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April 6, 2022

Angela Piarowski
CEO/Principal
Modulus Architects & Land Use Planning, Inc.
100 Sun Ave NE, Suite 600
Albuquerque, New Mexico 87109

Re: *Pan American Building Parking Study*

Dear Ms. Piarowski,

Lee Engineering has completed our parking study for the existing Pan American Building located at 100 Sun Ave NE in Albuquerque, New Mexico. This letter report documents our study procedures and findings.

INTRODUCTION

The existing Pan American Building complex currently contains 263,671 ft^2 of office space and has a total of 935 parking spaces. Modulus Architects & Land Use Planning, Inc. seeks to redevelop the north parking lot which would result in a reduction of 314 parking spaces for the complex. A total of 621 parking spaces will remain after . A site plan for the Pan American Building and surrounding parking lots is provided in **Figure 1** in the attachments.

This report is divided into the following sections:

1. City Parking Calculation with Parking Deductions
2. Parking Accumulation Data Collection
3. Institute of Transportation Engineers – Parking Generation Demand
4. Conclusions

CITY CODE PARKING CALCULATION

The number of parking spaces needed to accommodate the proposed Pan American Building was calculated according to the City of Albuquerque Integrated Development Ordinance (Part 14-15-5 Section 5-5) and are summarized in **Table 1**.

Table 1: City Code Parking Requirements Summary

Land Use	City Code	Size (ft²)	Code Requirement (Parking Spaces)
Four-story office building	3.5 / 1,000 ft² GFA	72,000 SF	252
Six-story office building	3.5 / 1,000 ft² GFA	181,276 SF	633
Single story office building	3.5 / 1,000 ft² GFA	10,395 SF	35
Total Parking Spaces Required By Code			920

Located near a transit rider shelter and providing carpool and vanpool spaces reductions to parking spaces required are applied. Reductions in the number of parking spaces required are summarized in **Table 2**.

Table 2: Parking Reduction Summary

Parking Reductions	Parking Spaces
Parking reductions 5-(5)(5)(a) 20% reduction for employment center	-184
Transit rider shelter to be constructed = 5% reduction	-46
Carpool spaces (2)	-8
Vanpool spaces (1 in garage and 1 outside garage) counts as 14 spaces	-14
Total parking required:	668
Total parking provided:	621

With 621 parking spaces provided, the amount of parking provided for the Pan American Building will fall below the City code requirement (668) by 47 parking spaces or approximately 7 (seven) percent.

PARKING ACCUMULATION DATA COLLECTION - ALBUQUERQUE

To determine the peak parking demand at the existing Pan American Building, a parking accumulation study was performed for the complex. This study was performed by counting the number of parked vehicles on site during peak AM and PM (commuter) operations, which were identified using trip generation and parking demand data published by the *Institute of Transportation Engineers* and the *Urban Land Institute* and pervious parking data provided by Modulus Architects & Land Use Planning, Inc. representatives. This information indicated that a General Office Building land use experiences peak parking demand during the following time periods on the weekday:

- 7:00 – 11:00 AM
- 3:00 – 6:00 PM

Therefore, parking accumulation data for the existing Pan American Building was collected during the times identified above on Tuesday, March 29, 2022. The number of parked vehicles in the parking lot was documented every 60 minutes within each of the study periods.

Occupancy data provided by the building shows that approximately 5% of existing space is un-leased. To analyze "full occupancy" of the building, counts were increased by 5%. The resulting number of parking spaces occupied and available during each observation period is shown in **Figure 2**. Copies of the data sheets for this study are provided as attachments to this letter.

