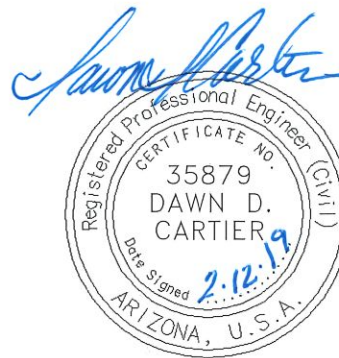




February 12, 2019

Paul Mood
Town Engineer
Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, Arizona 85253

Subject: *Comment Response Memorandum for Smoketree Resort Parking Study – Paradise Valley, Arizona*

Dear Mr. Mood:

CivTech has prepared this memo in order to address comments provided to Paradise Valley by a third party, Kimley-Horn and Associates, Inc. for the Smoketree Resort Parking Study that was previously submitted. CivTech has reviewed all of the comments and developed a response for each.

COMMENT RESPONSE

KH Comment 1: *Parking calculations should be based on full occupancy. Please include the 150 room keys that are proposed to be available.*

CivTech Response: Removing the 30 residential units (15 which will be able to be utilized by the hotel as optional rentals) and their 60 associated parking spaces provides a more conservative analysis of the parking for the resort. These 60 parking spaces will be reserved in the underground garage and will be gated from the remainder of the spaces leaving a total of 120 underground parking spaces and 76 surface parking spaces, a total of 196 spaces, to service the 120 guest rooms, 15 lock-off rental units and amenities. The shared parking model is being revised to consider 135 keys which includes the 120 guest rooms and 15 lock-off rental units. The 30 residences will not be considered within the shared model since they will have separate gated parking.

KH Comment 2: *Please provide documentation supporting the assumption of 50 square feet per every two seats in the meeting room.*

CivTech Response: The equivalent rate of 1 space per 50 square feet was first generated while working with previous Planning Commissioner Dolf Strom. Dolf was instrumental in shaping the methodology that has been carried through for all of the resort parking studies CivTech has completed. During the parking study preparation for both the Montelucia and the Hermosa Inn which were being prepared simultaneously, there was a large discussion about parking at both the planning commission and town council meetings. The question was raised by then commissioners and council members on the town's parking requirements, how they were established and how they compared to other jurisdictions. It was noted at that time that the parking requirements were greater than the surrounding area jurisdictions. The surrounding area jurisdictions were reviewed, the highest rate was taken, and then the rate was typically raised as part of the Town's requirements and guidelines. Working with Commissioner Strom, several ratio's, internal capture percentages and percentage by time of day values were applied.

Commissioner Strom spent weeks working with the consulting engineers to develop these values based on local data knowing that the Town's code would result in overparking but also not wanting to receive any neighborhood complaints about a lack of parking. An example of the surrounding area parking requirements in regards to the assumption of 50 square feet per every two seats in a meeting room is shown in the Table below. The final determination of 50 square feet was based on the utilization of banquet and meeting rooms in the Town. These rooms are primarily set with large round tables, even when being used for meetings.

Location	Land Use	Code Location	Parking Rate
City of Phoenix	Conference/Meeting	Section 4-603	1 space/50 sf
City of Scottsdale	Conference/Meeting	Table 9.103.A	1 space/50 sf
City of Tempe	Public Assembly - Entertainment	Section 702 C	1 space/125 sf

KH Comment 3: The Town code requirement for guest rooms is 1.2 spaces per unit. The parking study recommended using a rate of 1.05 based on an interpretation of ITE Parking Generation, 4th Edition land use 310 Hotel. The ITE code has a lot of variables against using the rate including:

- Old data
- Limited number of studies
- Average size of hotel is not similar to our facility
- Studies mostly conducted in California
- ITE 310 is based on the peak parking observed and not the supply. Based on a collection of data. So, the application of shared parking in addition to utilizing an ITE rate may not be appropriate. Kimley-Horn is recommending the Town not accept a rate less than the Town's code without supporting documentation or study of similar sites with similar land use data.

CivTech Response: Hotel was chosen to best represent The Smoketree Resort. According to the 5th Edition of Parking Generation, page 201, "A hotel is a place of lodging that provides sleeping accommodations and supporting facilities such as a full-service restaurant, cocktail lounge, meeting rooms, banquet room, and convention facilities. It typically provides a swimming pool or another recreational facility such as a fitness room. All suites hotel (Land Use 311), business hotel (Land Use 312), motel (Land Use 320), and resort hotel (Land Use 330) are related uses." Therefore, the rates published by ITE already include all of the uses that are expected to park separately using the Town's Code. The combined rate proposed for the Smoketree Resort (1.45 spaces/key traditional parking and 1.67 spaces/key for valet only) surpasses the recommended average values presented in Parking Generation and nearly meets the 85th percentile recommendation for a weekend which is higher than the rate for a weekday.

The current trends for parking, especially at hotels, is a reduction in rate. This is primarily attributable to the ease of ride hailing which can now be completed with a smartphone while tracking the driver which provides user reliability. This is evidenced in ITE's 5th Edition of Parking Generation which was just released in January of 2019. This version shows that the rates have decreased, especially during the weekday. On the weekend, which has less data points, the lower range of the rate decreased significantly. These rates still include older data which supported higher drive in rates for the Hotel. The City of Scottsdale is allowing the use of 0.8 parking spaces/key to account for the changing trend. When evaluating the final parking recommended for Smoketree, re-evaluated using the responses to these comments, an overall parking rate of 1.45 spaces/key is calculated. This falls within the mid-range of Resort Hotel (LUC 330) parking rates which range from 0.55-2.17 on a weekday and 0.64-2.11 on a weekend. The average rates for a Resort Hotel are 1.06 spaces/key and 0.73 spaces/key on a weekday and weekend, respectively. According to Parking Generation, "A resort hotel is similar to a hotel (Land Use 310) in that it provides sleeping accommodations, full service restaurants, cocktail lounges, retail shops, and guest services. The primary difference is that a resort hotel caters to the tourist and vacation industry, often providing a wide variety of recreational facilities/programs (golf courses, tennis courts, beach access, or other amenities) rather than convention and meeting business. Smoketree does not provide for golf or other recreational amenities on site, thus suggesting the Hotel (LUC 310) is the best data fit for the site.

KH Comment 4:

- *Include the third outdoor venue (Area B Promenade Venue #1) in the parking study analysis. The site plan shows four separate assembly areas. It seems inconsistent to have four separate areas and not assume they could be used independently. Provide documentation that supports the conclusion that the four venues cannot be rented separately or account for the separate venues in the parking analysis.*
- *Provide document provisions ensuring the level of interaction assumed for the meeting rooms.*

CivTech Response: Smoketree's intent is to utilize the area as analyzed in the CivTech parking analysis. The outdoor event space (Event Lawn Venues 1 and 2) will not be used simultaneously and only one or the other can be used in combination with the Pavillion. This therefore applies a 50 percent internal capture for both meetings and events since they cannot occur at the same time. Prohibition of using these areas simultaneous with the other areas may be provided in the stipulations for the project.

As mentioned above, the interaction (internal capture) assumed for the meeting space was determined using local information from several Paradise Valley hotel operators at the time the Montelucia and Hermosa Inn parking studies were being completed. Since both were hotels prior to redevelopment or upgrade, they had existing utilization. In addition, interviews were held with the other area resorts and data was again supplied by Marriot for the Ritz Carlton parking study. This effort was reviewed thoroughly by Commissioner Strom.

The interaction assumed for the meeting rooms is consistent with the interaction noted at other resorts and most specifically Mountain Shadows.

	Restaurant (Internal)	Restaurant (external)	Retail (Internal)	Retail (external)	Spa	Fitness	Meeting Space	Event Space
Smoketree	60%	50%	100%	50%	90%	90%	50%*	50%
Ritz Carlton	75%	75%	-	80%	90%	100%	50%	50%
Mountain Shadows	60%	50%	100%	50%	90%	90%	50%*	100%
Sanctuary	75%	75%	75%	75%	60%	-	10%	10%
Hermosa Inn	75%	25%	-	-	90%	90%	75%	75%

*The event space is shown with 100% internal capture to eliminate parking generated from the use of the outdoor event space. This is due to the restriction on using any of these spaces simultaneously. It is assumed that 50% of the people using the event space will be staying at the resort. The rate and parking space needs are captured by the parking generated by the Pavillions.

