Appendix D -

Transportation Facilities

INTRODUCTION

Ease of vehicular accessibility is vital for all who use an airport and its many facilities. The surrounding ground transportation system should accommodate a combination of daily local and airport traffic as congestion can cause missed flights and other unforeseen circumstances. Parking availability is not only crucial for passengers, but for airport employees, rental car services, and revenue generation. The existing system of ground transportation and ground facilities supporting the Charles M. Schulz Sonoma County Airport (STS) terminal area are described below with demand analysis and alternative recommendations.

TERMINAL AREA VEHICLE ACCESS AND INVENTORY

STS is accessed via Airport Boulevard (Exit 495B) from Redwood Highway (U.S Route 101). As illustrated in **Figure D-1**, Airport Boulevard is a four-lane undivided arterial roadway that travels east to west approximately 1.5 miles to the terminal road from Redwood Highway. Once reaching the terminal road Airport Boulevard transitions into a two-lane one-way traffic loop past the terminal and surface parking facilities. Over this 1.5 miles Airport Boulevard intersects with North/Southbound traffic at two signalized and five additional stop-controlled roadways. There is also a gated railroad crossing approximately 1-mile west of STS. These roadways primarily provide connection to the general aviation, business, institutional, and light industrial land uses in the airport vicinity and do not serve as alternative routes to the terminal.

KaiserAir Santa Rosa and Sonoma Jet Center provides FBO services at STS. KaiserAir can be accessed via a private drive off of Airport Boulevard just east of the Long-Term A. This private drive also serves as Level 1 Staging area for Fire/ EMS access. Sonoma Jet Center is located south of the passenger terminal alongside other general aviation services providing aeronautical instruction, maintenance, storage, charter services and sales (Helico Sonoma, North Cost Air, Barron Air Maintenance, PropJet Aviation, Ram Aviation, Vine Jet).

In addition to personal passenger vehicle access, bus and transit services are offered to and from STS providing passengers connection to regional destinations. This includes San Francisco International Airport (SFO), downtown Santa Rosa, and Petaluma. Current bus and transit providers serving STS are Airport Express, Sonoma County Transit, and Mendocino Transit Authority. Sonoma-Marin Area Rail Transit (SMART) provides passenger rail service within one-mile of the airport and offers a limited no cost express bus service from the Cloverdale, Healdsburg, and Windsor stations to STS. SMART operations seven days a week, from 8:00 AM to 7:00 PM and offers some relief of parking demand (Updated 2023).

