



Memo: Power Food Park – Parking Analysis

Date: 05/27/21
TO: City of Mesa
FROM: Eric Maceyko, P.E., PTOE
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INTRODUCTION

A planned food truck park development, named Power Food Park, is being proposed on the east side of Power Road south of Hobart Street with a portion also extending south of Halifax Drive within the City of Mesa, Arizona. The site sits on approximately 6 acres and is planned to contain up to a maximum of 20 food trucks. The proposed site will also provide up to 181 parking spaces, including two main parking areas and an additional overflow area. Several different seating areas are planned including fire pit / cabana areas and picnic areas with tables and shading. The sum of all the seating areas are estimated to provide a total of 432 seats.

EPS Group has been retained to conduct a Parking Analysis for the proposed development to evaluate the anticipated parking demand and determine the recommended number of parking spaces to provide adequate operation.

LOCATION & SITE PLAN

Figure 1 provides a map of the proposed site location and local vicinity. The existing site is undeveloped and is primarily served by Power Road. Both Hobart Street and Halifax Drive (local roads) serve the existing site with full access connections to Power Road. No through access is available to the east. The existing circulation and access will remain with the proposed development.

Figure 2 provides the proposed development site plan. The site is currently undeveloped but is being used as a food truck park. The same maximum number of food trucks that are currently being operated is anticipated to remain unchanged with the proposed development. There will be three new driveways constructed on Hobart Street and two new driveways constructed on Halifax Avenue.

It should be noted that typical operation will include approximately 18 to 20 trucks. Therefore, the maximum number of 20 food trucks is utilized in this analysis.