KH Comment 5: *There is an inconsistency in the fitness center internal capture assumption. Table 2 on Page 3 of 7 of the Parking Study shows a 90% internal capture reduction for the fitness center. The calculations included in the Appendix show a 100% internal capture reduction for the fitness center. Is the fitness center truly an amenity for guests or is this facility available to non-guests?*

CivTech Response: The fitness center will not be available to non-guests. However, to maintain some flexibility in the case that fitness can be used with the spa, the internal capture will be updated to 90% in the calculations.

KH Comment 6:

· For the restaurant uses, document your net calculation of building space for buildings E and F.
· Since these are standalone facilities, document how you determined internal capture versus external utilization. Provide additional description of restaurant, retail, and coffee facilities.

CivTech Response: These plans are very preliminary and there are not more detailed plans developed for the restaurant facilities – the parking study will be updated using the same assumptions once more detailed plans are developed. Please see the above table. It was assumed that the internal restaurant would be less likely to attract non-guests while the external restaurant would be more likely to attract non-guests. The rates chosen are similar to Mountain Shadows and provide for more utilization by off-site patrons than Ritz Carlton or the Sanctuary.

KH comment 7: *The beginning of the first sentence on Page 4 of 7 says “Per Paradise Valley’s SUP Guidelines,”. There have been CivTech assumptions and adjustments to Town SUP. Update this sentence accordingly.*

CivTech Response: This sentence will be updated.

KH Comment 8: *We are concerned that the 15% may not be achievable. Please provide a valet parking plan showing the ability to increase parking supply. The configuration of the underground parking and constraints of a single circulation aisle may limit the ability to significantly increase the available parking supply.*

CivTech Response: The garage plans are preliminary at this time. However, the town has utilized the 15% estimate for valet parking on Ritz Carlton, Mountain Shadows, Sanctuary, Hermosa Inn, and other resort projects. This has been a historical standard of utilization after showing that more than 20% can be achieved through valet plans originally requested. The town, understanding that final design plans are not typically completed at the time of zoning, allowed the inclusion of the 15% increase for valet instead of creating a valet plan for an un-designed location. A formal valet plan could be submitted once the garage plans and site plan are formalized. The addition of valet parking is likely to result in an additional 29 spaces.

KH Comment 9:

· In the shared parking calculations, removing employees is not relevant because the employees aren't there at night when the peak parking occurs. Hotel guest/rooms need the space for full capacity.

CivTech Response: The recommended parking shown in the study includes employees and bullet 4 under the Conclusions states the same parking trend as mentioned in Comment 9. The removal of employee calculation provides a number of parking spaces that can be utilized by patrons at other times of the day or if employees park off-site. The calculation provides guidance for the hotel operator since including employees in the hotel rate assumes that they park at the same peaks. As mentioned above, they park at different times, heavier during the weekdays and less on nights and weekends.

· Employee office parking is accounted for separately, but application of shared parking and hourly percentages based on ITE Parking Generation, 4th Edition Code 701, suburban office, is not an appropriate assumption. Hotel employees generally do not leave the resort during lunchtime or other times as suburban office employees may do. Resorts typically need those office positions to be held consistently throughout the day.

CivTech Response: The hourly variation used for employees suggests that 90% will arrive by 8AM, 100% by 9AM and will stay at 100% through 3PM. The rate then decreases to 90% at 4PM and then gradually lessens to 55% through 9PM. The shared parking percentages do account for the employees being on site all-day without a reduction for lunch, etc. No changes are proposed to the rates utilized in the evaluation.

· Retail hourly percentages are different than restaurant hourly percentages and should be separated in shared parking analysis.

CivTech Response: ITE does not provide hourly parking percentages for retail land uses that resemble the use of this location. The retail uses that could be most similar to this in scale would be Apparel Store which provides weekday percentages between the hours of 11AM and 8PM only. A proposed hourly distribution for the retail uses will be provided for review. Retail and restaurant use will be separated in the shared parking analysis after approval of the hourly variation for this small-scale retail. This will not result in a major revision to the parking recommendations. The retail parking, at 100% utilization, is limited to 3.33 spaces.

Thank you for consideration of these responses. We would like to set up a meeting to coordinate the changes to the parking study. Should you wish to discuss this information further, please contact me at (480) 659-4250.

Sincerely

CivTech

A handwritten signature in black ink, appearing to read "Dawn Cartier", with a long horizontal flourish extending to the right.

Dawn Cartier, PE, PTOE
President



November 20, 2018

Taylor Robinson
Geneva Holdings, LLC
3620 East Campbell Ave, Suite B
Phoenix, AZ 85018



RE: Parking Study for Smoketree Resort – Paradise Valley, Arizona

Dear Mr. Robinson:

CivTech has been retained to prepare a parking study for Smoketree Resort which will be redeveloped. The site is located at 7101 E. Lincoln Drive, Scottsdale, AZ 85253; south of Lincoln Drive and east of Quail Run Road. The project is the first step in revitalizing the resort, which is currently operating in its existing condition.

The project is submitting for a Special Use Permit (SUP) within The Town of Paradise Valley. This SUP anticipates the preparation of a parking study prepared and sealed by a licensed engineer that will consider, among other things, internal capture and time-of-day usage.

CivTech has completed a parking study to clarify any disparity between the number of spaces required and the number of spaces provided including a shared parking analysis. The results of this analysis are documented in this memorandum.

PROPOSED DEVELOPMENT

The proposed project will consist of a resort hotel and resort residential dwelling units with 180 total keys allocated as follows: 120 dedicated resort hotel rooms, 30 resort residential dwelling units, and 30 potential lock-off rooms. The 120 dedicated hotel rooms will be considered "hotel keys" under the Special Use Permit. Although the 120 dedicated hotel rooms and 30 potential lock-off rooms indicate that up to 150 keys could be available, the resort will not rent more than 120 keys simultaneously. The project also includes a standalone retail market restaurant and the resort hotel will include fitness and event/meeting amenities. The proposed project will provide 180 parking spaces, not including the dedicated parking spaces for the resort residential dwelling units and potential lock-off rooms. The resort residential and potential lock-off rooms will have their own dedicated 60 parking spaces. An exhibit illustrating the provided parking is attached to the letter statement.

PARADISE VALLEY PARKING REQUIREMENTS

The Town of Paradise Valley provides for parking ratios in their Special Use Permit Guidelines. **Table 1** summarizes the parking ratio requirements for each component of a resort hotel.

Table 1: Parking Requirements per the Town SUP Guidelines

SUP	Category	Parking Requirement
i.	Each Hotel Key	1.2 spaces
ii.	Each dwelling unit*	2 spaces
iii.	Restaurant	1 space per 50 SF of net dining area
iv.	Meeting Rooms/Auditoriums/Group Assembly	1 space per two seats of public area (assumed to be 50 square feet)
v.	Retail	1 space per 300 SF of net sales area
vi-a.	Office	1 space per 300 SF of net occupied space
vi-b.	Service Establishment/Spa/Fitness/Sales Establishments	1 space per 300 SF of net occupied space

*A dwelling unit is any Resort Unit that is not a Hotel Key.

GUEST ROOM PARKING RATE

The location of the Smoketree Resort is more urban in nature than many other resorts located in the Town. The Resort is located in close proximity to all of the commercial uses on the corners of Scottsdale Road and Lincoln Drive. Bus Route 72 provides access north and south on Scottsdale Road connecting to location such as medical, shopping (Kierland, Scottsdale Quarter, Scottsdale Fashion Square, education (Arizona State University, Sky Song), and other entertainment uses. Route 72 is available every 20 minutes during the weekday from 4 AM until 12 PM. On the weekend, Route 72 is available from 5 AM until 11 PM every 30 minutes. This accessibility allows other options for transportation beyond the use of a vehicle. A reduced parking rate of 1.05 spaces per key is being considered for the guest rooms associated with the Smoketree Resort. Employee parking accounts for 0.25 spaces per room while 0.80 spaces per room are considered for the guest parking.

Justification for the lower rate can be found in the Institute of Transportation Engineering's (ITE) *Parking Generation* which more closely resembles the parking need experienced in the downtown area today. ITE Land Use Code, 310, Hotel, shows a range of rates from 0.75-1.02 vehicles per room during the weekday with a 95 percent confidence interval. The study includes data from both suburban locations (12 study sites) and urban locations (5 total sites for weekday data but only two considered for the overall data compilation due to lack of information). The data was separated into Suburban parking rates and Urban parking rates but no data plot was provided for the urban rates "due to disjointed data sets with counts spread over several discontinuous time periods". (page 73, ITE Parking Generation, 4th Edition). It is assumed that the higher rates of the confidence interval more closely match the parking requirements in the Smoketree Resort area. Therefore, a rate of 1.05 parking spaces per room is proposed.