Figure D-1: Local Area Road Network

Automobile Parking

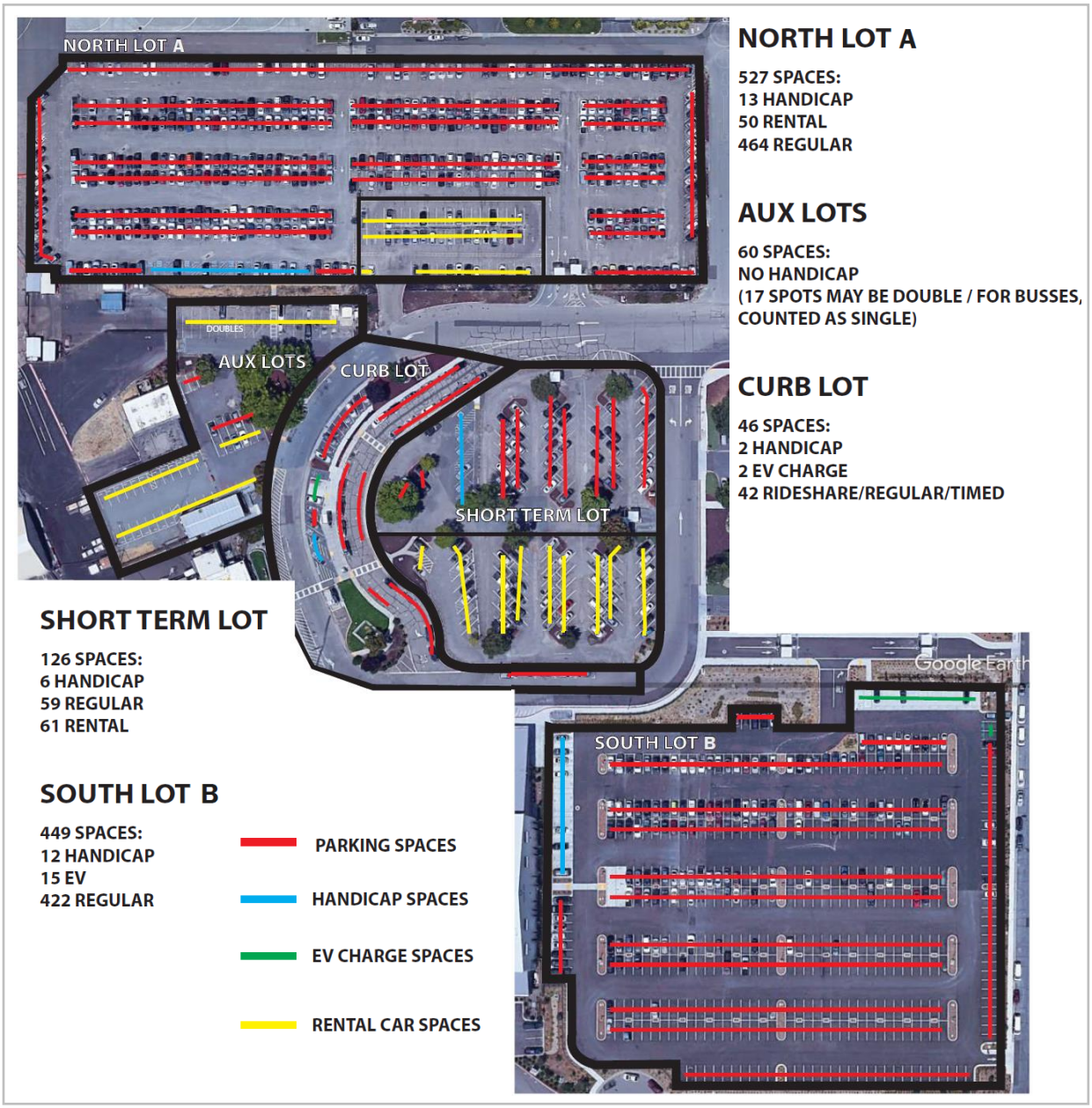
Airport automobile parking is located in three primary parking lots and two additional areas in the immediate vicinity of the passenger terminal. The Short-Term, Long-Term A and B, Temporary Curb Lot, and Auxiliary Lot are owned by the Airport and managed by a third-party operator. The parking inventory with stall counts and use are shown in **Table D-1** and illustrated in **Figure D-2**.

Table D-1: Landside Parking Supply

Parking Lot	Total Stall Count	General Use Count[1]	ADA Stall Count	EV Stall Count	Temporary Stall Count[3]	Rental Car Stall Count
Short-Term Lot	126	59	6	0	0	61
Long Term A	527	464	13	0	0	50
Long Term B	449	422	12	15	0	0
Curb Lot (Temporary)	46	0	2	2	42	0
Aux Lot[2]	60	0	0	0	0	60
Total	**1,208**	**945**	**33**	**17**	**42**	**171**

Source: STS Airport and Mead & Hunt, Inc
1: General use stalls are those that are available for passenger parking and employee parking.
2: Aux Lot includes general use parking previously reserved for use by fire station and use by employees.
3: Temporary stalls include those utilized by rideshare services and "Cell Phone Lot" users.

Figure D-2: Airport Parking Facilities



The majority of stalls are reserved for passenger and employee parking. Passengers are charged for parking based on the lot and duration of stay. Employees are not charged for parking and provided a pass that allows them access to the public lots. The following fees structure is used for public parking (updated July 2023):

Short Term Lot
$2.00 per 30 min.
First 2-Hours Free, $20 daily max

Long-Term Lot A & B
$15.00 per Day.