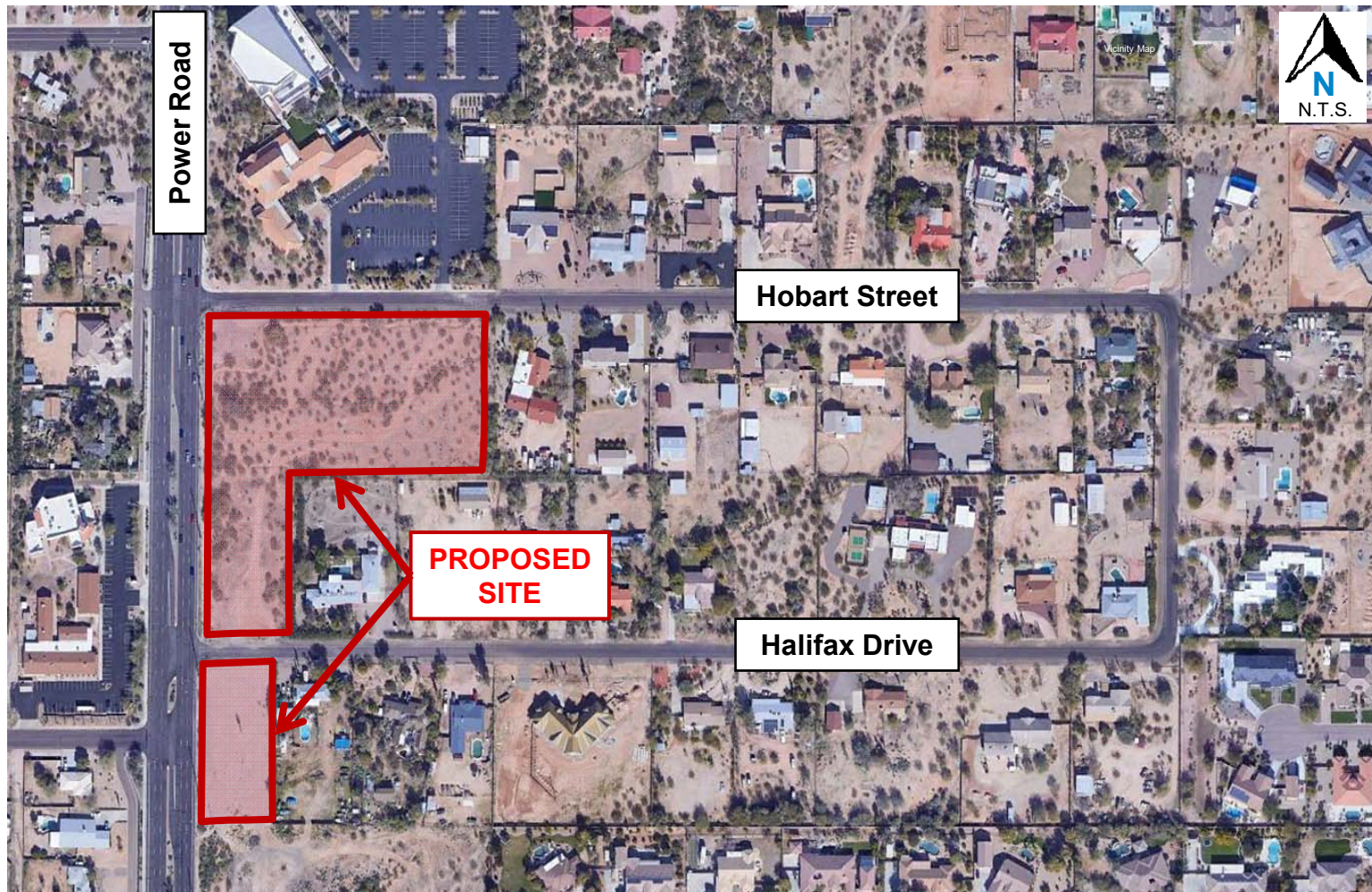


Figure 1: Proposed Site Location

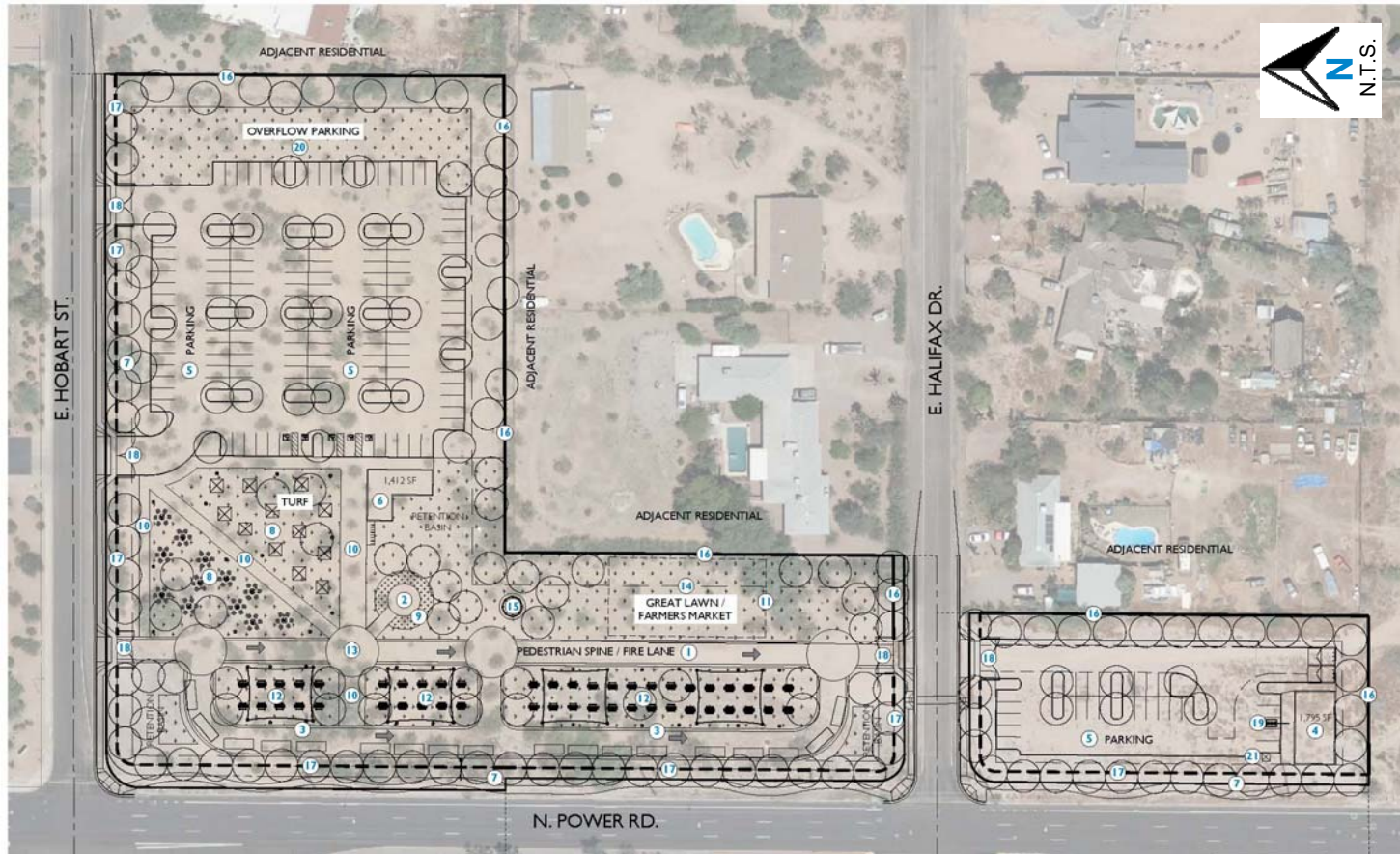


Figure 2: Proposed Site Plan

PARKING ANALYSIS

As this type of development is a relatively new type of use, there are few specific standards readily available. Therefore, assumptions and the use of standards for similar types of uses were employed in this analysis.

In order to apply the typical parking criteria described below, the estimated square footage was determined. This is usually calculated as a mixture of indoor and outdoor seating area. Each food truck is estimated to have 100 square feet of area. Therefore, for a maximum of 20 food trucks, the total indoor square footage is estimated to be 2,000 square feet. Since the outdoor seating areas are scattered around the site and not defined by any structures or boundaries, the seating area was roughly estimated by measuring the gross area around each cluster of dedicated seating area. These areas are denoted with the numbers 8 and 12 on **Figure 2**. The total estimated seating area for these locations is approximately 30,000 square feet.

Parking analysis was conducted utilizing three (3) sources suitable for the proposed food park development including:

- City of Mesa Zoning Ordinance
- *Parking Generation*, 5th edition by Institute of Transportation Engineers (ITE)
- *Site Specific Data*

The following sections detail the analysis results from each source.

City of Mesa Zoning Ordinance:

Per *Section 11-32-3: PARKING SPACES REQUIRED*, criteria for required parking is provided for a multitude of different land uses. As provided in *Table 11-32-3.A: Required Parking Spaces By Use*, the following criteria is the most applicable to the proposed development:

- Eating and Drinking Establishments (no drive through window) – 1 space per 75 square feet for indoor area, and 1 space per 200 square feet for outdoor seating area

Based on the above criteria, a total of 177 parking spaces are required. The various parking areas on the site plan have been designed to account for all 177 total parking spaces plus a 4-space surplus.

ITE Parking Generation:

In 2019, the Institute of Transportation Engineers (ITE) published the fifth edition of *Parking Generation*. This document provides parking supply and demand data for 121 separate land use categories. The data provides hourly counts of parked vehicles at land uses throughout North America that can be utilized to predict future parking demand at similar land uses. This resource contains accurate parking demand data and each individual hour of the day contains a unique value.

There is considerable data for restaurant developments. However, there is no specific land use code for a food truck park. The most appropriate land use code provided by ITE is Land Use Code 930 – Fast Casual Restaurant. Since less data is provided for this land use code and the only independent variable available is 1,000 Square Feet of Gross Floor Area (TGSF), Land Use Code 933 – Fast-Food Restaurant without Drive-Through Window was also utilized. This land use code has considerably more data and also provides the additional independent variable Seats.