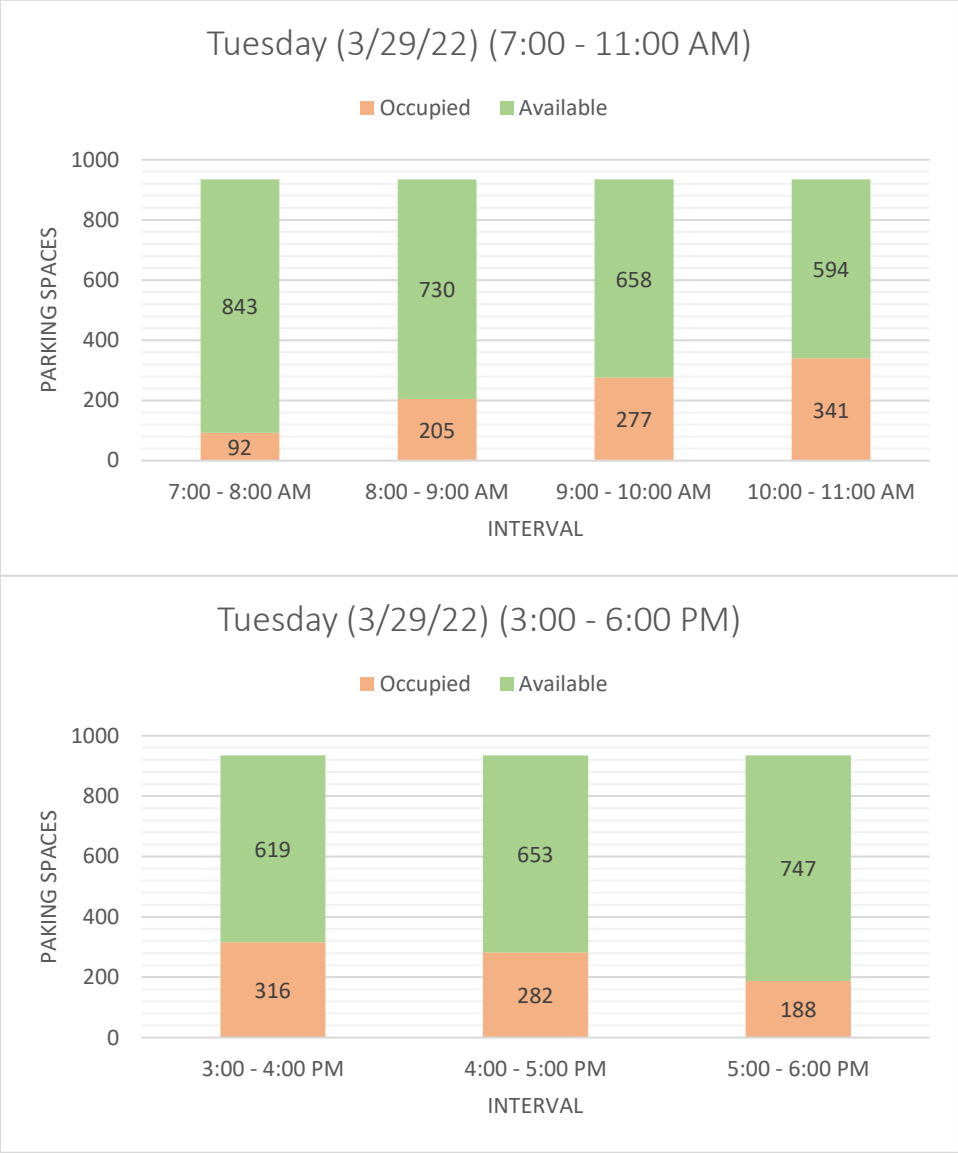

Figure 1: Pan American Building Existing Parking Demand

Table 3 summarizes the existing parking demand and shows that a maximum of 341 and 316 parking spaces were occupied during the AM and PM study periods respectively. Based on the parking accumulation data collected, there is currently a significant surplus of parking spaces on the property. The peak parking ratio (number of parked vehicles /1,000 ft^2 of building area) for the Tuesday peak is 1.29 and 1.20 for the AM and PM study periods respectively.

Table 3: Existing Parking Demand

	AM	PM
Total Parking Spaces	935/621[1]	935/621[1]
Peak Parking Demand	341	316
Peak Parking Occupancy (%)	37%/55%	34%/51%
Peak Period Parking Surplus	594/280	619/305

[1]Existing parking capacity / Proposed parking capacity

With the removal of the parking lot on the north side of the Pan American Building, and the reduced parking available, the existing peak parking numbers observed would result in the parkin lot being approximately 55% and 51% full under AM and PM peak demand hours respectively, which is also summarized in **Table 3**.

TRIP GENERATION

An additional method to test the adequacy of the proposed parking for the Pan American Building complex used considered the trips generated on an hourly basis and identifying the highest number of vehicles on site during a weekday period. To conduct this analysis, the number of daily trips generated by the Pan American Building was estimated using information provided in the Institute of Transportation Engineers *Trip Generation Manual* (11th Edition). A Summary of the Daily Trips for a 263.67 ksf "General Office Building" is provided in **Table 4**.