AUTOMOBILE PARKING FACILITY NEEDS AND DEMAND ANALYSIS

This section looks at the relationship of passenger enplanement and parking data over the past five years. This is done to evaluate the adequacy of existing parking inventory to meet future parking demand. This analysis will focus on four primary automobile parking components found within the immediate passenger terminal vicinity.

- Passenger Parking – Publicly available parking that serves passengers and visitors to the airport for the commercial landside facilities.
- Employee Parking – Parking provided for airport administrative, TSA, airline operator, and other airport staff.
- Rental Car Parking – Parking contracted for rental car parking for use by concessionaires, including ready, return, and maintenance facilities.
- Temporary Parking – Parking provided for pick-ups and drop-offs where vehicles remain attended. Used by the general public, TNCs and rideshare services.

The basis for projecting parking facilities needs and demand in this section is forecasted enplanements versus the most recently available parking data in 2019. Forecasted enplanements are used because it is presumed that enplanements and parking demand are linearly related. For this analysis, the Preferred Enplanement Forecast (PEF) was used. The PEF is also called the 'High Forecast for CEQA Review' in the Aviation Forecast Validation chapter.

Table D-2 shows forecasted enplanements and the resulting ratios that will be used for projecting increase in parking demand. Ratios are presented for planning horizons that correlate with the Planning Activity Levels (PALs) for forecasted enplanements. These should serve as the benchmarks interventions proposed later in this study. The planning year provided serves as an estimate to support long-range planning efforts.

Table D-2: PAL Enplanement Projections and Ratios

Planning Activity Level	Projected Future Year	Forecast Enplanements[1]	Projection Ratio
PAL 1	Current	230,000	**1.00**
PAL 2	5-Year	300,000	**1.30**
PAL 3	10-Year	350,000	**1.52**
PAL 4	15-Year	396,000	**1.72**
PAL 5	20-Year	426,000	**1.85**

Source: Mead and Hunt, Inc
1: Preferred Enplanement Forecast (High Forecast for CEQA Review) from Chapter 2: Aviation Forecasts Validation

Existing Passenger Parking Demand

To evaluate passenger parking demand a baseline is needed that will be used to determine demand at its peak. Historical enplanements by month provide the best measure of which months STS is busiest for parking and will identify which month's data is used for the demand analysis.

Table D-3 shows enplanements data from 2015 through 2019 by month. The data indicates that the busiest months for enplanement are historically July, however this shifted to September in 2019. This is likely due to a recent shift in passenger characteristics, with more locals and business travelers using STS instead of primarily leisure travelers. However, the summer months are still anticipated to be the busiest for enplanements at STS. It is important to note that while September is the peak month for 2019, the enplanements in September do not deviate drastically from the historical month of July. This indicates that if enplanements shift back to a peak month of July in the future projections based on September 2019 will be sufficient to forecast that demand.

Table D-3: Historical Enplanements (2015 – 2019)

Month	2015	2016	2017	2018	2019
January	8,009	10,035	11,410	13,345	13,916
February	8,012	10,322	11,984	14,114	12,919
March	8,947	11,731	15,563	16,017	16,292
April	9,139	12,772	15,087	17,475	16,994
May	10,906	15,082	16,579	18,965	19,777
June	12,811	17,566	20,371	21,291	23,171
July	**13,629**	**17,711**	**22,635**	**22,825**	25,389
August	12,883	16,384	19,744	22,546	25,816
September	11,913	14,518	19,015	21,596	**26,427**
October	13,017	15,564	13,695	19,854	21,740
November	10,920	14,687	17,881	17,598	19,582
December	11,528	13,595	15,839	16,268	22,655

Source: STS Airport

Seasonal and traveler parking characteristics influence parking demand because the type of trips taken fluctuate in length and purpose throughout the year. For example, a business traveler is likely to use the Public Parking Lot for a shorter duration than someone parking the entirety of their family vacation. This fluctuation means that the month with highest enplanements does not always correlate to the month for peak parking demand. To ensure this analysis provides a nuanced look at parking data based on seasonal observations, recorded parking data for January through December 2019 was used.

