

Chapter 4 Part II – Refined Terminal Area Alternatives



INTRODUCTION

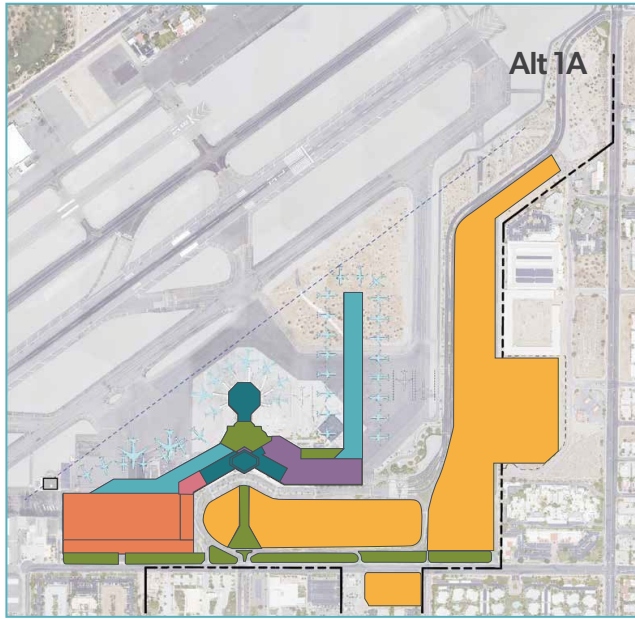
Part 1 of Chapter 4 analyzed four high-level development concepts. These “initial alternatives” were presented to PSP staff, Palm Springs Airport Commission, Master Plan Working Group members, and the Palm Springs City Council. Additionally, a September 2023 open house provided information to the community on the Master Plan process, work completed to-date, an overview of initial alternatives, and a chance for the public to ask questions and provide feedback.

This chapter presents refined versions of Alternatives 1A and 3 with the goal of providing additional analysis to the Working Group, Airport Staff, and the City of Palm Springs that would allow for an informed decision on a preferred alternative. The last section of this chapter provides recommendations for incorporating equity and sustainability in the design of any planned terminal area improvements.

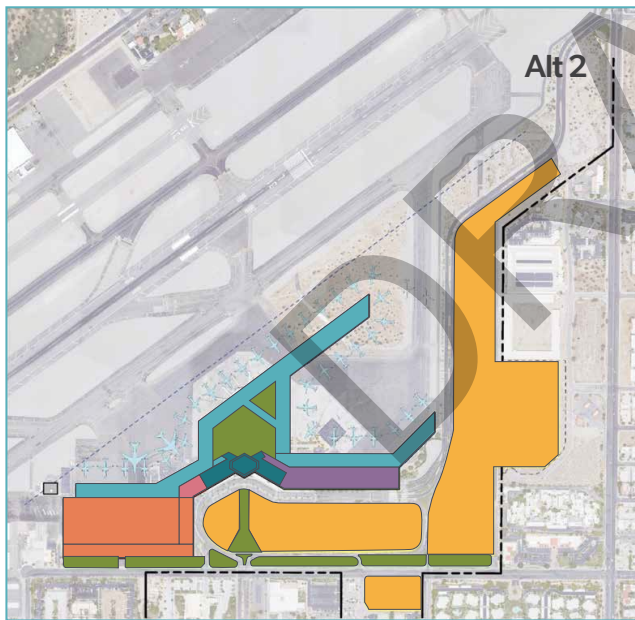
Alternatives 1B and 2 were not carried forward for further refinement. The reasons Alternative 1B was not carried forward include:

- Alternative 1B’s design is less efficient than Alternative 1A. Specifically, 1B requires substantially more concourse space to meet gate needs compared to 1A.
- Alternative 1B requires funneling additional passengers through the narrow circulation space in the Bono Concourse to the new southeast pier.

Figure 4-7: Initial Alternatives



Approach 1: Maximum Reuse



Approach 2: Partial Reuse

Approach 3: Southern Development



LEGEND

--- Property Line	Existing to Remain	Concourse
--- Future Property	Terminal (Departures)	CONRAC
Surface Parking	Terminal (Arrivals)	Courtyard



- Complex renovations of existing facilities that would increase cost and negatively impact passenger experience.
- Alternative 1B would reduce post-security outdoor space.

The reasons Alternative 2 was not carried forward include:

- Alternative 2 would require complicated construction phasing.
 - Multiple construction phases within the existing terminal footprint would be required.
 - Significant disruptions to passenger experience and operations would be expected during construction.
- Alternative 2 would have high anticipated costs.
 - Higher initial costs are expected due to complicated phasing and construction of a comparatively larger facility footprint.
 - Higher ongoing operations and maintenance costs due to its larger facility footprint.

REFINED TERMINAL AREA ALTERNATIVES

Refinements made to Alternative 1A and Alternative 3 are detailed in the following sections. Construction of the entire 20-year development alternative at one time is not feasible. Consequently, a phasing plan has been developed for each alternative focused on minimizing impacts to terminal passengers and tenants during construction and increasing the funding feasibility of the alternative. Both alternatives include four major phases of construction. Additional objectives of alternative phasing include incrementally meeting the four planning activity levels (PALs) detailed in **Chapter 3 - Terminal Area Facility Requirements** while minimizing costs. Actual construction of alternatives could be broken down into additional phases or consolidated into fewer phases depending on future circumstances and preferences.

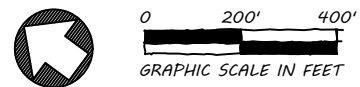
Alternative 1A Overview

Changes to Alternative 1A from the “initial alternative” version include:

- The addition of two rotundas to the southern pier;
- The relocation of Kirk Douglas Way to the south to accommodate dual ADG-III taxiways between the concourses and additional space for headhouse expansion and post-security outdoor space;
- The addition of a planned Ground Transportation Center (GTC) along with a Central Utility Plant (CUP); and
- The addition of roadway and surface parking details.

The full build out of refined Alternative 1A is shown on **Figure 4-8**. Primary access remains at Tahquitz Canyon Way and El Cielo Rd, with secondary access from the Coachella Valley via Ramon Road and a relocated and reconfigured Kirk Douglas Way. Public access to the Consolidated Rent-A-Car facility (CONRAC) is at the west side of the facility via El Cielo. A traffic signal is proposed at the entrance. An access road for deliveries to the southern end of the proposed terminal is proposed.

Figure 4-8: Alternative 1A Full Build



The roadway network adjacent to the terminal would be maintained as a single level roadway system, expanding the curbsides and terminal to the south and north.

Along the curbside, the ticketing and baggage claim areas are expanded to the south and north, respectively. This accommodates growth in the ticketing, security, and the baggage claim programs. Ticketing would shift south, thereby allowing for the Security Screening Check Point (SSCP) to also expand. The proposed Ground Transportation Center would accommodate public transportation connections, shuttles, and potentially taxis and ride share vehicles.

Post security, travelers would enter an expanded courtyard providing central access to three concourses: a new north concourse, the existing Bono Concourse, and a new south concourse. Travelers would also have the option of accessing the southern concourse without entering an outdoor courtyard. The existing Bono Concourse remains in this concept.

The new north concourse can accommodate up to eight narrow-body gates. Four gates are Multiple Aircraft Ramp System (MARs) gates for the Federal Inspection Station (FIS), and they could be swapped out for wide-body aircraft at a 2:1 ratio. Given the north concourse's proximity to baggage claim and the arrivals curb, this concourse would also have a sterile corridor and FIS allowing for arriving international flights operations.