INTERNAL CAPTURE – PARKING UTILIZATION

The determination of parking requirements for a resort should also consider the utilization of many uses within the resort by the same patron staying in the resort. To consider this, parking required for each use is prorated by assigning a percentage indicating the overlap from guests already staying within the resort (“onsite demand”) vs. drawing new trips (vehicles) from non-guests (“offsite demand”). All parking for guest rooms and employees were determined to be completely “off-site”. Parking generated by all other uses was assumed to be used by Resort occupants (“on-site”) and non-Resort occupants (“off-site”). Therefore, overlap percentages were applied to these uses to account for the “on-site” occupants who will already be parked as part of the resort guest room rate or within the Smoketree Resort Residential units. This occurrence is known as internal capture. **Table 2** summarizes the internal capture reduction for each use based on conversation with the developer and internal capture rates applied at other resorts within the Town.

Table 2: Internal Capture Reduction

SUP	Category	Internal Capture Reduction
i.	Guest unit	0%
ii.	Dwelling unit	0%
iii.	Restaurant-separate building	60%
iv.	Meeting Rooms	50%
v.	Retail-associated with Resort Hotel	100%
v.	Retail - separate building	50%
vi-a.	Office/Service Area-Employee	0%
vi-b.	Office/Service Area-Public	100%
vi-c.	Office/Service Area-Fitness	90%

A detailed summary of the parking demand based on the requirements within the Town’s Special Use Permit Guidelines and the applied internal capture for each use is shown in the Attachments. **Table 3** summarizes the parking demand per land use.

Table 3: Parking Demand Summary per Town of PV SUP Guidelines

Category	Parking Demand with Internal Capture Reduction
Resort Residences	60.00
Resort Guestrooms ⁽¹⁾	126.00
Resort Employee Office	3.33
Resort Meeting/Banquet Space	50.00
Resort Food & Beverage	16.80
Resort Fitness	0.00
Resort Retail	8.33
TOTAL	265

(1) Rate considers 0.25 spaces/key for employees and 0.80 spaces/key for guests

Per Paradise Valley's SUP Guidelines, the proposed Smoketree resort has a total parking demand of 265 parking spaces. This parking demand does not account for shared parking. A shared parking analysis has been conducted and is described in the following section. The Resort Residences will have their own dedicated 60 parking spaces, and therefore are not included in the shared parking analysis. Therefore 205 parking spaces are required for the resort operation prior to the application of shared parking.

SHARED PARKING ANALYSIS

For projects with a variety of land uses, the parking demand for each land use would peak at different hours. Therefore, the actual number of spaces needed at a given hour is less than cumulative parking demand. *Shared Parking* Urban Land Institute [ULI] describes shared

"Shared parking is defined as a parking space that can be used to serve two or more individual land uses without conflict or encroachment. The opportunity to implement shared parking is the result of two conditions:

- Variations in the peak accumulation of parked vehicles as the result of different activity patterns of adjacent or nearby land uses (by hour, by day, by season)
- Relationships among land use activities that result in people's attraction to two or more land uses on a single auto trip to a given area or development"

Parking hourly percentages have been established for the weekday and weekend for the different land uses within the proposed Smoketree Resort project. *ITE Parking Generation* manual is the primary source for the hourly percentages. Hourly percentages from *ITE Parking Generation, 4th Edition* were utilized when available. Other sources were utilized for the hotel restaurant and conference/meeting space, since *ITE Parking Generation, 4th Edition* does not provide hourly percentages for these specific uses. The sources utilized for the hourly percentages in the shared parking model are summarized in **Table 4**.

Table 4: Hourly Percentages utilized for the Shared Parking Model

Land Use	Source for Hourly Percentages
Resort Guest Rooms	Hourly percentages are from <i>ITE Parking Generation, 4th Edition</i> for ITE Code 310 (Hotel, Suburban).
Resort Employee/ Office	Hourly percentages are from <i>ITE Parking Generation, 4th Edition</i> for ITE Code 701 (Office, Weekday).
Off-site Restaurant	Hourly percentages are from <i>ITE Parking Generation, 4th Edition</i> for ITE Code 932 (High-Turnover Sit-Down Restaurant, Family Restaurant)
Resort Meetings/Conference	<i>ITE Parking Generation, 4th Edition</i> does not provide hourly percentages for conference/meeting space. Hourly percentages from <i>Urban Land Institute's Shared Parking, 2nd Edition</i> for Hotel Conference/Banquet were utilized.
Resort Fitness	Hourly percentages are from <i>ITE Parking Generation, 4th Edition</i> for ITE Code 492 (Health/Fitness Club).
Resort Employees (when subtracting from parking demand)	Percentages from <i>Urban Land Institute's Shared Parking, 2nd Edition</i> for Hotel Employee were utilized.

Detailed worksheets with the shared parking analyses for the weekday and weekend are included as attachments to this letter statement.

The proposed project is determining the amount of parking necessary to support their uses. While the current plan indicates there will be 180 parking spaces available, there is some flexibility in the plan to provide more spaces if necessary. There is also an option to share parking with other adjacent uses that may not need parking when the resort reaches its peak demand. The resort residential will have its own dedicated 60 parking spaces, and therefore is not included in the shared parking analysis.

Per the analysis, the peak parking demand on a weekday is estimated to be 174 spaces at 9:00 PM, resulting in a surplus of 6 parking spaces. The peak parking demand on the weekend is estimated to be 172 at 9:00 PM, resulting in a surplus of 8 parking spaces.

An increase of 15 percent may be applied to the available parking when providing valet services. Before applying the 15 percent increase, the employee parking was subtracted from the hourly traffic demand assuming that employees would not park via valet. Per *ULI's Shared Parking*, the recommended parking ratio for employees is 0.25 spaces per room on weekdays and 0.18 spaces per room on weekends. The 0.25 ratio results in 30 designated employee parking spaces. Thirty employee parking spaces were applied for the weekday and weekend analyses. The hourly percentages in *ULI's Shared Parking* were applied to distribute the employee parking and subtract them from the overall demand in the shared parking analysis.

The employee parking for the resort peaks during the day on a weekday and is less during the evening and on a weekend. Therefore, 30 parking spaces were subtracted from the available parking spaces from 8 AM to 5 PM resulting in 150 parking spaces available for non-employees. Based on the hotel employee hourly percentages, the evening peak employee parking is 18 parking spaces. As a result, 18 parking spaces were designated for employees during the evening and early morning hours resulting in 162 parking spaces available for non-employees. Valet parking allows for parking efficiency therefore the 150 and 162 traditional parking spaces available for non-employees in a no valet scenario would equate to 172 and 186 available parking spaces for non-employees in a valet only scenario.

Once the employee parking which was removed from the initial calculation is added back in, there are a total of 202 available parking spaces between 8 AM and 5 PM and 204 available parking spaces between the hours of 6 PM and midnight in the valet only scenario.

With a valet service, there would be a surplus of 28 parking spaces at the resorts peak demand on a weekday and a surplus of 32 parking spaces at 9:00 PM during the weekend.

HOTEL OCCUPANCY HISTORY

Data compiled from Smith Research Travel for Paradise Valley hotels include historical occupancy rates from 2009 to May 2015. A table with the data is included as an attachment. Per the table, the maximum occupancy occurred in March 2013 and was 92.7%. March is historically the highest month with an average of 86.9% over the 7 years of data. The data also include average occupancy rates per the day of week. February and March are the only months that had a day of week average occupancy greater than 90%. In February, it was only on Wednesday (91%). March had average occupancies of 91.6%, 94.0%, and 92.0% on Wednesday, Thursday and Saturday respectively. Therefore, the occupancy on the remaining days of the year is expected to be less than 90% with a 61% average occupancy during the

summer months (June through September). The shared parking analysis is based on 100% occupancy, and therefore represents the worst-case scenario.

PARKING TRENDS – DRIVE IN RATE

Many travelers to resorts are opting to use ride services such as Uber and Lyft in addition to Taxi's. Ride hailing services have become more predictable and easier to use. As a greater shift in personal travel is switching to ride hailing, the need for parking spaces at retail, hotel, and other venues is decreasing. While there is no specific rate for the number of travelers which choose ride hailing, most resorts suggest that it could be as high as 30-40 percent. Data collected at the Biltmore Resort suggests that 40 percent of their patrons arrive via ride hailing services. Just over 25 percent of the patrons of the Phoenician Resort arrive via ride hailing services. Actual measurements for the number of patrons arriving for check-in at the existing Smoketree Resort will be collected and may be considered in future updates to this study.