To account for this variation, the analysis evaluates two (2) data sets that together amount to Peak Daytime Occupancy, or the moment where parking demand is highest throughout the year.

- **Average Overnight Occupancy –** This is a measure of the average quantity of parking stalls occupied by vehicles overnight. This is determined using 2019 nightly vehicle counts provided by the Airport parking operator.
- **Average Duration of Stay –** This is a measure of the overall average duration that a vehicle occupies a parking stall. This was determined using 2019 transaction data provided by the Airport parking operator.

Using the formula below, Peak Daytime Occupancy can be determined for each lot. This helps to establish an understanding of user behavior at the airport and each lot's independent parking demand.

Peak Daytime Occupancy = Average Overnight Occupancy + (Average Overnight Occupancy / Average Duration of Stay)

The findings from this analysis illustrate the seasonal variation in parking demand. For example, the peak month for daytime occupancy in the Short-Term lot is April, while the peak month for combined long-term parking was September. This resulted in September being the overall peak month, which was largely driven by the higher overnight occupancy in Long-Term lot A & B. On average approximately 561 parking stalls were occupied overnight between the lots. This represents approximately 63% of parking supply. The results of this analysis support the use of September as the peak month for parking.

Forecasted Passenger Parking Demand

As was noted previously, it is assumed that parking demand and enplanements have a strong correlation. Using this correlation, the analysis forecasts future parking demand by projecting the ratio of existing parking demand and the PEF ratio from **Table D-2**.

Table D-4 shows the projected peak parking demand for each passenger parking lot. Parking supply operates at peak efficiency when parking occupancy is at approximately 85 percent. When occupancy is greater the lot operates at a lower level of service (LOS) with operational delays. The remaining 15 percent is the needed flow factor accommodating peak period overlap of arrival and departure passengers. This limits a patron's time cycling the parking field in search of the last remaining parking space.

Table D-5 shows the parking supply, demand, and corresponding surplus/deficit for each parking lot considering the effective parking supply for the Preferred Forecasted Growth rate (PEF Rate).

Based on the analysis of parking demand for the passenger parking lots there is a marginal overall deficit of parking in the current condition, increasing to a sever deficit by the short-term planning horizon. This severity increases to a total of 1,070 stalls by the 20-year horizon at the Preferred Forecasted Growth rate. This indicates that during peak events the Airport Passenger Parking Lots are full and even overflow to the street parking available in the terminal vicinity. This is also confirmed by anecdotal observations provided by airport staff.

Table D-4: Peak Passenger Parking Demand

Parking Lot	PAL: Enplanements:	2019 / PAL 1 230,000	PAL 2 300,000	PAL 3 350,000	PAL 4 396,000	PAL 5 426,000
Short-Term Lot		143	187	218	247	265
Long Term A		426	556	649	734	790
Long Term B		296	386	451	510	549

Source: Mead & Hunt, Inc, STS Airport Parking Data

Table D-5: Peak Passenger Parking Demand Forecast

Parking Lot / PAL: Enplanements:	2019 / PAL 1 230,000	PAL 2 300,000	PAL 3 350,000	PAL 4 396,000	PAL 5 426,000
Short-Term Lot					
Supply[1]	59	59	59	59	59
Effective Supply	50	50	50	50	50
Demand	143	187	218	247	265
Surplus / Deficit[2]	**-93**	**-137**	**-168**	**-197**	**-215**
North Lot (Daily/ Long Term A)					
Supply[1]	464	464	464	464	464
Effective Supply	394	394	394	394	394
Demand	426	556	649	734	790
Surplus / Deficit[2]	**-32**	**-162**	**-254**	**-340**	**-395**
South Lot (Daily/ Long Term B)					
Supply[1]	422	422	422	422	422
Effective Supply	359	359	359	359	359
Demand	296	456	530	583	641
Surplus / Deficit[2]	62	-97	-172	-224	-282
Total	**-63**	**-326**	**-514**	**-688**	**-800**