The new southern concourse would accommodate 19 narrow-body gates serving domestic or pre-cleared arriving operations. The concourse would be dual level, accommodating the expanded baggage handling system at the apron level and loading by jet bridge at the second level. A dual level concourse could also accommodate ramp loaded aircraft operations.

Options for public and employee parking expansion were considered for every phase of development. Surface parking square footage and the assumed parking spaces provided by proposed lots are detailed in phasing exhibits.

The rough order of magnitude (ROM) cost for the full build out of Alternative 1A is approximately \$2.2 billion. The full build out would accommodate 34 narrowbody aircraft gate positions and eight remain overnight (RON) parking positions.

Alternative 1A Phasing

1A - Phase 1

The initial project phase includes the build-out of a new north concourse with 5 gates, which can flex to 7 narrow body gates (**Figure 4-9**). Accommodations for international arrivals with a commercial aviation FIS is included in this phase. The proposed CONRAC connects directly to the terminal, while the Ground Transportation Center (GTC) sits in front of the main entrance. A new Central Utility Plant (CUP) would be constructed on the west side of El Cielo adjacent to a proposed parking lot. Phase 1 in this concept would increase the number of available narrowbody aircraft gate positions from 18 to 25. This number is reduced to 23 if two widebody aircraft are present at the new north concourse. The ROM cost for Phase 1 is approximately \$900 million.

1A - Phase 2

The proposed Phase 2 of this concept (**Figure 4-10**) would increase ticketing and security and add a new southern concourse pier with eight gates. The Regional Jet Concourse would be demolished to allow for the pier construction, while Kirk Douglas Way would be realigned to accommodate dual taxiways on both sides of the pier and provide additional space for headhouse and post-security outdoor space. Vehicle flow and surface parking would be reconfigured to account for the realignment of Kirk Douglas Way and maximizing parking potential. There would be 24 narrowbody aircraft gate positions after completion of this phase. The ROM cost for Phase 2 is approximately \$1.1 billion.

1A - Phase 3

Phase 3 of this concept (**Figure 4-11**) would extend the south pier to the east and accommodate five additional gates. After completion of Phase 3 there would be 29 narrowbody aircraft gate positions. The ROM cost for Phase 3 is approximately \$100 million.

1A - Phase 4

The proposed Phase 4 of this concept (**Figure 4-12**) is the final phase and includes the last expansion to the south pier with five additional gates added to the east end. There would be 34 total narrowbody gate positions after Phase 4 is completed. The ROM cost for Phase 4 is approximately \$100 million.

A summary of Alternative 1A phasing is provided in **Table 4-1** along with planning activity level (PAL) requirements for gate positions and vehicle parking.

Figure 4-9: Alternative 1A Phase 1

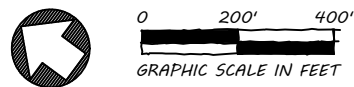


Figure 4-10: Alternative 1A Phase 2

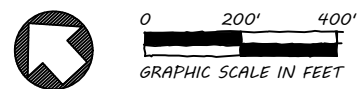
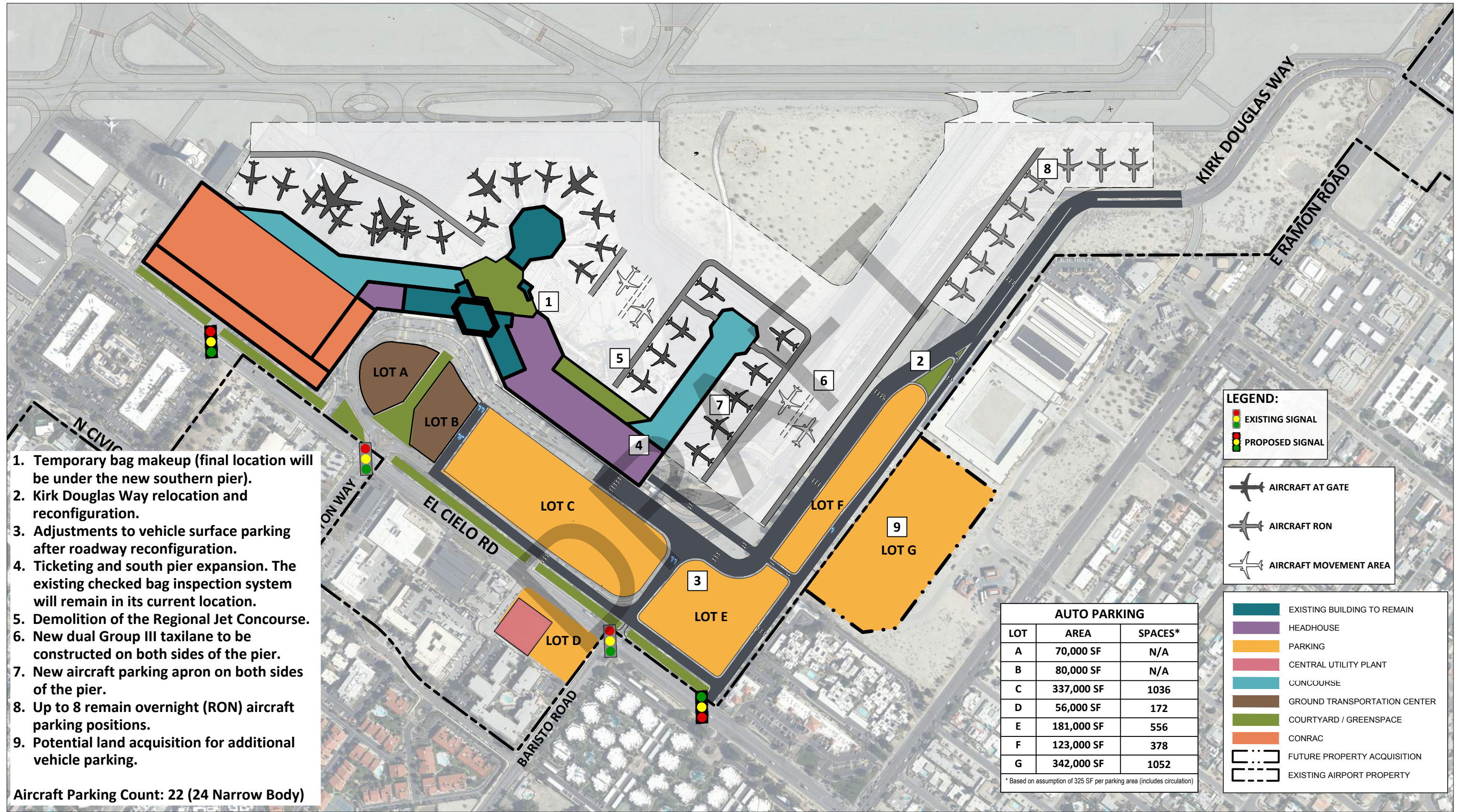


