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ALTERNATIVES

MASTER PLAN

July, 2020



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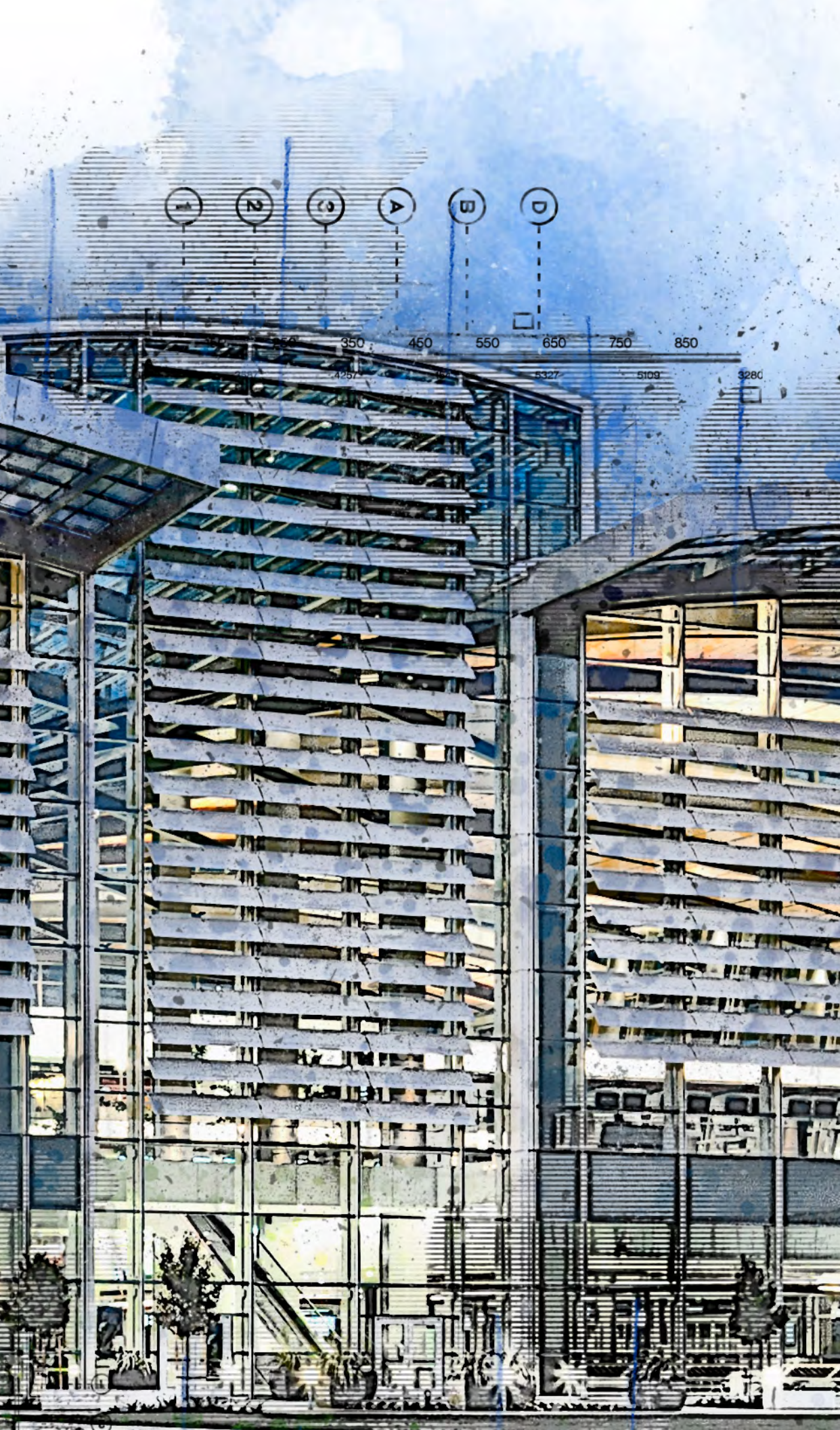
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INTRODUCTION

Alternatives and/or recommendations were developed for the following facilities: 1) Passenger terminal; specifically Remain Overnight (RON) Parking and aircraft gates, 2) Ground transportation and parking; specifically passenger and employee parking, rental car facilities, curbsides, and access and circulation roadways, and 3) Support facilities; specifically air cargo, general aviation, and airport/airline support.

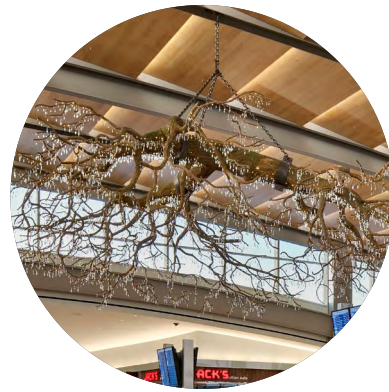
Alternatives to meet the equipment and space requirements inside each terminal will be analyzed in a separate study when specific PALs are approaching and the terminal area is nearing capacity and requires expansion. This type of terminal study will be conducted after adoption of this Master Plan Update.

Alternatives are intended to provide the Sacramento County Department of Airports (SCDA or Department) with a comprehensive summary of options for developing facilities at SMF and ultimately deciding on a preferred development plan.

ALTERNATIVES COMPONENTS



Airfield



Passenger Terminal



Ground Transportation and Parking



Support Facilities



Preferred Alternatives

The results of the airfield requirements analysis indicate that there will be sufficient runway capacity at the Airport to accommodate forecast demand through PAL 4. Existing taxiway capacity is also adequate to meet forecast demand. Taxiway improvements will focus on enhancing operational efficiency and meeting FAA design standards.