CONCLUSIONS

- The proposed project will consist of a resort hotel with 120 key units, resort residential with 30 units, a restaurant in a stand along building and a retail/coffee area in a standalone building. The retail/coffee building is intended to service resort guests only. The resort hotel will include fitness and event/meeting amenities.
- On-site parking will provide 180 parking spaces, not including the resort residential. The resort residential is proposed with its own dedicated 60 parking spaces, and therefore was not included in the shared parking analysis. An exhibit illustrating the provided parking is attached.
- Per the parking requirements of the Town's SUP guidelines and the shared parking analysis, the peak parking demand on a weekday is estimated to be 174 spaces at 9:00 PM, resulting in a surplus of 6 parking spaces. The peak parking demand on the weekend is estimated to be 172 at 9:00 PM, resulting in a surplus of 8 parking spaces.
- An increase of 15 percent may be applied to the available parking when providing valet services. Before applying the 15 percent increase, the employee parking was subtracted from the hourly traffic demand assuming that employees would not park via valet. The employee parking for the resort peaks during the day on a weekday and is less during the evening and on a weekend. Therefore, 30 parking spaces were designated for employees from 8 AM to 5 PM resulting in 150 parking spaces designated for non-employees. Based on the hotel employee hourly percentages, the evening peak employee parking is 18 parking spaces. As a result, 18 parking spaces were designated for employees during the evening and early morning hours resulting in 162 parking spaces available for non-employees.
- Valet parking allows for parking efficiency therefore the 150 and 162 traditional parking spaces available for non-employees in a no valet scenario would equate to 172 and 186 available parking spaces for non-employees in a valet only scenario.
- With a valet service, there would be a surplus of 28 parking spaces at the resorts peak demand on a weekday and a surplus of 32 parking spaces at 9:00 PM during the weekend.
- The typical monthly and daily occupancies will not necessitate a 100% valet operation.

- The parking rate may be further modified once drive-in rate information has been collected at the existing (operational) Smoketree Resort. While the long-term trend indicates that fewer patrons will drive and park, opting for other ride hailing services, it is difficult to predict the percentage reduction in parking. The short-term parking trend can already be seen at existing resorts.
- Smoketree Resort is currently discussing options for parking the residential units with the Town of Paradise Valley. Updates to this parking study may be required to reflect parking rate changes and/or decisions about the inclusion of additional keys beyond the 120 evaluated herein.

Should you wish to discuss this information further, please contact me at (480) 659-4250.

Sincerely,

CivTech



Dawn D. Cartier, P.E., PTOE
Project Engineer

Attachments:

Parking Demand
Shared Parking Analysis
Parking Exhibit
Occupancy Data
ITE Parking Generation Rate - Hotel

Table 1 (excerpted from Town of Paradise Valley SUP Guidelines & ITE Parking Generation, 4th Ed.)

SUP	Category	Parking Requirement
i.	Each Hotel Key**	1.05 spaces
ii.	Each dwelling unit*	2 spaces
iii.	Restaurant	1 space per 50 SF of net dining area
iv.	Meeting Rooms/Auditoriums/Group Assembly	1 space per two seats of public area (assumed to be 50 square feet)
v.	Retail	1 space per 300 SF of net sales area
vi-a.	Office	1 space per 300 SF of net occupied space
vi-b.	Service Establishment/Spa/Fitness/Sales Establishments	1 space per 300 SF of net occupied space

*A dwelling unit is any Resort Unit that is not a Hotel Key.

** Revised parking rate providing 0.8 guest spaces/key and 0.25 employee spaces/key

Table 2 (excerpted from similar resorts in the Town of Paradise Valley)

SUP	Category	Internal Capture Reduction
i.	Guest unit	0%
ii.	Dwelling unit	0%
iii.	Restaurant-associated with Resort Hotel/Clubhouse	60%
iii.	Restaurant-Poolside Grill	75%
iii.	Restaurant-separate building	50%
iv.	Meeting Rooms	50%
iv.	Auditoriums	50%
iv.	Group Assembly	75%
v.	Retail-associated with Resort Hotel/Clubhouse	100%
v.	Retail - separate building	50%
vi-a.	Office/Service Area-Employee	0%
vi-b.	Office/Service Area-Public	100%
vi-c.	Office/Service Area-Spa/Fitness	90%

18-0550					11/15/2018			
SUP	CATEGORY	Parking Requirement ⁽¹⁾		Keys/Units	NET INTERIOR (SF)	COVERED EXTERIOR (SF)	Internal Capture ⁽²⁾	Net Parking Spaces after Internal Capture Reduction
Dwelling Units								
Apartments		Lockable Entries						
i	1 Bedroom Suite	2.0 spaces per	1 Unit	30		-	0%	60.00
Total				30				60.00
Hotel								
i	Guestrooms	1.05 spaces per	1 Unit	120		-	0%	126.00
Total				120				126.00
Administrative								
vi-a	Executive Office	1 spaces per	300 SF	-	250	-	0%	0.83
vi-a	HR/Accounting Office	1 spaces per	300 SF	-	250	-	0%	0.83
vi-a	Sales Office	1 spaces per	300 SF	-	250	-	0%	0.83
vi-b	Front Desk	1 spaces per	300 SF	-	250	-	100%	0.00
vi-a	Misc Office	1 spaces per	300 SF	-	250	-	0%	0.83
Total				0	1,250			3.33
Lobby/Public Areas								
x	Circulation	0 spaces per	0 SF	-	0	-	0%	0.00
x	Lobby	0 spaces per	0 SF	-	2,000	-	0%	0.00
x	Drop-Off	0 spaces per	0 SF	-		0	0%	0.00
x	Restrooms	0 spaces per	0 SF	-	0	-	0%	0.00
Total				0	2,000	0		0.00
Meeting Space								
x	Pre-Function Space	0 spaces per	0 SF	-	0	-		0.00
iv	Pavilion	1 spaces per	50 SF	-	5,000	-	50%	50.00
Total				0	5,000	0		50.00
Outdoor Event Space (100% capture rate, since it's used in conjunction with meeting space)								
iv	Event Lawn - Venue 1	1 spaces per	50 SF	-	5,000	0	100%	0.00
iv	Event Lawn - Venue 2	1 spaces per	50 SF	-	3,000	0	100%	0.00
Total				0	8,000	0		0.00
Back of House								
x	Valet/Bag+Bell	0 spaces per	0 SF	-	0	-	0%	0.00
x	Housekeeping	0 spaces per	0 SF	-	0	-	0%	0.00
x	Employee Area	0 spaces per	0 SF	-	0	-	0%	0.00
x	Receiving/Eng/Sec	0 spaces per	0 SF	-	0	-	0%	0.00
x	Loading dock	0 spaces per	0 SF	-	0	0	0%	0.00
Total				0	0	0		0.00
Stand Alone Food and Beverage								
iii	Restaurant	1 spaces per	50 SF	-	2,100	0	60%	16.80
Total				0	2,100	0		16.80
Retail Space								
v	Retail Space	1 spaces per	300 SF	-	0	-	100%	0.00
Total				0	0	0		0.00
Stand Along Retail/Coffee								
iii	Restaurant	1 spaces per	50 SF	-	500	-	50%	5.00
v	Retail	1 spaces per	300 SF	-	2,000	-	50%	3.33
Total				0	2,500	0		8.33
Fitness								
vi	Fitness	1 spaces per	150 SF	-	2,500	0.00	100%	0.00
Total				0	2,500	0		0.00
GRAND TOTAL								265