Figure 4-11: Alternative 1A Phase 3

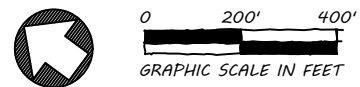
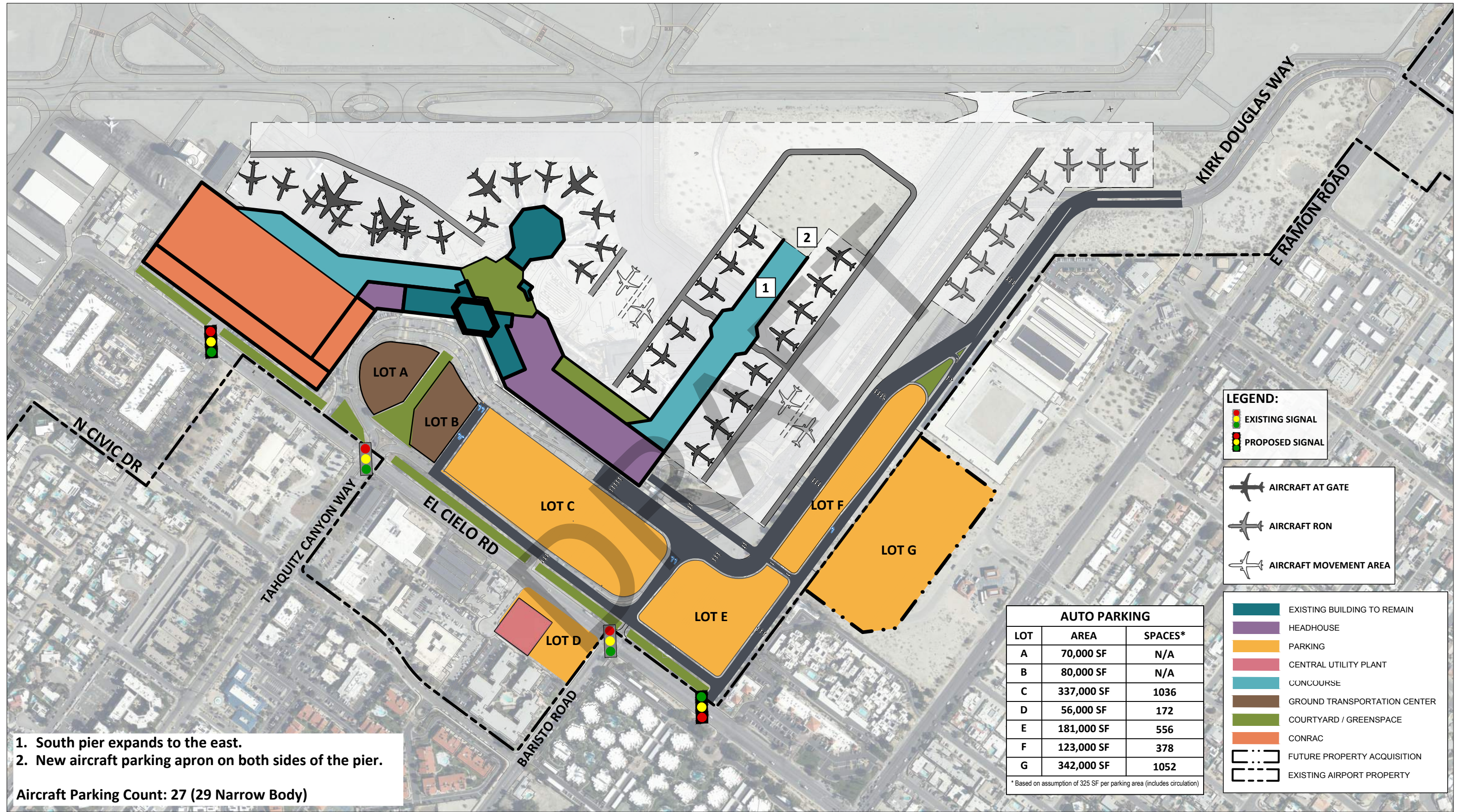
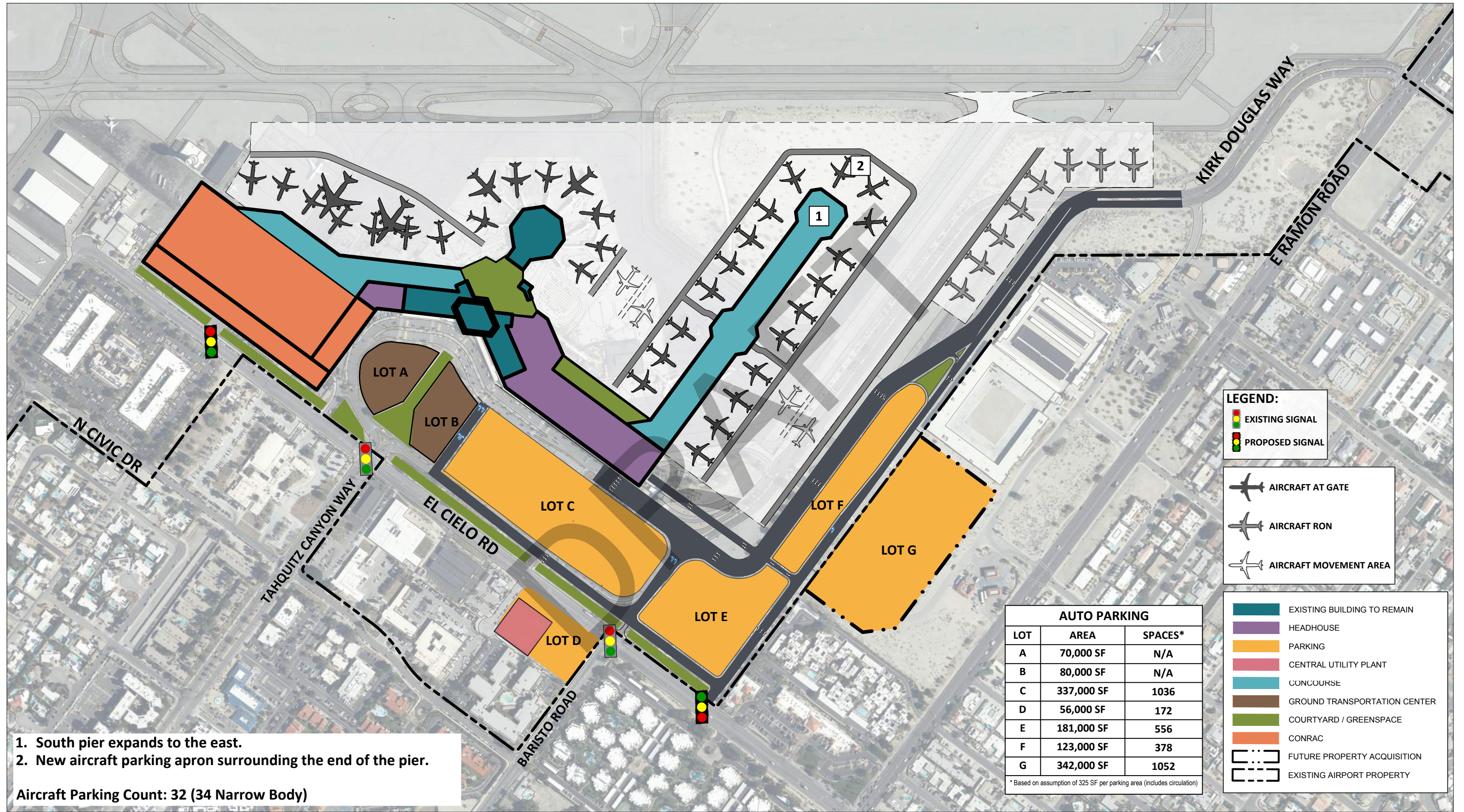


Figure 4-12: Alternative 1A Phase 4



1. South pier expands to the east.
2. New aircraft parking apron surrounding the end of the pier.

Aircraft Parking Count: 32 (34 Narrow Body)

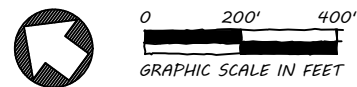


Table 4-1: Alternative 1A Summary

Alternative 1A				
Consideration	Phase 1	Phase 2	Phase 3	Phase 4
Phase ROM Cost	\$900M	\$1.1B	\$100M	\$100M
<i>ROM Total Cost</i>	<i>\$900M</i>	<i>\$2B</i>	<i>\$2.1B</i>	<i>\$2.2B</i>
Gate Positions (Narrowbody)	25	24	29	34
RON Positions	5	8	8	8
Courtyard s.f. (secure side)	61,000	88,000	88,000	88,000
Surface Parking Spaces	2,778	3,194	3,194	3,194
Planning Activity Level Requirements	PAL 1	PAL 2	PAL 3	PAL 4
Gate Positions (Narrowbody)	23	24	27	32
Public & Employee Parking Spaces	2,063	2,450	2,756	3,321

Alternative 3 Overview

Changes to Alternative 3 from the “initial alternative” version include:

- The easternmost pier is no longer on a north-south alignment; it now runs parallel to the runway and adjacent to the relocated Kirk Douglas Way.
- The addition of a Ground Transportation Center along with a Central Utility Plant.
- Additional roadway and surface parking details are provided.

