfer to the LAWA-operated G shuttle to the Airport, which is a trip of approximately 2 miles.*

These constraints might lead one to believe that consideration of transit impacts and potential improvements to the transit system serving LAX would be important. The extremely limited, one-paragraph "analysis" of the proposed project's impacts on the regional transit system suggests otherwise. (DEIR p. 4.12-153) The analysis presented there states, in part:

> *Given that the Project consists of roadway and transportation improvements and construction of facilities that would facilitate movement of passengers at LAX . . ., the Project would not generate any additional new trips. . . . The proposed Project would improve connections to the regional transit system, which may encourage passengers and employees to utilize transit rather than other modes of traffic. Therefore, impacts to transit would be less than significant.*

First, we note the absolute lack of any analysis that might serve as a credible basis for a finding of a "less than significant" impact. We also find it ironic that the claim that the proposed Project "may encourage passengers and employees to utilize transit" is apparently used as the basis for determining that the transit impact will be less than significant.

The threshold of significance for transit is presented at DEIR p. 4.12-95:

> *. . . a significant impact is considered to occur if implementation of the proposed Project would result in a substantial increase in transit demand compared to the capacity of transit lines serving the project area.*

No information is provided with respect to current or project-related transit demand. Further, no data are presented to demonstrate whether adequate capacity exists (or will exist in the future) on the various transit lines that serve LAX. (Of course, this relieves the burden of having to determine what constitutes a "substantial" increase in transit demand.)

Finally, we note that Mitigation Measure "MM-ST (LAMP)-6. Transportation Demand Management (TDM) Program" (DEIR p. 4.12-179) specifically includes provision of transit passes to LAX employees. This feature of the TDM program can be expected to increase transit ridership, potentially impacting the transit lines serving LAX.

Under the circumstances, the absence of a meaningful analysis of existing and future transit capacity and the effect of the proposed project on that available capacity (if any) is a substantial deficiency in the DEIR. Further detail must be provided and incorporated into a revised DEIR.

6. ***Deficient Construction Traffic Analysis*** – The construction traffic analysis study area is substantially reduced from that addressed in the other traffic analyses. According to DEIR p. 4.12-194:

> *The construction traffic study area for this analysis includes those roads and intersections that would most likely be used by employee and truck traffic associated with construction of the proposed Project.*

In reality, though, the study area, as illustrated at DEIR Figure 4.12.3-1 (DEIR p. 4.12-195), barely extends beyond the boundaries of LAX. The apparent suggestion is that none of the construction traffic will travel east of La Cienega Boulevard, south of Imperial Highway or Interstate 105, or north of Westchester Parkway.

The analysis time periods are presented at DEIR p. 4.12-209. The AM peak hour is defined as 7:00 - 8:00 AM, while the PM peak hour is described as 4:00 - 5:00 PM. For both peak-hour periods:

> *The construction traffic analysis assumed that no employee trips would be on the roadways at this time. . . . This approach provides a conservative impact analysis by addressing situations when complete avoidance of the morning [or evening] commuter peak period is not possible.*

It is not at all clear how ignoring the traffic associated with 966 construction employees constitutes a "conservative" analysis. (DEIR, p. 4.12-213) In fact, referring to DEIR Table 4.12.3-4 (DEIR p. 4.12-215), we see that the assumed analysis hours just miss having to assess the impacts of over 520 employee-generated trips. For clarity, we have replicated a portion of that table below, as Table 2.

In the morning, the DEIR indicates that 523 employee vehicles will arrive between 6:00 and 7:00 AM, along with a total of 162 truck trips, for a total traffic volume of 685 trips. But the analysis addresses the following hour (7:00 – 8:00 AM), when no employees are assumed to arrive and the total traffic volume is only 162 trips, about one-quarter as many as between 6:00 and 7:00 AM. It is also interesting to note that, although they are specifically listed on the table, no "employee shuttle" trips are assumed.

In the evening, the analysis addressed the hour between 4:00 and 5:00 PM (i.e., 16:00 – 17:00) when only truck traffic is assumed to occur (162 trips). If the previous hour had been considered, the traffic total would be 685 trips, including 523 departing employees and 162 truck trips (81 in and 81 out). Again, no employee shuttle trips are shown in any hour.