1. Parking Ratios from Table 1 of Town of Paradise Valley Ordinance & Revised rates per ITE Parking Generation

2. Internal Capture Percentages from other similar operating resorts

18-0550
PEAK USE SHARED PARKING CALCULATIONS-WEEKDAY

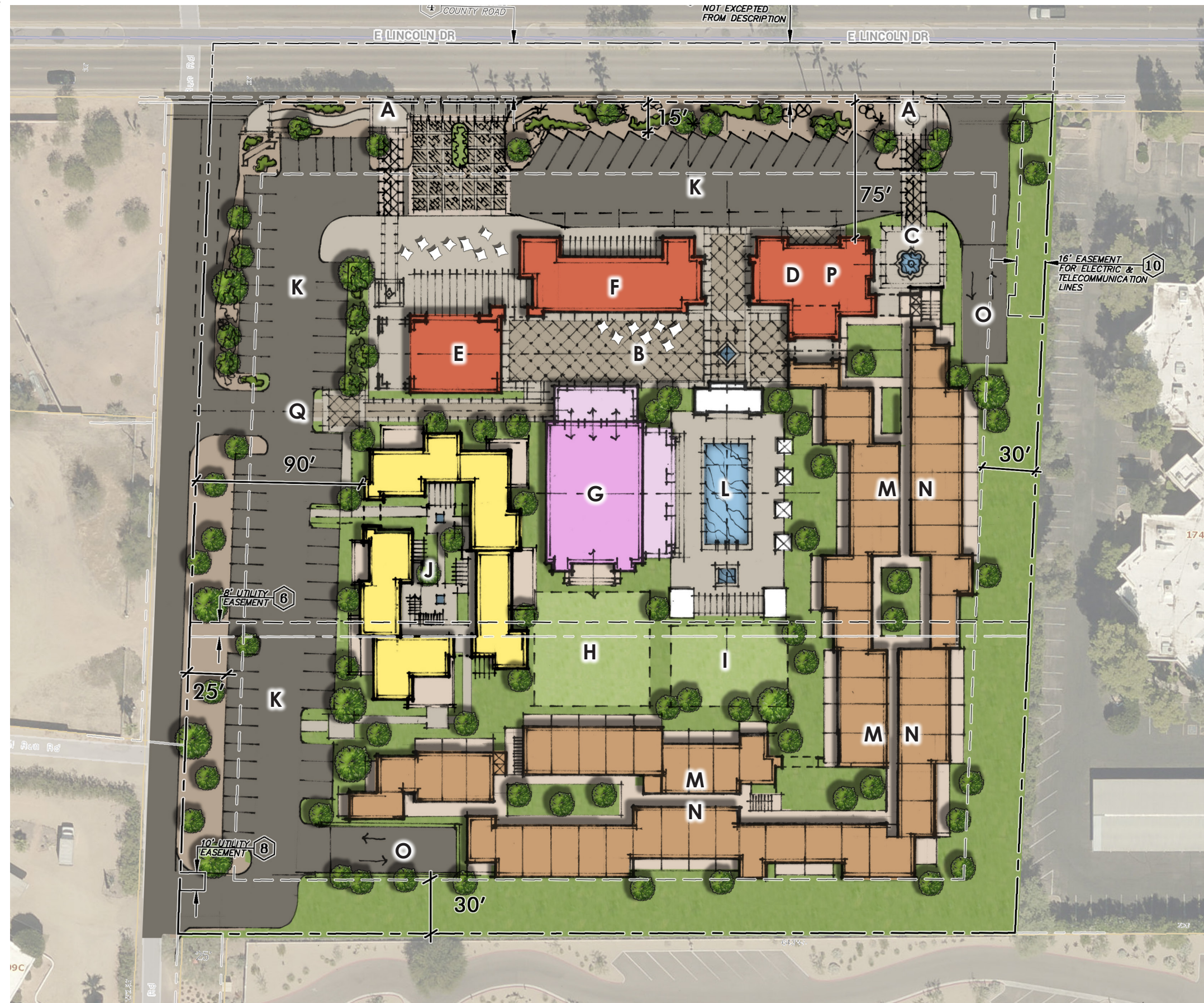
Land Use	Hotel Guest Rooms ⁽¹⁾		Hotel Restaurant ⁽²⁾		Hotel Employee/ Office ⁽³⁾		Off-site Restaurant & Retail ⁽⁴⁾		Hotel Meetings & Conference ⁽⁵⁾		Hotel Fitness ⁽⁶⁾		Removing Employees from Parking Demand ⁽⁷⁾ (0.25 spaces per room)		NET Parking Demand (with Emp)	NET Parking Demand (w.o. Emp)	Parking WITHOUT employees (30 of the 180 parking spaces are designated for employees from 8 AM- 5 PM, which is the peak employee period and 18 parking spaces are designated during other times)			Parking available at full occupancy and peak events, employees could self park 202 parking spaces. ⁽⁹⁾	Parking Surplus/ Shortage with Valet at full occupancy
Parking Demand	126.00		17.00		3.00		8.00		50.00		0.00		-30.00		204	174					
Time of Day	% of Peak	# of Spaces	% of Peak	# of Spaces	% of Peak	# of Spaces	% of Peak	# of Spaces	% of Peak	# of Spaces	% of Peak	# of Spaces	% of Peak	# of Spaces	PEAK Parking Demand (with Emp)	PEAK Parking Demand (w.o. Emp)	Parking available minus Emp ⁽⁸⁾	Parking with Valet w.o. Emp (15% increase)	Parking Surplus/ Shortage with Valet (w.o. Emp)		
6:00 AM	100%	126.00	0%	0.00	0%	0.00	26%	2.08	0%	0.00	20%	0.00	5%	-1.50	129	127	162	186	59	202	73
7:00 AM	96%	120.96	10%	1.70	59%	1.77	44%	3.52	0%	0.00	20%	0.00	30%	-9.00	128	119	162	186	67	202	74
8:00 AM	90%	113.40	30%	5.10	79%	2.37	57%	4.56	30%	15.00	20%	0.00	90%	-27.00	141	114	150	173	59	202	61
9:00 AM	87%	109.62	10%	1.70	95%	2.85	76%	6.08	60%	30.00	26%	0.00	90%	-27.00	151	124	150	173	49	202	51
10:00 AM	82%	103.32	10%	1.70	100%	3.00	85%	6.80	60%	30.00	51%	0.00	100%	-30.00	145	115	150	173	58	202	57
11:00 AM	77%	97.02	5%	0.85	98%	2.94	92%	7.36	60%	30.00	48%	0.00	100%	-30.00	139	109	150	173	64	202	63
12:00 PM	77%	97.02	100%	17.00	90%	2.70	100%	8.00	65%	32.50	42%	0.00	100%	-30.00	158	128	150	173	45	202	44
1:00 PM	75%	94.50	100%	17.00	77%	2.31	90%	7.20	65%	32.50	47%	0.00	100%	-30.00	154	124	150	173	49	202	48
2:00 PM	73%	91.98	33%	5.61	84%	2.52	53%	4.24	65%	32.50	38%	0.00	100%	-30.00	137	107	150	173	66	202	65
3:00 PM	70%	88.20	10%	1.70	81%	2.43	42%	3.36	65%	32.50	41%	0.00	100%	-30.00	129	99	150	173	74	202	73
4:00 PM	71%	89.46	10%	1.70	72%	2.16	42%	3.36	65%	32.50	61%	0.00	90%	-27.00	130	103	150	173	70	202	72
5:00 PM	70%	88.20	30%	5.10	46%	1.38	76%	6.08	100%	50.00	84%	0.00	75%	-22.50	151	129	150	173	44	202	51
6:00 PM	74%	93.24	55%	9.35	25%	0.75	83%	6.64	100%	50.00	91%	0.00	60%	-18.00	160	142	162	186	44	202	42
7:00 PM	75%	94.50	60%	10.20	0%	0.00	63%	5.04	100%	50.00	100%	0.00	55%	-16.50	160	144	162	186	42	202	42
8:00 PM	79%	99.54	70%	11.90	0%	0.00	66%	5.28	100%	50.00	50%	0.00	55%	-16.50	167	151	162	186	35	202	35
9:00 PM	85%	107.10	67%	11.39	0%	0.00	63%	5.04	100%	50.00	0%	0.00	55%	-16.50	174	158	162	186	28	202	28
10:00 PM	87%	109.62	60%	10.20	0%	0.00	48%	3.84	50%	25.00	0%	0.00	45%	-13.50	149	136	162	186	50	202	53
11:00 PM	97%	122.22	40%	6.80	0%	0.00	44%	3.52	0%	0.00	0%	0.00	45%	-13.50	133	120	162	186	66	202	69
MIDNIGHT	100%	126.00	30%	5.10	0%	0.00	0%	0.00	0%	0.00	0%	0.00	30%	-9.00	132	123	162	186	63	202	70
															174.00	158.00	28.00			28.00	

1. Hourly percentages are from *ITE Parking Generation, 4th Edition* for ITE Code 310 (Hotel, Weekday Suburban).
2. *ITE Parking Generation, 4th Edition* does not provide hourly percentages for a Hotel Restaurant. Hourly percentages from *Urban Land Institute's Shared Parking, 2nd Edition* for Hotel Restaurant/Lounge were utilized.
3. Hourly percentages are from *ITE Parking Generation, 4th Edition* for ITE Code 701 (Office, Weekday Suburban).
4. Hourly percentages are from *ITE Parking Generation, 4th Edition* for ITE Code 932 (High-Turnover Sit-Down Restaurant, Weekday at a Family Restaurant)
5. *ITE Parking Generation, 4th Edition* does not provide hourly percentages for conference/meeting space. Hourly percentages from *Urban Land Institute's Shared Parking, 2nd Edition* for Hotel Conference/Banquet were utilized.
6. Hourly percentages are from *ITE Parking Generation, 4th Edition* for ITE Code 492 (Health/Fitness Club, Weekday).
7. Hourly percentages from Urban Land Institute's Shared Parking, 2nd Edition for Hotel Employees were utilized.
8. 30 spaces are allotted for employees from 8-5 resulting in 150 spaces available (180-30=150). 18 spaces are allotted the other hours, resulting in 162 spaces available (180-18=162). Employees peak during the day on a weekday.
9. At full occupancy and peak event periods, employees could still self park. When applying a 15% increase to 150 park spaces and adding back self parking for employees, 202 parking spaces are available.