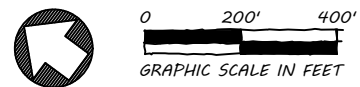
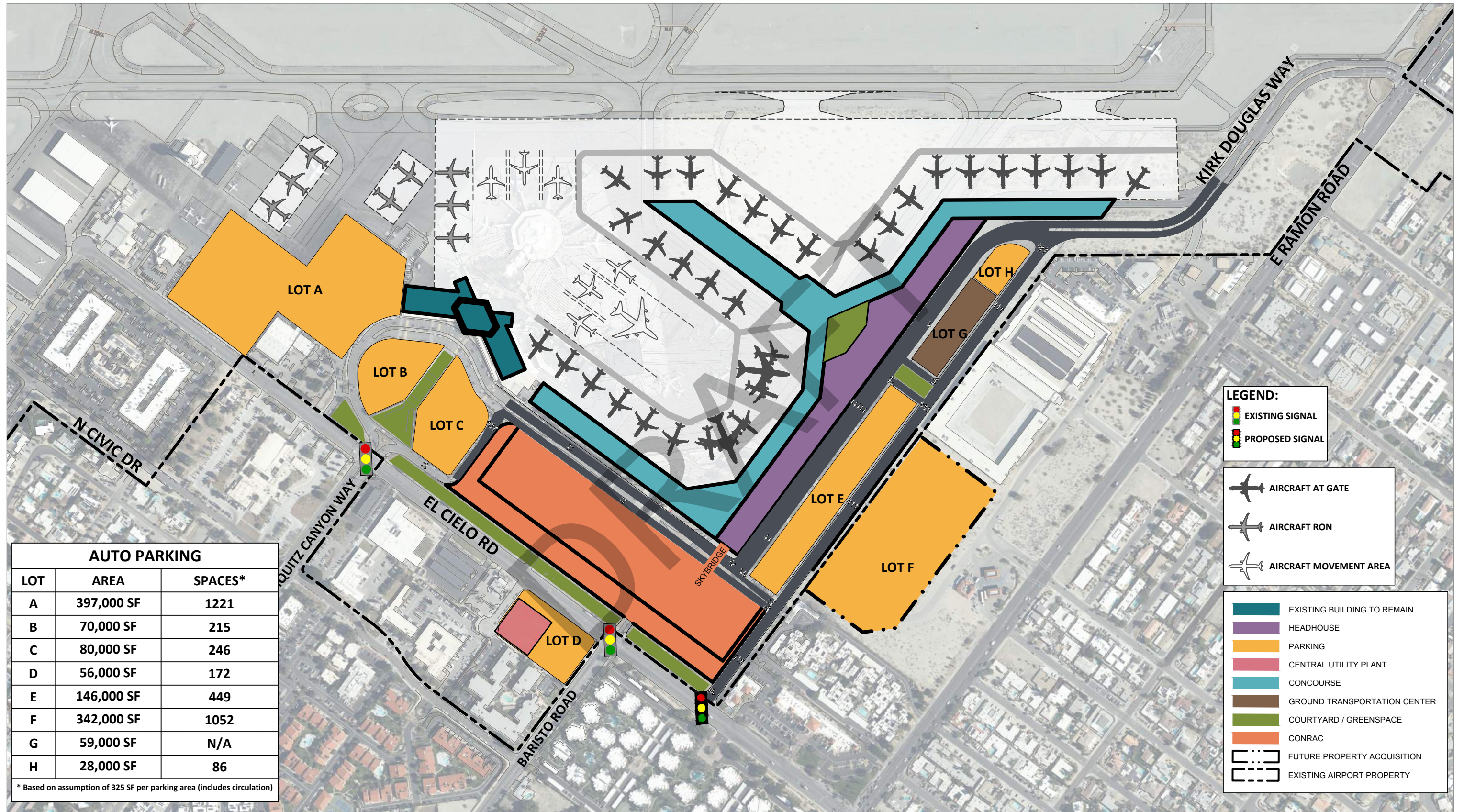
The full build out of refined Alternative 3 is shown on **Figure 4-13**.

Alternative 3 replaces and relocates the airport terminal and all concourses to the southern side of the terminal area along the relocated and reconfigured Kirk Douglas Way. Given the historic nature of the Wexler terminal building it would be the only structure to remain, and its new function would be decided by the community. The new terminal would span east and west, with two concourse piers extending in a north and south alignment and the third pier running parallel to the runway along Kirk Douglas Way. Between the western and central concourse piers is a dual ADG-III taxilane or single ADG-V taxilane, and the two MARs positions.

Access to the terminal from Tahquitz and El Cielo would remain; however, major reworks of the landside roadway system, pedestrian access, and surface parking is anticipated. Secondary access from El Cielo would be available via a proposed road along the southern edge of airport property. Access from the Coachella Valley is provided via Ramon Road and the reconfigured Kirk Douglas Way. Public access to the CONRAC is at the west side of the facility via El Cielo. A traffic signal is proposed at the entrance.

The new terminal would have the departures curb and ticketing at the east end, and the arrivals curb and baggage claim at the west end. The proposed Ground Transportation Center would accommodate public transportation connections, shuttles, and potentially taxis and ride share vehicles. The SSCP is located at

Figure 4-13: Alternative 3 Full Build



Source: Gensler and Mead & Hunt, 2023

the center of the terminal, between ticketing and baggage. There is an opportunity at this point for passengers to ascend to a second level, allowing for space at the apron level for the baggage handling system.

Post security passengers can remain in the terminal building or enter a newly planned central open-air courtyard. Covered portions of the terminal could be opened to the courtyard while providing coverage from sun or rain, or it could be fully enclosed and conditioned.

All concourse piers are currently envisioned to be two levels, with the flexibility to have some portions be at ramp level to allow for ramp boarding operations. The two-level concourses would allow for passenger enplaning via a boarding bridge on the second level, with a baggage handling system and offices at the apron level. Given the proximity to baggage and arrivals curbs, the FIS and sterile corridor would be located adjacent to western concourse pier.

Options for public and employee parking expansion were considered for every phase of development. Surface parking square footage and the assumed parking spaces provided by proposed lots are detailed in phasing exhibits. If Signature Flight Support is relocated to the other side of the airfield, available property could be converted to surface parking. For planning purposes, Alternative 3 phasing will show conversion of a large portion of this property to parking. Passengers utilizing this lot and other remote lots would likely require shuttle transportation to and from the terminal GTC.