The provided average rates, equations and 85th percentile rates were all utilized to estimate peak parking demand. **Table 1** provides a summary of the *ITE Parking Generation* calculation results for each use and independent variable.

Table 1: ITE Parking Generation Results

LAND USE	AMOUNT	PARKING REQUIREMENT	
		RATE	SPACES
ITE LUC 930 (Fast Casual) - Average Rate	2 TGSF	9.93	20
ITE LUC 930 (Fast Casual) - Equation	2 TGSF	10.46	21
ITE LUC 930 (Fast Casual) - 85th Percentile	2 TGSF	11.03	22
ITE LUC 933 (Fast Food) - Average Rate	2 TGSF	9.91	20
ITE LUC 933 (Fast Food) - Equation	2 TGSF	9.65	19
ITE LUC 933 (Fast Food) - 85th Percentile	2 TGSF	16.60	33
ITE LUC 933 (Fast Food) - Average Rate	432 Seats	0.25	108
ITE LUC 933 (Fast Food) - Equation	432 Seats	0.24	102
ITE LUC 933 (Fast Food) - 85th Percentile	432 Seats	0.37	160
MAXIMUM TOTAL			160

As can be seen in the above table, the calculations based on TGSF are unreasonably low. ITE recommends using the number of seats for calculating parking demand when there is significant outdoor seating. Therefore, the estimated maximum peak parking demand is 160 parked vehicles. Since this number represents the maximum demand, it is appropriate to provide a surplus of parking to minimize time spent searching for a vacant parking space and walking to / from the development. The proposed development is planning to provide a surplus of 21 spaces or 12%.

Site Specific Data:

Based on discussions with the developer the following site specific data was shared based on previous typical experience:

- 100 tickets sold per food truck
- Duration of 4 hours
- Most patrons carpool

Based on the above information, and a maximum of 20 food trucks, it is estimated that a total of 2,000 tickets are sold. For a 4-hour duration, an average of 500 patrons would be present during a single hour. For the provided 181 parking spaces, this results in a vehicle occupancy of approximately 2.7 people per car. Although this would be on the high end for typical restaurant developments, given the event nature of the development it is anticipated that carpooling would be high.

Additionally, dedicated rideshare parking spaces can also be provided. The City of Chandler, a similar community, has adopted recommendations for reduced parking requirements based on the provision of dedicated rideshare spaces. Per *Section 35-1808* of the Chandler Zoning Code, a reduction of ten (10%) can be considered for each passenger loading zone provided up to a maximum of forty (40%) according to the following guidelines:

- Commercial: 1 loading zone space per 50,000 sq. ft.

Based on these guidelines, a maximum reduction in required parking of up to 10% should be considered.

RESULTS

The proposed Power Food Park development will provide up to 181 parking spaces, including two main parking areas and an additional overflow area. Based on the most applicable criteria provided by the City of Mesa, a total of 177 parking spaces are required. The various parking areas on the site plan have been designed to account for all 177 total parking spaces plus a 4-space surplus.

The estimated maximum parking demand based on a conservative application of the *ITE Parking Generation* data and methodology is 160 parked vehicles. Since this number represents the maximum demand, it is appropriate to provide a surplus of parking to minimize time spent searching for a vacant parking space and walking to / from the development. The proposed development is planning to provide a surplus of 21 spaces or 12%.

Additionally, dedicated rideshare parking spaces can also be provided. Based on the City of Chandler guidelines, a maximum reduction in required parking of up to 10% should be considered.

Therefore, based on the analysis results, the planned 181 parking spaces are anticipated to provide more than adequate capacity to accommodate the parking demand.

Please contact me at (480) 503-2250, extension 1125 if you have any questions or would like to discuss this memorandum.



Expires: 6/30/2023