Source: Mead & Hunt, Inc, STS Airport Parking Data
1: Parking supply was determined by a count of all General Use Stalls from Table 1-1. ADA, EV, and Rideshare stalls are dedicated to specialized users and are not necessarily available to passengers based on availability but rather earmarked based on statutory or policy requirements.
2: Deficits do not include the demand employees place on parking facilities.

Rental Car Parking Demand

The automobile rental concession agreements with four rental car concessionaires—Avis/Budget, Enterprise, Hertz and Sixt—specifies assigned rental parking spaces for each company, illustrated in **Figure D-3** below. This agreement established the location and allocation of parking spaces for each operator in 2019 based on the market share percentage of each agency with gross revenues over the preceding 12 months. STS charges a Customer Facility Charge (CFC) to maintain and operate rental car facilities and plan for future expansion and improvements. Rental car parking demand is primarily influenced by enplanements. Demand is also influenced by terms of the rental concession agreements, which dictate the fees and costs incurred by rental car companies for parking spaces in the Ready/Return Lots. Low fees will result in a high desire by the companies for additional parking stalls in the Ready/Return Lot as there will be less shuttling of vehicles by company employees. Conversely, high fees will result in low desire for additional stalls.

Discussions between STS and rental car agencies have culminated in preliminary planning for a Consolidated Rental Car (CONRAC) facility that will further impact demand for rental parking stalls at STS. For this reason, identifying demand based on historic enplanement and transaction ratios will not accurately capture future demand and faculty need. For this reason, the recommendation of this Study is not to project a surplus or deficit of available parking in the Ready/Return Lot. Rather, the recommendation is to hold the number of parking stalls available to concessionaires constant for the life of the current rental concession agreements.

The available number of rental car ready/return spaces is currently sufficient for the four rental car operators if used properly to provide limited short-term vehicle parking for customers picking up and dropping off rental vehicles. Dependent on the demand for the other automobile parking types, existing rental car parking facilities may be moved or redistributed to better account for transition to the future rental car CONRAC facility. The objective of these spaces remains solely to provide rental car operators a place to temporarily park vehicles they have shuttled from their service facilities to meet immediate customer's pickup/drop-off demand. **Table D-6** shows the overall availability of Rental Parking at the Airport.