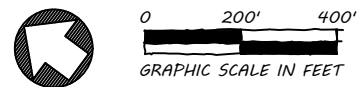
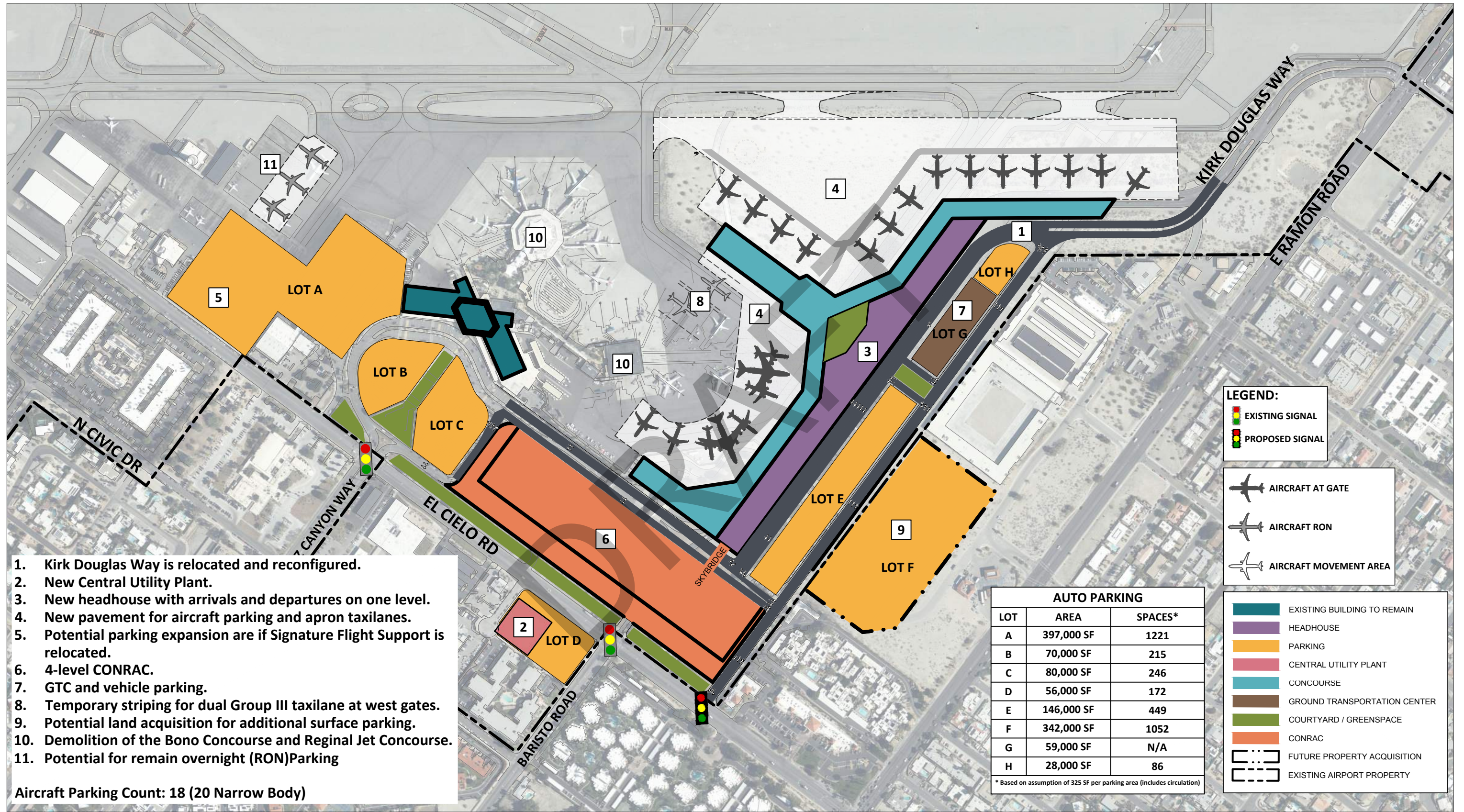
The rough order of magnitude (ROM) cost for the full build out of Alternative 3 is approximately \$2.8 billion. The full build out would accommodate 32 narrowbody aircraft gate positions and eight RON parking positions.

Alternative 3 Phasing

3 - Phase 1

Phase 1 of this concept includes an all-new terminal building/headhouse on the south side of the terminal area (**Figure 4-14**). Phase 1 focuses on the processors, ticketing, security, baggage claim, baggage screening, Customs and Border Protection for international arrivals. Phase 1 increases the number of available narrowbody aircraft gate positions from the 18 available today to 20. The number of gate positions is reduced to 18 if two widebody aircraft are present. A new CUP would be constructed on the west side of El Cielo adjacent to a potential employee parking lot. The new CONRAC would be located to the west of the new terminal adjacent to bag claim. Kirk Douglas Way would be relocated to the south, and a GTC is planned directly across from the main entrance. The ROM cost for Phase 1 is approximately \$2.2 billion.

Figure 4-14: Alternative 3 Phase 1



3 - Phase 2

Phase 2 of this concept (**Figure 4-15**) would include the addition of four new gates to the central pier that would be built during Phase 1 of Alternative 3. The addition of the four gates would occur after the existing Bono Concourse and Regional Jet Concourse are demolished, and the adjacent apron has been expanded and rehabilitated. The terminal designed by Donald Wexler would be restored during this phase for future use. After completion of Phase 2 there would be 24 total narrowbody aircraft gate positions. The ROM cost for Phase 2 is approximately \$400 million.

3 - Phase 3

During Phase 3 of this concept (**Figure 4-16**) the central pier would be extended to accommodate four additional gates for a total of 28 narrowbody aircraft gate positions. The ROM cost for Phase 3 is approximately \$100 million.