18-0550
PEAK USE SHARED PARKING CALCULATIONS-WEEKEND

Land Use	Hotel Guest Rooms ⁽¹⁾		Hotel Restaurant ⁽²⁾		Hotel Employee/ Office ⁽³⁾		Off-site Restaurant & Retail ⁽⁴⁾		Hotel Meetings & Conference ⁽⁵⁾		Hotel Fitness ⁽⁶⁾		Removing Employees from Parking Demand ⁽⁷⁾ (0.25 spaces per room)		NET Parking Demand (with Emp)	NET Parking Demand (w.o. Emp)	Parking WITHOUT employees (30 of the 180 parking spaces are designated for employees from 8 AM-5 PM, which is the peak employee period and 18 parking spaces are designated during other times)			Parking available at full occupancy and peak events, employees could self park 202 parking spaces. ⁽⁹⁾	Parking Surplus/ Shortage with Valet for Emp at full occupancy
Parking Demand	126.00		17.00		3.00		8.00		50.00		0.00		-30.00		204	174					
Time of Day	% of Peak	# of Spaces	% of Peak	# of Spaces	% of Peak	# of Spaces	% of Peak	# of Spaces	% of Peak	# of Spaces	% of Peak	# of Spaces	% of Peak	# of Spaces	PEAK Parking Demand (with Emp)	PEAK Parking Demand (w.o Emp)	Parking available minus Emp ⁽⁸⁾	Parking with Valet w.o Emp (15% increase)	Parking Surplus/ Shortage with Valet (w.o. Emp)		
6:00 AM	100%	126.00	0%	0.00	0%	0.00	20%	1.60	0%	0.00	0%	0.00	5%	-1.50	128	127	162	186	59	202	74
7:00 AM	96%	120.96	10%	1.70	59%	1.77	30%	2.40	0%	0.00	0%	0.00	30%	-9.00	127	118	162	186	68	202	75
8:00 AM	90%	113.40	30%	5.10	79%	2.37	51%	4.08	30%	15.00	76%	0.00	90%	-27.00	140	113	150	173	60	202	62
9:00 AM	87%	109.62	10%	1.70	95%	2.85	73%	5.84	60%	30.00	94%	0.00	90%	-27.00	151	124	150	173	49	202	51
10:00 AM	82%	103.32	10%	1.70	100%	3.00	94%	7.52	60%	30.00	95%	0.00	100%	-30.00	146	116	150	173	57	202	56
11:00 AM	77%	97.02	5%	0.85	98%	2.94	100%	8.00	60%	30.00	100%	0.00	100%	-30.00	139	109	150	173	64	202	63
12:00 PM	77%	97.02	100%	17.00	90%	2.70	93%	7.44	65%	32.50	87%	0.00	100%	-30.00	157	127	150	173	46	202	45
1:00 PM	75%	94.50	100%	17.00	77%	2.31	84%	6.72	65%	32.50	82%	0.00	100%	-30.00	154	124	150	173	49	202	48
2:00 PM	73%	91.98	33%	5.61	84%	2.52	63%	5.04	65%	32.50	78%	0.00	100%	-30.00	138	108	150	173	65	202	64
3:00 PM	70%	88.20	10%	1.70	81%	2.43	39%	3.12	65%	32.50	73%	0.00	100%	-30.00	128	98	150	173	75	202	74
4:00 PM	71%	89.46	10%	1.70	72%	2.16	48%	3.84	65%	32.50	77%	0.00	90%	-27.00	130	103	150	173	70	202	72
5:00 PM	70%	88.20	30%	5.10	46%	1.38	55%	4.40	100%	50.00	72%	0.00	75%	-22.50	150	127	150	173	46	202	52
6:00 PM	74%	93.24	55%	9.35	25%	0.75	63%	5.04	100%	50.00	68%	0.00	60%	-18.00	159	141	162	186	45	202	43
7:00 PM	75%	94.50	60%	10.20	0%	0.00	74%	5.92	100%	50.00	94%	0.00	55%	-16.50	161	145	162	186	41	202	41
8:00 PM	79%	99.54	70%	11.90	0%	0.00	55%	4.40	100%	50.00	0%	0.00	55%	-16.50	166	150	162	186	36	202	36
9:00 PM	85%	107.10	67%	11.39	0%	0.00	39%	3.12	100%	50.00	0%	0.00	55%	-16.50	172	156	162	186	30	202	30
10:00 PM	87%	109.62	60%	10.20	0%	0.00	40%	3.20	50%	25.00	0%	0.00	45%	-13.50	149	135	162	186	51	202	53
11:00 PM	97%	122.22	40%	6.80	0%	0.00	53%	4.24	0%	0.00	0%	0.00	45%	-13.50	134	120	162	186	66	202	68
MIDNIGHT	100%	126.00	30%	5.10	0%	0.00	0%	0.00	0%	0.00	0%	0.00	30%	-9.00	132	123	162	186	63	202	70
															172.00	156.00	150.00	30.00		30.00	

1. Hourly percentages are from *ITE Parking Generation, 4th Edition* for ITE Code 310 (Hotel, Weekday Suburban. Weekend data are not provided in ITE).
2. *ITE Parking Generation, 4th Edition* does not provide hourly percentages for a Hotel Restaurant. Hourly percentages from *Urban Land Institute's Shared Parking, 2nd Edition* for Hotel Restaurant/Lounge were utilized.
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9. At full occupancy and peak event periods, employees could still self park. When applying a 15% increase to 150 park spaces and adding back self parking for employees, 202 parking spaces are available.



PROGRAM

- A. Pedestrian Entry
- B. Promenade - Venue #1
- C. Hotel Entry Plaza
- D. Hotel Reception (2,000 sf.)
- E. Market (2,500 sf.)
- F. Restaurant / Retail (3,500 sf.)
- G. Pavilion (5,000 sf.)
- H. Event Lawn - Venue #2 (5,000 sf.)
- I. Event Lawn - Venue #3 (3,000 sf.)
- J. Resort Villas
- K. Surface Parking
- L. Hotel Pool
- M. Hotel Bedrooms (first 2 floors)
- N. Resort Residences (3rd floor)
- O. Underground parking access
- P. Administration (2nd floor)
- Q. Event Drop Off

HOTEL UNITS - 120 Units (60 per level)

- Connected building
- On first and second levels
- Hotel Room Area 51,000 sf.
- Building footprint = 40,000 sf (includes hallways, service and balconies)