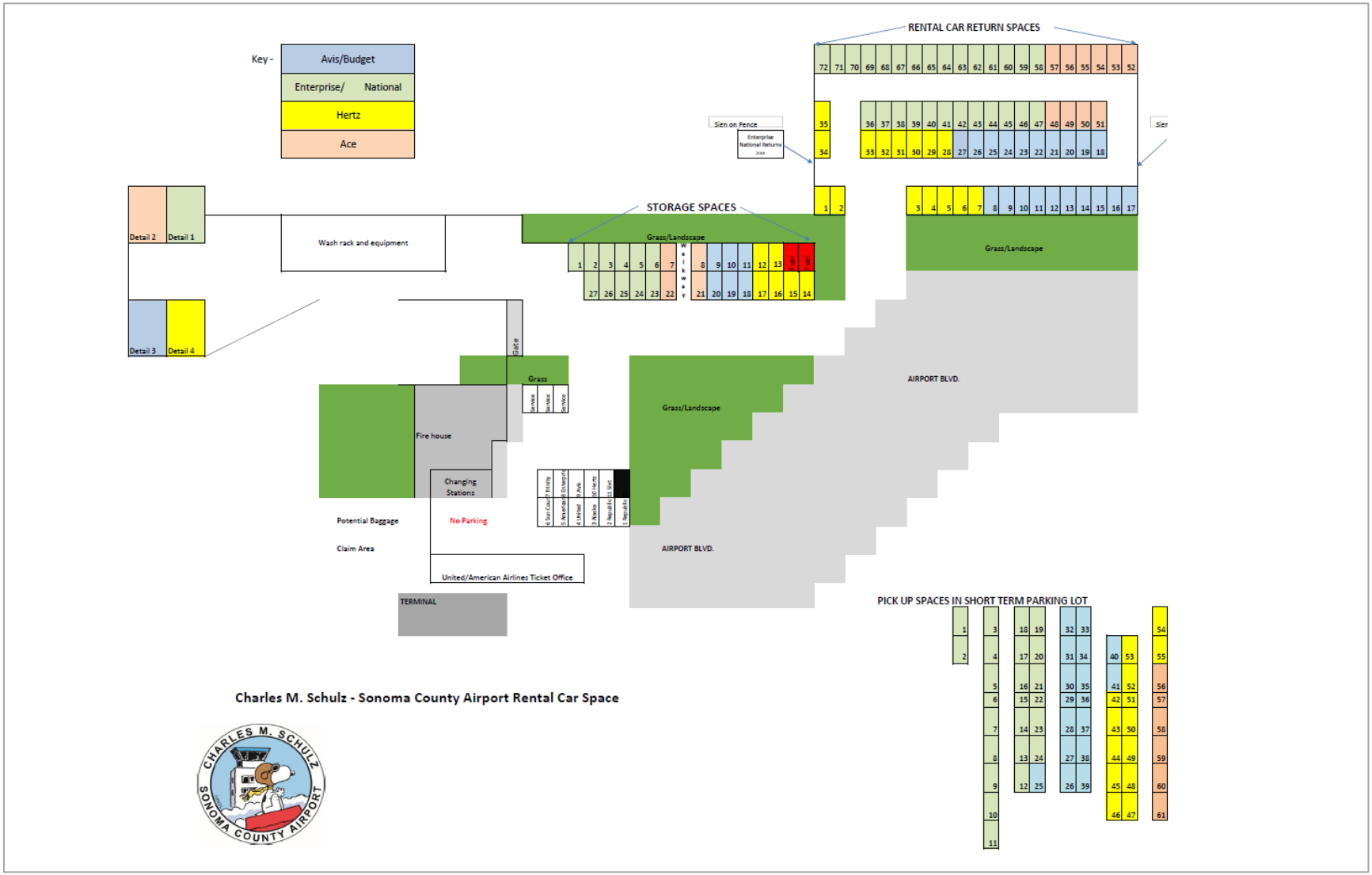
Table D-6: Overall Ready / Return Lot Parking Availability

Short-Term Lot	North Lot (Daily/ Long Term A)	South Lot (Daily/ Long Term B)	Curb Lot (Temporary Parking)	Aux Lot[1]	Total
61	50	-	-	60	**172**

Source: STS Airport and Mead & Hunt, Inc

1: Aux Lot includes general use parking previously reserved for use by fire station and use by employees. Double stalls allow for maximized capacity near the QTA fueling and washing facilities.

Figure D-3: Rental Car Facilities



Source: STS Airport and Mead & Hunt, Inc

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Temporary Parking Demand

Temporary parking lots include cell phone lots or rideshare staging areas, where vehicle may not be left unattended. Temporary parking lots or areas help limit demand and congestion at the arrival curb, and reduces volumes attributed to recirculating traffic. Cell phone lots are typically located with easy access to the main airport access road but are not within walking distance to the terminal to discourage their use as a no-cost, short-term lot.

Temporary parking areas do not require the same number of spaces as other parking lots. *The National Academies of Sciences Guidebook for Evaluating Airport Parking Strategies and Supporting Technologies*, 2010, recommend temporary parking lots provide between 30 and 60 parking stalls.[1] The increased utilization of Transportation Network Companies (TNCs) for passengers traveling to and from an airport requires additional consideration for vehicle staging. While this demand does not necessarily require stripped stalls, the colocation of TNCs with the cell phone lot remains industry practice. Some airports have also required traditional taxi service to stage in the cell phone lot.