3 - Phase 4

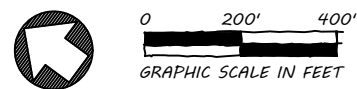
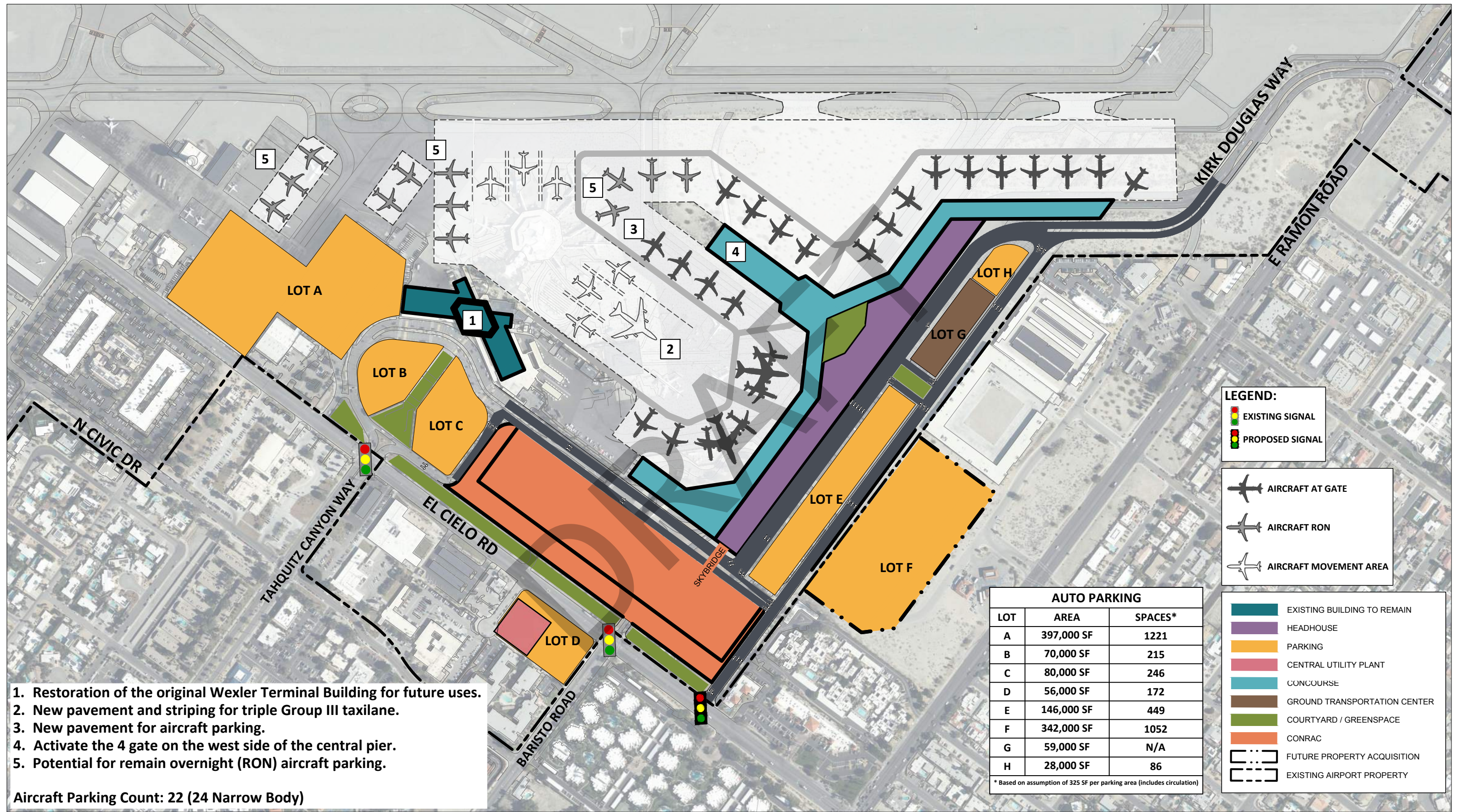
Phase 4 is the final phase proposed phase of this concept (**Figure 4-17**) and includes the expansion of the west pier to accommodate four additional gates for a total of 32 narrowbody aircraft gate positions. The ROM cost for Phase 4 is approximately \$100 million.

A summary of Alternative 3 phasing is provided in **Table 4-2** along with planning activity level (PAL) requirements for gate positions and vehicle parking.

Table 4-2: Alternative 3 Summary

Alternative 3				
Consideration	Phase 1	Phase 2	Phase 3	Phase 4
Phase ROM Cost	\$2.2B	\$400M	\$100M	\$100M