Table 4: Daily Trip Generation Characteristics for Pan American Building

Land Use (ITE 710 General Office Building)	Variable	Independent Variable	Average Rate (Weekday)
Equation/Rates			
Pan American Building	1,000 ft² GFA	263.67 ksf	10.84
Trips Generated			
Daily Trips	Entering / Exiting	Daily Entering Trips	Daily Exiting Trips
2858	50% / 50%	1429	1429

These daily trips were then distributed on an hourly basis using hourly variation information for this type of land use provided in the ITE *Trip Generation Manual* (11th Edition), which is provided as an attachment to this letter. The hourly distribution percentages by hour were then applied to the totally number of daily trips (Table 4) to obtain the number of vehicles entering and exiting the development of an hourly basis. The resulting difference in inbound and outbound trips were then used to approximate the number of parking spaces occupied, assuming no parking spaces were occupied when the building is opened. **Table 5** summarizes the resulting parking spaces occupied using this methodology.

Table 5: Parking Demand Using Trip Generation Estimates

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use							
Source: ITE *Trip Generation Manual*, 11th Edition							
Land Use Code	710						
Land Use	General Office Building						
Setting	General Urban/Suburban						
Time Period	Weekday						
# Data Sites	11			Daily Vehicles - Pan American Building Complex			
	% of 24-Hour Vehicle Trips			Daily Total	Entering Vehicles	Exiting Vehicles	Spaces Occupied
Time	Total	Entering	Exiting	2858	1429	1429	
12:00 - 1:00 AM	0.1%	0.2%	0.1%	4	3	1	2
1:00 - 2:00 AM	0.0%	0.0%	0.1%	1	0	1	1
2:00 - 3:00 AM	0.0%	0.0%	0.0%	1	1	0	2
3:00 - 4:00 AM	0.1%	0.0%	0.1%	2	1	1	2
4:00 - 5:00 AM	0.2%	0.2%	0.2%	5	2	3	1
5:00 - 6:00 AM	0.3%	0.4%	0.1%	8	6	2	5
6:00 - 7:00 AM	2.6%	4.8%	0.5%	75	68	7	66
7:00 - 8:00 AM	7.8%	13.6%	2.0%	222	194	28	232
8:00 - 9:00 AM	8.9%	14.3%	3.4%	253	204	49	387
9:00 - 10:00 AM	5.3%	6.3%	4.4%	152	90	62	415
10:00 - 11:00 AM	5.7%	5.5%	6.0%	164	78	86	407
11:00 - 12:00 PM	8.1%	6.0%	10.3%	233	86	147	346
12:00 - 1:00 PM	10.2%	10.2%	10.1%	291	146	145	347
1:00 - 2:00 PM	7.8%	9.0%	6.6%	223	128	95	380
2:00 - 3:00 PM	7.4%	8.3%	6.5%	210	118	92	406
3:00 - 4:00 PM	7.8%	7.3%	8.4%	224	104	120	390
4:00 - 5:00 PM	10.3%	5.4%	15.2%	296	78	218	250
5:00 - 6:00 PM	9.9%	4.0%	15.8%	283	58	225	83
6:00 - 7:00 PM	2.1%	1.7%	2.6%	61	24	37	70
7:00 - 8:00 PM	1.6%	0.9%	2.3%	47	13	34	49
8:00 - 9:00 PM	1.0%	0.7%	1.3%	29	10	19	40
9:00 - 10:00 PM	1.1%	0.5%	1.6%	30	8	22	26
10:00 - 11:00 PM	1.2%	0.3%	2.1%	34	4	30	0
11:00 - 12:00 AM	0.3%	0.4%	0.2%	10	5	5	0

As seen by the highlighted cell in Table 5, the maximum number of parking spaces occupied is estimated to be 415 during the peak hour on a weekday using this methodology. With a total of 621 future parking spaces provided, approximately 33% of the parking spaces would be unoccupied.

CONCLUSIONS

Based on the results of this parking analysis:

- A total of 621 parking spaces will be provided for the Pan American Building after redevelopment of the north lot.
- While the number of parking spaces proposed to be provided falls below the City of Albuquerque's requirements (668 parking spaces):
    - The number of parking spaces observed under existing conditions would result in the proposed parking lot only being approximately 55% and 51% occupied under AM and PM peak demand hours respectively.
- Using trip generation data to estimate peak parking demand is predicted to result in the proposed parking only being approximately 67% full under peak demand (33% unoccupied).
- Based on the two (2) different methodologies applied in this study, a significant portion of the parking area would remain unoccupied for each of the methods applied.

Therefore, the amount of parking proposed to be provided for the Pan American Building (621 parking spaces) is projected to adequately accommodate the anticipated peak parking demand.

If you have any question regarding this study, please contact me at (505) 545-8459. We appreciate the opportunity to provide these services.

Sincerely,

Jonathon, Kruse,
Project Manager
Lee Engineering, LLC