RESORT RESIDENCES

VILLAS

- 10 units / 10,800 sf
- 1,200 sf. per Villa

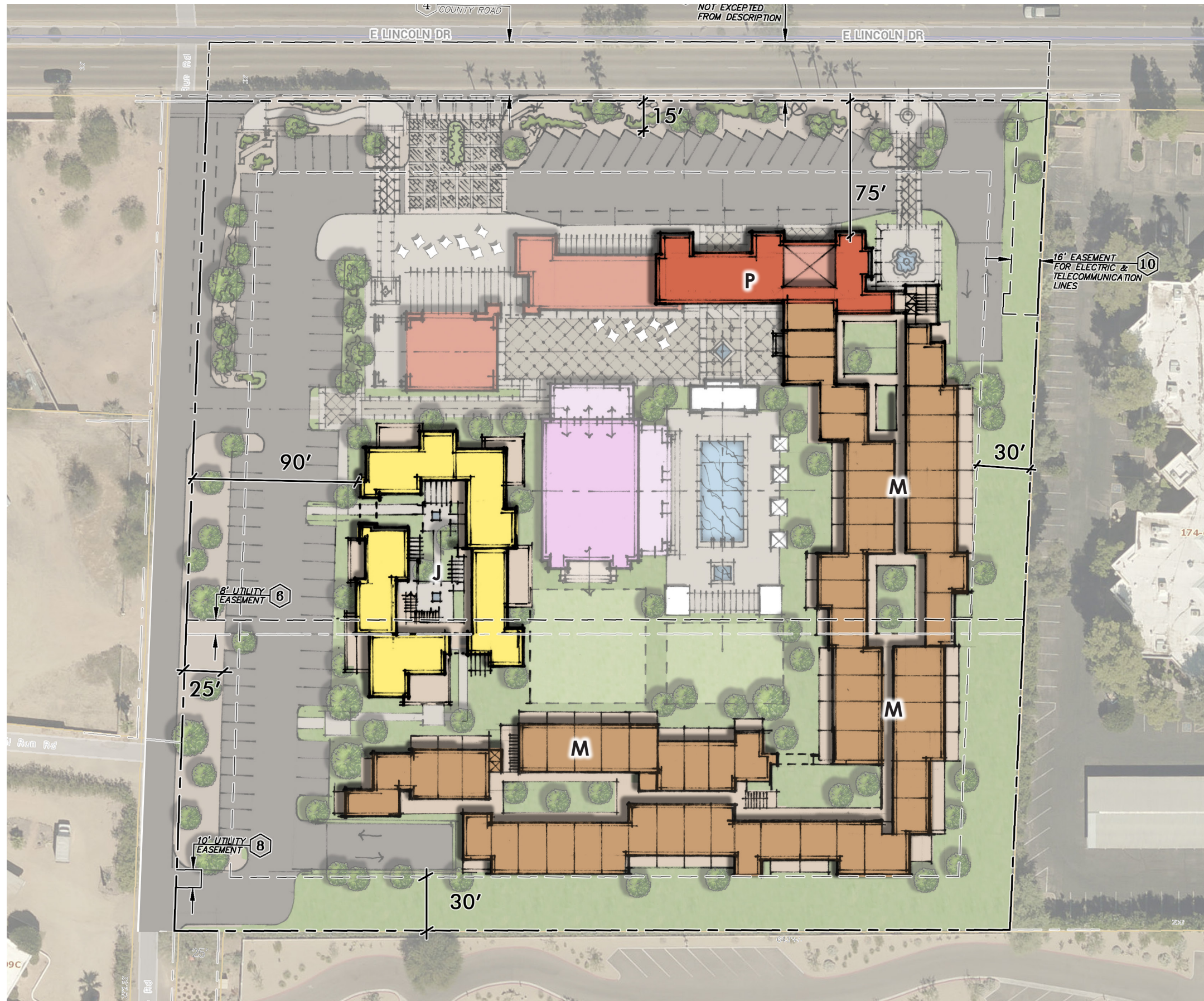
HOTEL TOP RESIDENCES

- 20 Units / 25,200 sf.
- 3rd Level of Hotel buildings
- 1,200 sf per Residence
- Exterior uncover parking

SURFACE PARKING = 83 Spaces

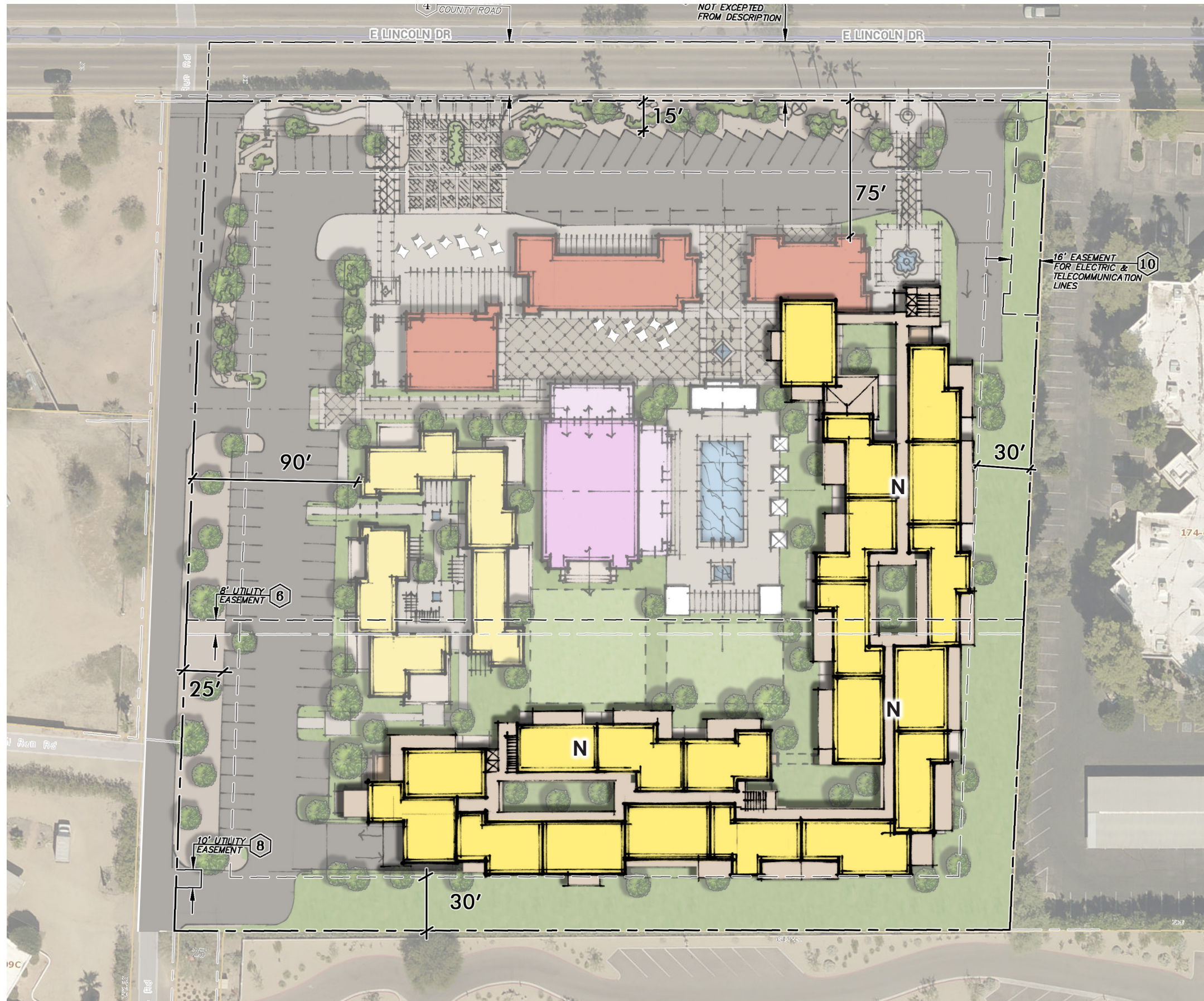


0' 25' 50' 100'



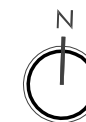
PROGRAM

- J. Resort Villas
- M. Hotel Bedrooms (first 2 floors)
- P. Administration (2nd floor)



PROGRAM

N. Resort Residences (3rd floor)



0' 25' 50' 100'

Smoketree Resort
Occupancy by Month and Day of Week

Occupancy (%) -- Paradise Valley Resorts per Smith Travel Research												
	January	February	March	April	May	June	July	August	September	October	November	December
2009	59.2	66.0	77.9	67.6	70.8	57.7	52.1	54.5	58.7	69.3	68.4	58.6
2010	74.4	80.9	88.0	79.3	71.4	66.4	51.6	53.8	61.4	74.9	75.3	54.2
2011	74.0	81.6	89.0	82.7	70.5	65.5	59.0	56.8	61.4	68.0	72.8	56.6
2012	74.2	82.7	90.2	75.6	69.6	68.0	54.2	70.2	61.6	74.2	67.6	56.7
2013	79.8	83.4	92.7	84.4	73.2	69.8	58.2	61.1	64.1	74.2	74.2	63.2
2014	69.1	82.0	83.0	76.8	72.7	65.9	63.0	66.8	65.8	73.8	69.3	60.7
2015	73.9	82.6	87.7	80.8	73.2							
Avg	72.1	79.9	86.9	78.2	71.7	65.5	56.4	60.6	62.2	72.4	71.3	58.3