The employee trip values in Table 2 are based largely on a number of assumptions regarding how construction workers will be scheduled. Given the uncertainties inherent in developing such assumptions, we believe that a truly conservative analysis would only result from evaluation of the adjacent hours, which have higher estimated construction employee traffic volumes.

Further, we note that the same deficiencies described here also afflict the construction traffic analysis for cumulative conditions, which is documented at DEIR pp. 4.12-219 – 4.12-229.

**Table 2**
**Proposed Project-Related Construction Traffic PCEs[1,2]**

| Hour | Employee | | Truck | | Employee Shuttle | | Total Construction PCEs |
|---|---|---|---|---|---|---|---|
| | Trips In | Trips Out | Trips In | Trips Out | Trips In | Trips Out | |
| 6:00 – 7:00 | 523 | -- | 81 | 81 | -- | -- | 685 |
| **7:00 – 8:00[3]** | **--** | **--** | **81** | **81** | **--** | **--** | **162** |
| 8:00 – 9:00 | 57 | -- | 81 | 81 | -- | -- | 219 |
| | | | | | | | |
| 14:00 – 15:00 | 154 | -- | 81 | 81 | -- | -- | 316 |
| 15:00 – 16:00 | -- | 523 | 81 | 81 | -- | -- | 685 |
| **16:00 – 17:00[3]** | **--** | **--** | **81** | **81** | **--** | **--** | **162** |

Notes:
1 Source: DEIR, Table 4.12.3-4 – Project Peak (January 2020) – Proposed Project-Related Construction Traffic PCEs, p. 4.12-215.
2 PCE = Passenger Car Equivalent (Reflects conversion of truck numbers to indicate an equivalent number of passenger cars, based on operational considerations.)
3 Analysis hours assumed for DEIR construction traffic analysis are shown in **bold** font and highlighted in yellow.

The non-conservative nature of the construction traffic analysis is further revealed through examination of the tables providing the intersection level of service results. DEIR Table 4.12.3-7 summarizes these results for the peak construction period (January 2020). According to that table, of the 58 calculations presented (i.e., 29 intersections analyzed for the AM and PM peak hours), 44 (76 percent) indicated no change in volume/capacity (V/C) ratio due to construction traffic, with the calculations carried out to three decimal places. In other words, no construction-related traffic was added to those intersections. A significant impact was found at only one intersection – Aviation Boulevard/Century Boulevard.

The cumulative conditions analysis (November 2019), as documented in DEIR Table 4.12.3-8 (DEIR p. 4.12-235) had one additional calculation for which the V/C ratio increased by 0.000. In other words, 45 of the 78 calculations listed on that table showed no increase in V/C, which indicates that no construction traffic was added to the intersection. (The traffic volumes for the construction traffic analysis are not presented in the DEIR, so it is impossible to confirm this.) In this case, three intersections were found to have significant impacts – Aviation Boulevard/ Century Boulevard, Imperial Highway/Aviation Boulevard, and Imperial Highway/I-105 Ramp.

Analyses were conducted for the significantly impacted intersections to determine the effects of implementing recommended mitigation measures. Not surprisingly, perhaps, those analyses concluded that the proposed measures would fully mitigate the construction impacts. That is, the change in V/C ratio after mitigation would be 0.000. It is not clear exactly how that is to be accomplished, given the list of mitigation measures (e.g., formation of a Project Task Force, development of Worksite Traffic Control Plans, etc.), which would generally have little or no effect on construction traffic volumes.

Since the only construction traffic that was considered in the analysis is truck traffic, it would seem reasonable to expect that the mitigation measure outlining designated truck routes might be

effective, but the roads listed there include those having significant impacts – Aviation Boulevard, Century Boulevard, Imperial Highway, and I-105. Another proposed measure calls for establishing designated truck delivery hours, but the description of that measure is so full of loopholes (in particular, repeated use of the phrase "to the extent possible") that it might have no effect whatsoever.

These results are simply not credible. The construction traffic analysis must be revised to reflect more conservative, more realistic consideration of the potential effects associated with almost 1,000 construction workers and the trucks necessary to carry out the proposed project. As illustrated in Table 2 above, it is difficult to avoid the conclusion that the construction traffic analysis hours were arbitrarily selected to avoid impacts. Additional detail is also needed with respect to the specific beneficial effects of the proposed mitigation measures.