<i>Running ROM Cost Total</i>	<i>\$2.2B</i>	<i>\$2.6B</i>	<i>\$2.7B</i>	<i>\$2.8B</i>
Gate Positions (Narrowbody)	20	24	28	32
RON Positions	3	11	8	8
Outdoor Courtyard (SF)	26,000	26,000	26,000	26,000
Surface Parking Spaces	3,441	3,441	3,441	3,441
Planning Activity Level Requirements	PAL 1	PAL 2	PAL 3	PAL 4
Gate Positions (Narrowbody)	23	24	27	32
Public & Employee Parking Spaces	2,063	2,450	2,756	3,321

Figure 4-15: Alternative 3 Phase 2



Source: Gensler and Mead & Hunt, 2023

Figure 4-16: Alternative 3 Phase 3

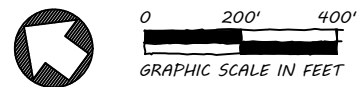
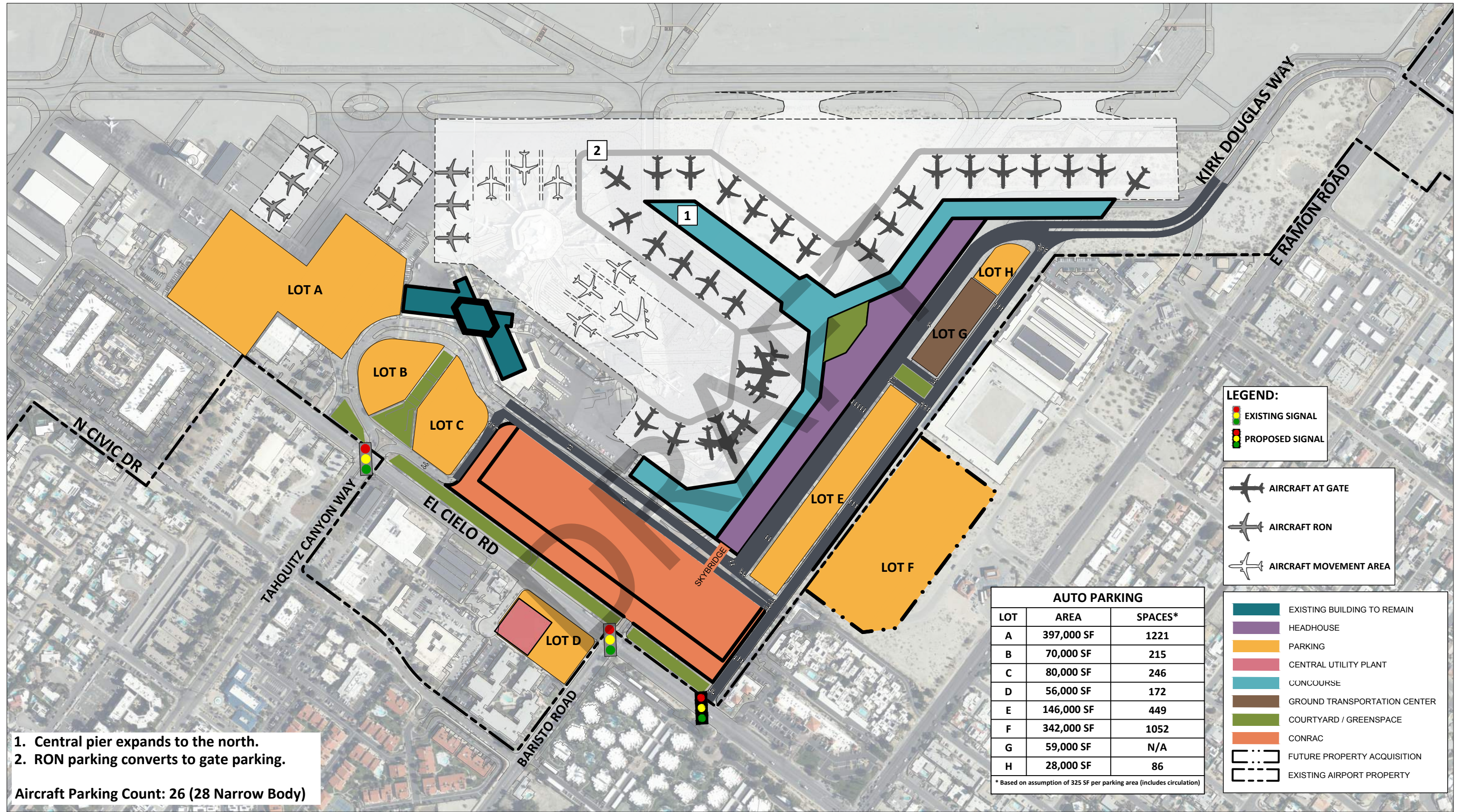
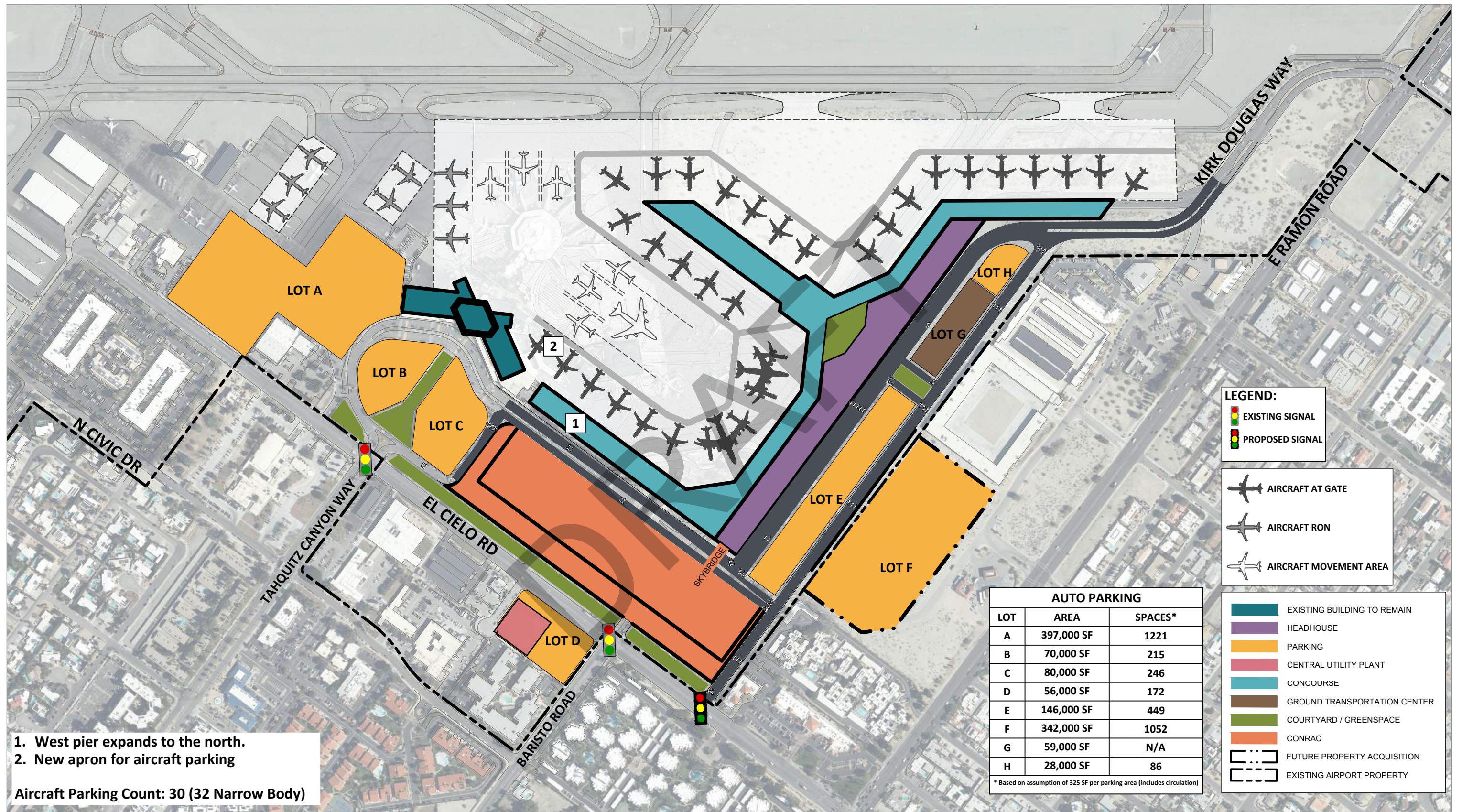