Temporary parking is currently allocated to stalls in the Curb Lot. These consist of angled stalls on the Terminal Drive side and parallel stalls located on a separate dedicated rideshare/TNC drive. Based on the size of STS it is estimated that temporary parking demand is 30 stalls, which will increase to 60 stalls along with enplanements over time. **Table D-7** shows the projected surplus or deficit of temporary parking at STS for each PAL.

Table D-7: Temporary Parking Demand

Parking Lot	PAL: Enplanements:	2019 / PAL 1 230,000	PAL 2 300,000	PAL 3 350,000	PAL 4 396,000	PAL 5 426,000
Curb Lot[1]						
Supply		42	42	42	42	42
Effective Supply		36	36	36	36	36
Demand		30	30	60	60	60
Deficit/ Surplus		**6**	**6**	**-24**	**-24**	**-24**

Source: Mead & Hunt, Inc

1: Temporary stalls include those utilized by rideshare services and "Cell Phone Lot" users.

Based on the analysis of parking demand for the temporary parking lot there is a small overall surplus of parking in the current condition. It is anticipated that this becomes a deficit in the 10-year planning horizon. Disruption and redistribution of temporary parking may be needed to facilitate the expansion of surplus for other surface parking types. In the event this occurs, planning for a 30-stall facility with the opportunity for expansion to 60-stalls over time will be needed. As mentioned above, ideally this would be located further from the terminal than the existing facilities in order to prevent premium stalls being used by non-paying users.

1 National Academies of Sciences. "Guidebook for Evaluating Airport Parking Strategies and Supporting Technologies." National Academies Press: OpenBook, 21 Jan. 2010

Parking Facility Needs and Demand Summary

The following are automobile parking facility issues that will need to be addressed through various interventions. With each listed issue, supplemental information is provided to lend context to the urgency and scale of the problem.

Passenger Parking

The analysis of Passenger Parking found small deficits in the short-term increasing over the planning horizon. Based on the analysis of each lot, a substantial portion of this deficit occurs in the short-term parking. This is due to the prevalence of overnight parkers in this lot. In the peak month of September, on average approximately 28% of stalls are occupied overnight. This accounts for nearly half of this lots deficit. Immediate intervention will be needed to remedy this trend in order to stave off a reduction in level of service during peak events.

As enplanements increase, the demand for additional passenger parking facilities will increase across the board. This requires planning for additional passenger parking stalls. Due to a lack of availability of vacant lands in the terminal vicinity, intervention may necessitate the construction of a parking structure rather than surface lots. Whether to build surface or proceed to the development of a structure will be dependent on an evaluation of actual enplanements compared to projections.

Rental Parking

As noted above, rental demand and supply are not necessarily directly correlated to an increase in enplanements, however, and increase in demand is expected. Interventions should focus on identifying potential sits for growth that have characteristics desirable to rental operators such as proximity to the terminal and counters, covered walkways and parking, and efficient access to the QTA facilities. The development of a CONRAC facility will need to be an Airport priority, not only for Rental Parking demand, but also as a result of the dispersed condition of existing Rental Parking stalls and how this impacts the availability and efficiency of passenger, employee, and temporary parking facilities.

Temporary Parking

The Curb Lot does not adequately serve the roll of a Temporary Parking facility due to its proximity to the terminal. Currently the most premium stalls at the Airport are occupied by Rideshare/TNC providers looking for an ideal fair. Anecdotal observation by Airport staff indicated that providers wait for a longer fair in order to maximize their fee and frequently turn down passengers looking for shorter rides.

Temporary parkers should be relocated to a newly developed approximately 30 stall temporary parking facility. This relocation will allow for the realignment/ reorganization of the terminal roadway and curbside for more efficient use and maximize parking supply. Locating it along the presumed travel path of Airport visitors, within convenient distance is preferred. Supply should increase over time and is estimated to need 60 stalls by the 15-year planning horizon.