Further consideration is also required with respect to the lane closures and other forms of traffic blockage that will occur for extended periods over the course of the construction process. The construction-related thresholds of significance include the following (DEIR pp. 4.12-230 – 4.12-231):

- *Result in temporary lane, alley, or street closures within a major or secondary highway right-of-way for more than one day.*
- *Result in the loss of regular vehicular or pedestrian access to Airport, commercial, or industrial facilities for more than one day.*
- *Result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route.*

DEIR p. 4.12-237 acknowledges that:

> *Construction of the proposed Project could result in the closure of one or more lanes of a major off-Airport traffic carrying street for an extended length of time. . . . The proposed Project would also require the re-routing of buses, the relocation of the LAX City Bus Center, and the relocation of bus stops.*

Although this is identified as a significant impact, no quantitative analysis is provided to indicate the true magnitude of the issue. In particular, where is this expected to occur? At locations where extended lane closures are anticipated, what will be the resulting vehicular delay and level of service in the AM and PM peak hours? Will there be additional safety impacts and crashes associated with the lane closures? What will be the effect on transit travel times? When bus stops are relocated, what will be the extent of the increase in walk access distance and time for transit passengers? Will it be sufficient to discourage transit usage?

In summary, the analysis of construction traffic impacts is deficient. The analysis appears to have been skewed to ensure that no impacts would occur, despite the arrival and departure of almost 1,000 construction workers in 523 vehicles/hour every day. In addition, more detail is necessary regarding the effects of lane closures that will occur over an extended period.

7. ***Deficient Transportation Demand Management Program*** – A key element of the proposed package of mitigation measures is the implementation of a Transportation Demand Management (TDM) Program (MM-ST (LAMP)-6, DEIR p. 4.12-179 – 4.12-180). This measure calls for the conduct of travel surveys and the formation of a Transportation Management Organization

(TMO), which will then offer various vaguely-defined "amenities/opportunities" to LAX-area employees.

The goal of this mitigation measure is to "[a]chieve a 5 percent trip reduction performance objective," which is further defined as:

- *Elimination of 200 peak hour trips (am or pm) identified as "drive alone" employee trips.*
- *Elimination of 800 average daily one-way trips identified as "drive alone" employee trips.*

It is unclear how the effectiveness of the TDM program will be measured, although perhaps the surveys referred to above might be helpful. More importantly, what happens if the performance objective is not met and the necessary trip reduction does not occur? By the time this failure becomes apparent, surrounding jurisdictions that will be inundated with LAX-generated traffic will have no recourse.

The proposed TDM program must be described in greater detail, and credible evidence of the specific beneficial effects of the various components of the program must be presented. As currently delineated, the value of the TDM program in effectively mitigating the impacts of the proposed project is questionable.

8. ***Failure to Address Freeway Access Deficiencies*** – As currently configured, the freeway access system serving LAX imposes an undue burden on the City of El Segundo. In particular, travelers approaching LAX on northbound I-405 tend to exit the freeway at westbound I-105, rather than continuing to Century Boulevard, where chronic traffic congestion causes delays, inconvenience, and frayed nerves. Unfortunately, the exit ramp from northbound I-405 to westbound I-105 overshoots Aviation Boulevard, so that these travelers are forced to use Nash Street, Maple Avenue, and Sepulveda Boulevard within El Segundo to reach the CTA.

   As passenger traffic at LAX increases, this situation will be exacerbated. The DEIR needs to address the potential for improved access from northbound I-405, particularly with respect to modifications to the northbound-to-westbound ramp between I-405 and I-105 that would allow drivers to exit from that ramp to Aviation Boulevard.

9. ***Nonexistent Project Access Analysis*** – The project proposes three major facilities that will each incorporate substantial parking structures, including a total of 24,300 parking spaces:

   - Intermodal Transportation Facility (West) – 8,000 parking spaces,
   - Intermodal Transportation Facility (East) – 8,300 parking spaces, and
   - Consolidated Rental Car Facility – 8,000 parking spaces.

   The DEIR presents no analysis to evaluate the access systems at these facilities, however. Such an analysis would address whether vehicles will be able to enter the facilities without queuing back onto the public street, thereby creating congestion and potential safety hazards. If left turns are required to enter the garages, can they be made safely? Also, will exiting drivers be able to do so safely, without creating hazards for themselves or passing motorists? Will either entering or exiting vehicles be subject to excessive idling, which would affect air quality and greenhouse gas emissions?