Figure 4-17: Alternative 3 Phase 4



1. West pier expands to the north.
 2. New apron for aircraft parking

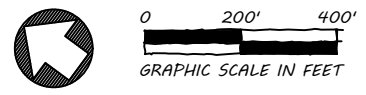
Aircraft Parking Count: 30 (32 Narrow Body)

AUTO PARKING		
LOT	AREA	SPACES*
A	397,000 SF	1221
B	70,000 SF	215
C	80,000 SF	246
D	56,000 SF	172
E	146,000 SF	449
F	342,000 SF	1052
G	59,000 SF	N/A
H	28,000 SF	86

* Based on assumption of 325 SF per parking area (includes circulation)

LEGEND:

- EXISTING SIGNAL
- PROPOSED SIGNAL
- AIRCRAFT AT GATE
- AIRCRAFT RON
- AIRCRAFT MOVEMENT AREA
- EXISTING BUILDING TO REMAIN
- HEADHOUSE
- PARKING
- CENTRAL UTILITY PLANT
- CONCOURSE
- GROUND TRANSPORTATION CENTER
- COURTYARD / GREENSPACE
- CONRAC
- FUTURE PROPERTY ACQUISITION
- EXISTING AIRPORT PROPERTY



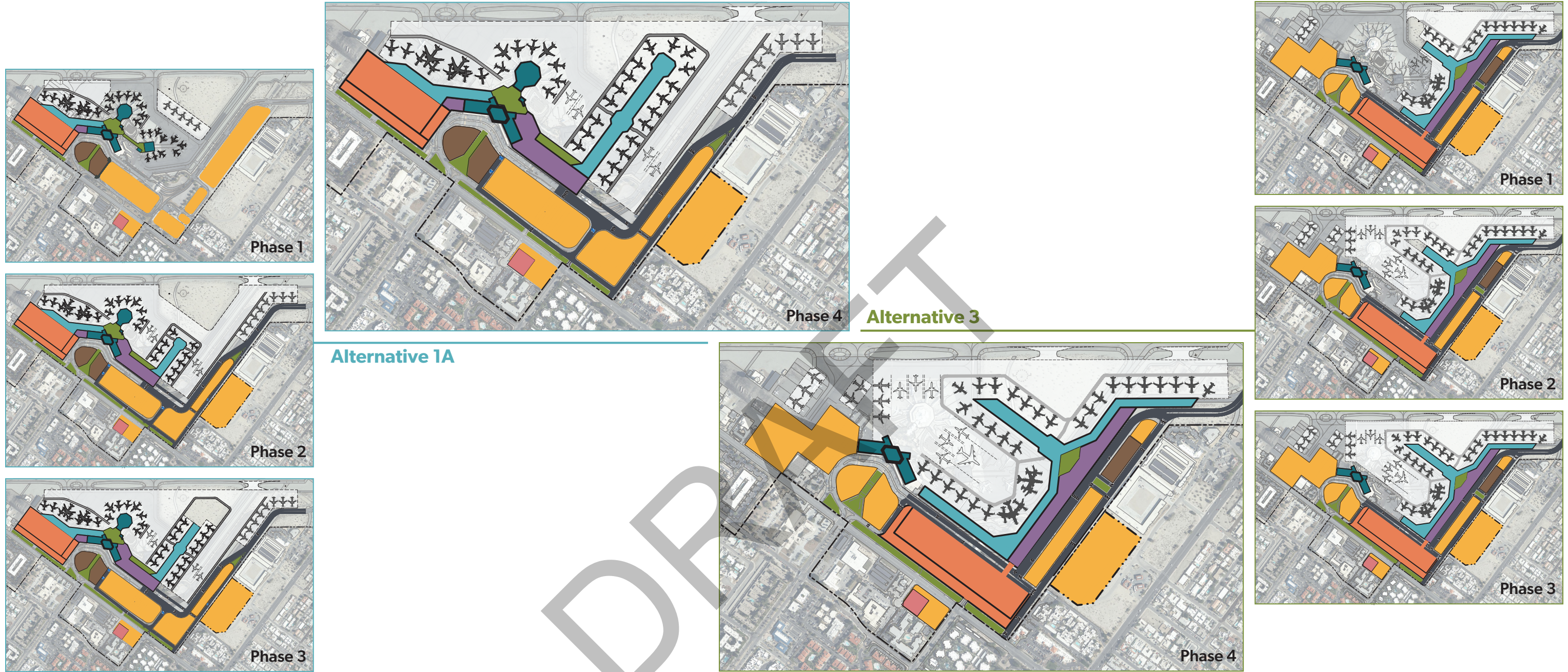
Source: Gensler and Mead & Hunt, 2023

Refined Alternatives Summary

The two alternative development concepts that are the subject of this chapter were indicated as the preferred concepts by the PSP Master Plan Working Group. A public open house was also held to present the initial concepts to the community and a preference was indicated for Alternatives 1A and 1B in this meeting and in online comment submissions from the community. This chapter presented refined versions of the Working Group’s preferred alternatives with the goal of providing additional analysis to the Working Group, Airport Staff and the City of Palm Springs that would allow for an informed decision on selection of a preferred alternative. The focus of the additional analysis was on phasing of each alternative and planning level cost estimates for each phase in the alternatives. **Figure 4-18** provides a comparative summary of both alternatives. **Figures 4-19 through 4-23** provide terminal area renderings for Alternative 1A and Alternative 3.

Recommendations for incorporating equity and sustainability in the design of the planned terminal area improvements are provided in the final section of this chapter. After a tentative preferred terminal area alternative is selected, the preferred alternative will ultimately be presented and recommended to the Palm Springs City Council in early 2024 along with a preferred airfield alternative. The combined terminal area and airfield alternatives will comprise the conceptual development plan for this Comprehensive Airport Master Plan.

Figure 4-18: Alternatives Summary



Alternative 1A				
Consideration	Phase 1	Phase 2	Phase 3	Phase 4
Phase ROM Cost	\$900M	\$1.1B	\$100M	\$100M
<i>Running ROM Cost Total</i>	<i>\$900M</i>	<i>\$2B</i>	<i>\$2.1B</i>	<i>\$2.2B</i>
Gate Positions (Narrowbody)	25	24	29	34
RON Positions	5	8	8	8
Courtyard s.f. (secure side)	61,000	88,000	88,000	88,000
Surface Parking Spaces	2,778	3,194	3,194	3,194

Planning Activity Level Requirements	PAL 1	PAL 2	PAL 3	PAL 4
Gate Positions (Narrowbody)	23	24	27	32
Public & Employee Parking Spaces	2,063	2,450	2,756	3,321

Alternative 3				
Consideration	Phase 1	Phase 2	Phase 3	Phase 4
Phase ROM Cost	\$2.2B	\$400M	\$100M	\$100M
<i>Running ROM Cost Total</i>	<i>\$2.2B</i>	<i>\$2.6B</i>	<i>\$2.7B</i>	<i>\$2.8B</i>
Gate Positions (Narrowbody)	20	24	28	32
RON Positions	3	11	8	8
Courtyard s.f. (secure side)	26,000	26,000	26,000	26,000
Surface Parking Spaces	3,441	3,441	3,441	3,441

Figure 4-19: Alternative 1A Northeast View



Figure 4-20: Alternative 1A Southwest View



Source: Gensler, 2023

Figure 4-21: Alternative 1A Tahquitz View



Source: Gensler, 2023

Figure 4-22: Alternative 3 Northeast View



Source: Gensler, 2023

Figure 4-23: Alternative 3 Southeast View



Source: Gensler, 2023

EQUITY AND SUSTAINABILITY CONSIDERATIONS

In either of the previously described concepts, the goal would be the design of an effective, efficient and sustainable terminal. To create a sustainable airport terminal, a range of factors pertaining to land use, transportation, stakeholder relations, and resilience should be considered in the design process. The objective being to develop the terminal improvements in phases that seamlessly integrate the surrounding environment, supports the well-being of stakeholders, and is resilient to challenges.

Building a terminal that incorporates equity and sustainability creates a space that attempts to address the needs of all stakeholders while minimizing environmental impacts. The following sections explain equity and sustainability factors that were taken into consideration when choosing the refined alternatives.

Equity Factors:

- **Accessibility for All:** Ensures the terminal is accessible to individuals of all abilities. Incorporates ramps, elevators, tactile indicators, limits walking distance and other features that make navigation easy for people with disabilities.
- **Inclusive Design:** Creates spaces that are inclusive of diverse cultural backgrounds and age groups. Consider cultural sensitivities, multilingual signage, and spaces that accommodate families, children, and elderly travelers.
- **Economic Accessibility:** Ensures there are services and amenities that cater to different income levels. Offers affordable transportation options, varied dining choices, and amenities that can be enjoyed by all passengers.
- **Community Engagement:** Involve local communities and stakeholders in the design process. Seek input from residents, businesses, and community organizations to ensure the terminal's design reflects their needs and concerns.
- **Employment Opportunities:** Consider how the terminal improvements can create job opportunities for the local community, especially in marginalized neighborhoods. Collaborate with community organizations to provide training and employment initiatives.
- **Environmental Justice:** Assess the potential environmental impacts of the terminal on surrounding communities, particularly those that are historically disadvantaged. Mitigates negative impacts and ensure that benefits are distributed equitably.

Consider a terminal design that will lessen confusion for passengers during construction and create a streamlined experience.

Sustainability Factors:

- **Energy Efficiency:** Prioritizes energy-efficient design, utilizing advanced lighting, heating, cooling, and ventilation systems. Implements sensors and automation to optimize energy use.
- **Renewable Energy:** Integrates renewable energy sources like solar panels to power the terminal. Utilizes clean energy technologies to reduce reliance on fossil fuels.
- **Water Management:** Implements water-efficient fixtures and systems to minimize water consumption. Incorporates rainwater harvesting and greywater recycling to further conserve water resources.
- **Materials Selection:** Chooses sustainable and eco-friendly materials with a low environmental impact. Prioritizes materials that are recycled, recyclable, or biodegradable.
- **Waste Management:** Designs include waste disposal and recycling facilities that encourage proper waste segregation. Promotes waste reduction through initiatives like composting and recycling programs.
- **Transportation Alternatives:** Improves access to public transportation and consider on-site electric vehicle charging stations. Encourages travelers to use low-carbon transportation options.
- **Biodiversity:** Incorporates green spaces and native vegetation into the terminal design to support local biodiversity. Uses landscaping techniques that require minimal water and maintenance.
- **Resilience to Climate Change:** The terminal is designed to withstand the impacts of climate change and extreme weather events.
- **Lifecycle Assessment:** Considers the entire lifecycle of the terminal, from construction to operation and eventual decommissioning. Minimize environmental impacts at every stage.
- **Certification and Standards:** Strives for sustainability certifications such as LEED (Leadership in Energy and Environmental Design) or BREEAM (Building Research Establishment Environmental Assessment Method) to ensure that the terminal meets internationally recognized sustainability criteria.

Lifecycle Assessment:
Contemplate a terminal design
that creates the most
opportunities for the longevity
and sustainability of the historic
Wexler Terminal.

The aspiration for a sustainable airport terminal design is a holistic one. It encompasses social equity, energy efficiency, water conservation, waste management, stakeholder engagement, and resilience as well as environmental and financial uncertainties. Through a careful synthesis of these elements, PSP endeavors to create a terminal that not only meets the needs of its users but also serves as a model of sustainable design for the broader aviation industry and the entire Coachella Valley.