Resort Parking	January	February	March	April	May	June	July	August	September	October	November	December
@ 100% Occupancy	220	220	220	220	220	220	220	220	220	220	220	220
w/ Driver Rate @ 50%	110	110	110	110	110	110	110	110	110	110	110	110
@ Avg. Occupancy	158	175	191	172	157	144	124	133	137	159	156	128
w/ Driver Rate @ 50%*	79	88	95	86	79	72	62	66	68	80	78	64

Occupancy (%) -- Paradise Valley Resorts per Smith Travel Research									
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total Month
Jun - 14	47.0	63.1	75.7	73.3	65.2	69.6	72.7		65.9
Jul - 14	46.1	59.3	64.5	62.2	61.6	70.9	76.1		63.0
Aug - 14	54.9	63.5	69.1	66.2	61.3	70.9	80.1		66.8
Sep - 14	55.6	65.5	70.9	69.5	65.5	63.1	68.9		65.8
Oct - 14	55.4	77.1	82.8	77.0	71.8	73.9	78.1		73.8
Nov - 14	48.5	63.3	68.5	79.3	78.7	79.3	72.1		69.3
Dec - 14	54.5	55.1	59.3	66.9	60.8	60.8	67.9		60.7
Jan - 15	55.4	70.3	81.7	87.5	80.0	72.1	70.0		73.9
Feb - 15	78.6	76.7	86.8	91.0	86.4	80.9	77.5		82.6
Mar - 15	79.1	84.0	88.7	91.6	94.0	87.3	92.1		87.7
Apr - 15	61.6	83.2	88.7	86.3	83.3	78.1	82.2		80.8
May - 15	64.9	69.8	77.3	72.5	67.9	77.7	81.1		73.2
Total Year	58.5	69.1	75.8	76.7	73.1	73.7	76.5		71.9

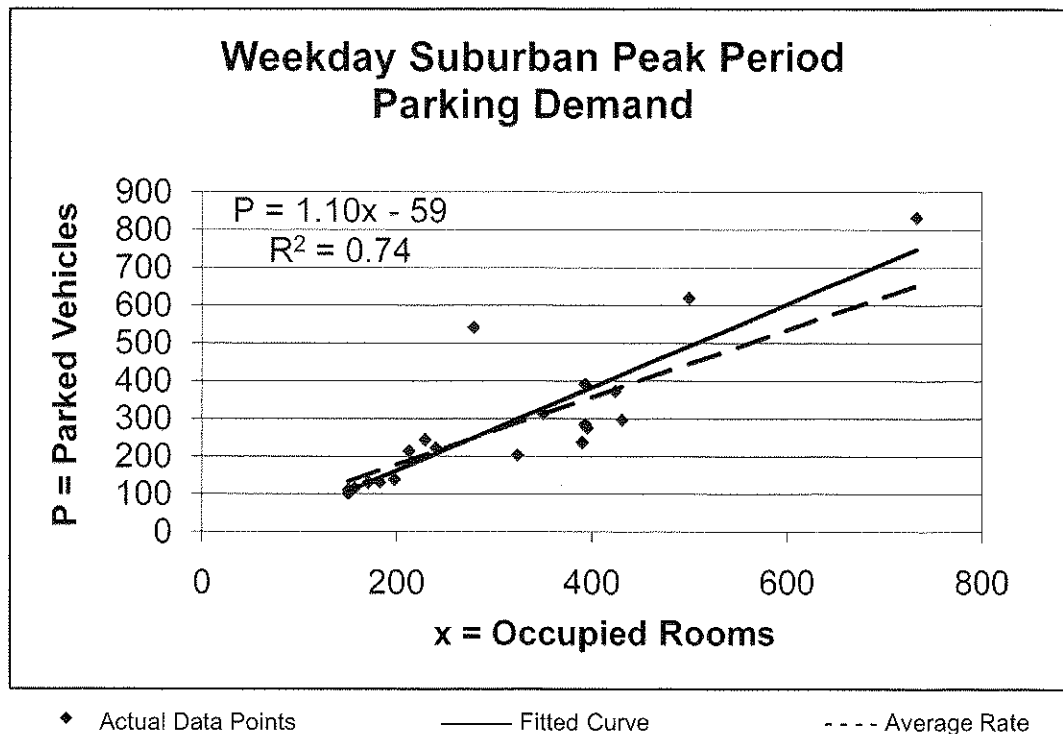
Resort Parking	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total Month
@ 100% Occupancy	220	220	220	220	220	220	220	220
w/ Driver Rate @ 50%	110	110	110	110	110	110	110	110
@ Avg. Occupancy	128	152	166	168	161	162	168	158
w/ Driver Rate @ 50%*	64	76	83	84	80	81	84	79

* The Sanctuary averages a 50% drive-in rate of occupied rooms.

Land Use: 310 Hotel

Average Peak Period Parking Demand vs. Occupied Rooms On a: Weekday Location: Suburban

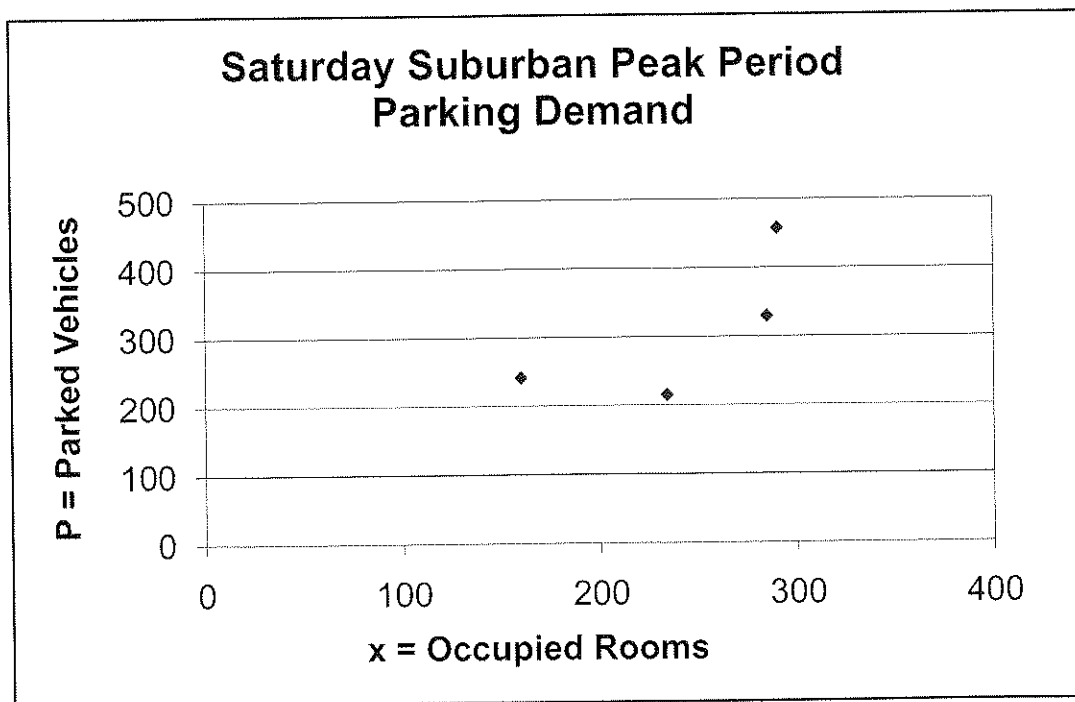
Statistic	Peak Period Demand
Peak Period	12:00–1:00 p.m.; 7:00–10:00 p.m.; 11:00 p.m.–5:00 a.m.
Number of Study Sites	20
Average Size of Study Sites	315 occupied rooms
Average Peak Period Parking Demand	0.89 vehicles per occupied room
Standard Deviation	0.31
Coefficient of Variation	35%
95% Confidence Interval	0.75–1.02 vehicles per occupied room
Range	0.61–1.94 vehicles per occupied room
85th Percentile	1.08 vehicles per occupied room
33rd Percentile	0.72 vehicles per occupied room



Land Use: 310 Hotel

Average Peak Period Parking Demand vs. Occupied Rooms
On a: Saturday
Location: Suburban

Statistic	Peak Period Demand
Peak Period	7:00–8:00 p.m.; 9:00–10:00 p.m.
Number of Study Sites	4
Average Size of Study Sites	242 occupied rooms
Average Peak Period Parking Demand	1.20 vehicles per occupied room
Standard Deviation	0.31
Coefficient of Variation	26%
Range	0.92–1.57 vehicles per occupied room
85th Percentile	1.54 vehicles per occupied room
33rd Percentile	1.15 vehicles per occupied room



♦ Actual Data Points