10. ***Mitigation Measures*** – In addition to the questions presented above regarding the TDM mitigation measure, we have identified a number of additional questions concerning the mitigation measures presented in the DEIR Transportation/Traffic section, as follows:

    - *MM-ST (LAMP)-7. Signal System Corridor Improvements – Intelligent Transportation System (ITS), City of Inglewood*: This measure includes a "monetary contribution" toward certain improvements, but does not specify the magnitude of the contribution. Will the proposed project fully fund the needed system upgrades or only pay a "fair share"?

      Also, three of the intersections listed in this measure are also addressed in other mitigation measures, specifically:

      - MM-ST (LAMP)-13. La Cienega Boulevard and Florence Avenue
      - MM-ST (LAMP)-14. Inglewood Avenue and Century Boulevard
      - MM-ST (LAMP)-16. La Cienega Boulevard and Manchester Boulevard

      What is the difference between MM-ST (LAMP)-7 and these other three measures?

    - *MM-ST (LAMP)-8. Signal System Corridor Improvements – Closed Circuit TV (CCTV) Camera and Changeable Message Signs (CMS) Installation*: This measure states that the proposed project, ". . . will provide funding towards implementation of Changeable Message Signs (CMS) along key access corridors to LAX such as Sepulveda Boulevard, La Cienega Boulevard and Century Boulevard."

      The measure does not state how much funding will be provided and is unclear as to whether the specific corridors listed are the only ones where CMS will be installed or if these are only examples of where this might occur. In short, additional specificity is required to allow a meaningful assessment of the beneficial effect of the measure.

    - *DEIR Section 4.12.2.9.3 Roadway Corridor Improvements* lists three significant roadway system improvements. However, these improvements are not designated as mitigation measures (i.e., they have no "MM-ST (LAMP)" number; those numbers skip over these three improvements). Consequently, it is not clear whether the proposed project will actually be required to implement these improvements.

    - *MM-ST (LAMP)-11. Modify the Intersection of La Cienega Boulevard and Arbor Vitae Street*: This measure says that the proposed project will add a second eastbound left turn lane and "contribute to design and implementation of signal system improvement," which will "increase intersection capacity by 10 percent."

      The amount of the contribution toward the signal improvements is unclear. Will the proposed project pay the entire cost or some lesser "fair share"? Further, the specific nature of the signal system improvement is not stated and the conclusion regarding its impact on intersection capacity is unsubstantiated.

    - The indirect impacts of implementing the proposed mitigation measures are not adequately addressed. This is briefly addressed at DEIR pp. 4.12-185 – 4.12-186, but that limited discussion revolves around the following statement:

      > *The environmental impacts associated with the proposed improvements to the off-Airport transportation system would depend on the specific nature, location, and extent of such improvements.*

The "specific nature, location, and extent" of the mitigation measures have presumably been set forth in the paragraphs preceding this statement and are, therefore, known. As such, a meaningful evaluation of the indirect impacts of implementing the measures should be possible. None is provided, however.

11. ***Potential Future Development*** – The DEIR addresses, at a program level, an analysis scenario referred to as "2035 Future With Project and Potential Future Related Development." (DEIR pp. 4.12-153 - 4.12-165) This scenario includes the traffic associated with 900,000 square feet of commercial development in addition to the 2035 Future With Project scenario. No information is presented to describe the specific land use assumptions or the volume of traffic associated with the potential future related development. Clearly, assumptions of this type have been made, as the DEIR presents detailed intersection V/C and LOS results for this analysis scenario. Absent this basic information about the potential future related development, it is impossible to judge the validity of the analysis results for this scenario.

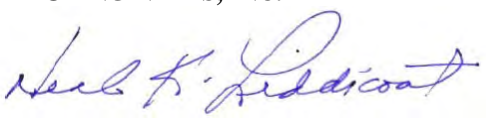
**CONCLUSION**

Our review of the "Transportation/Traffic" section of the Draft Environmental Impact Report for the LAX Landside Access Modernization Program in Los Angeles, California revealed several substantial issues the affecting validity of the conclusions presented in that document. A modified traffic impact analysis must be prepared, and that updated analysis should be incorporated into a revised environmental document.

We hope this information is useful. If you have questions concerning anything presented here, please feel free to contact me at (916) 783-3838.

Sincerely,

**MRO ENGINEERS, INC.**



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