Alternatives to add aircraft gates and accommodate aircraft parking at SMF are considered in this Master Plan Update. Alternatives to meet the equipment and space requirements inside each terminal will be analyzed in a separate study when specific PALs are approaching and the terminal area is nearing capacity and requires expansion.

Alternatives scenarios and/or recommendations have been developed for PAL 1 through PAL 4 to address deficiencies in the following areas: Public parking facilities (close-in and remote), rental car facilities, airport roadways, for the curbside, and for a potential ground transportation center.

A site assessment was completed for air cargo, general aviation (GA), airport maintenance, and commercial development at the Airport. Based on the assessment, it was concluded that (1) most support facilities at the Airport are suitably located, and (2) the site assessment is useful as a land use management tool as opportunities for new Airport development arise.

In determining the preferred alternative for the Airport, SCDA staff considered existing land use development patterns, operational needs, operational impacts, discussions with tenants, long-term operations and maintenance costs, and longer-term growth requirements.



4-1 AIRFIELD

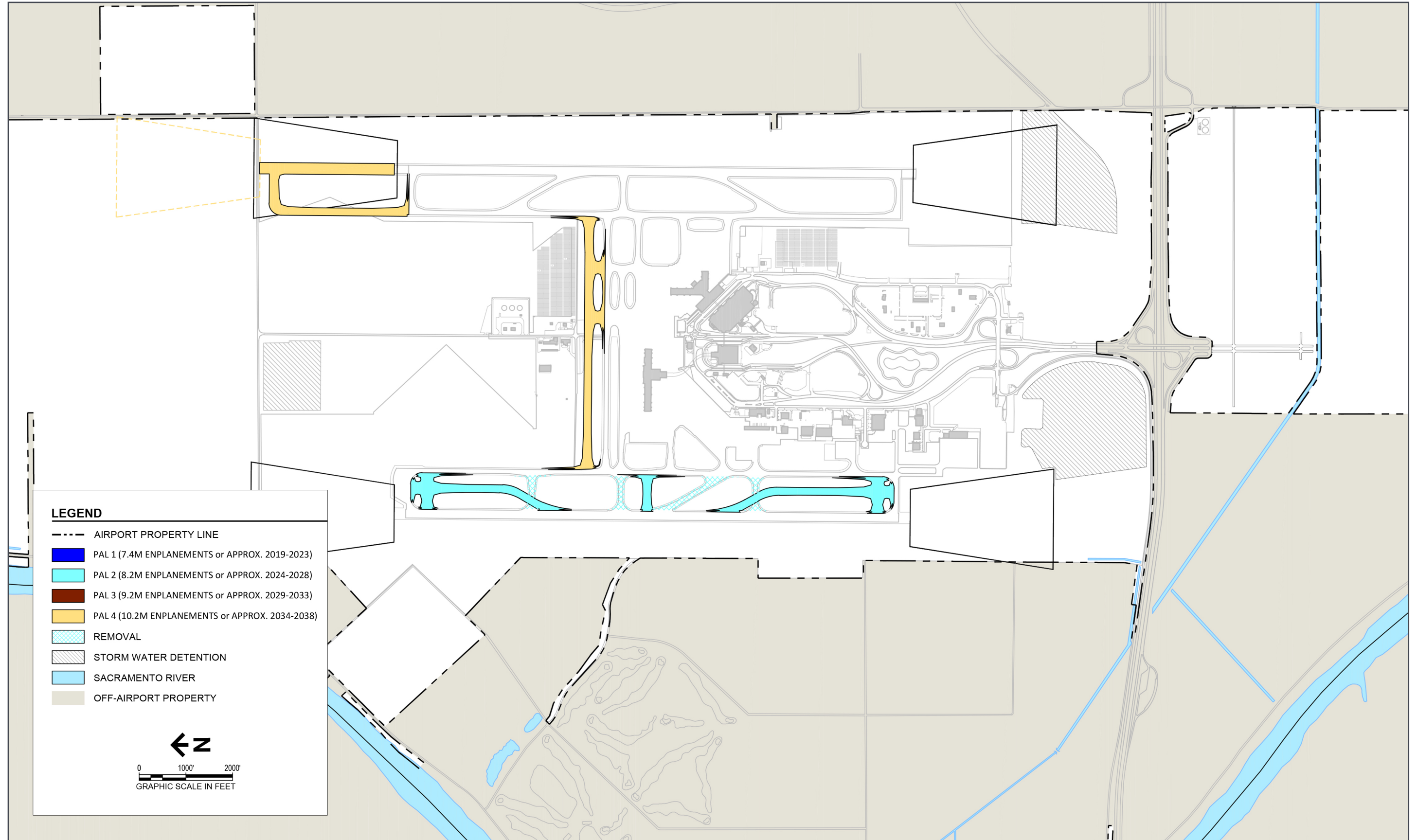
The results of the airfield requirements analysis indicate that there will be sufficient runway capacity at the Airport to accommodate forecast demand through PAL 4.

Regular discussions with SCDA staff and tenants related to future aircraft types, flight performance characteristics, payloads, and destinations will determine when, or if, a runway extension is warranted at the Airport. Technological advancements in aircraft performance have not driven a critical need for a runway extension at SMF, but the runway extension will continue to be depicted on the ALP (**Figure 4-1**) until the need is no longer warranted or a different analysis is conducted.

The demand and phasing for the runway extension, currently shown on the ALP, will be analyzed in greater detail when the A321 (or similar aircraft) becomes the critical aircraft, when more long-haul routes are introduced at SMF, or when climatic conditions create enough of an impediment to aircraft performance.

Existing taxiway capacity is adequate to meet forecast demand. The taxiway improvements shown on the ALP (**Figure 4-1**) will enhance operational efficiency and meet FAA design standards. These include the holdpads and high-speed, perpendicular taxiway exits for Runway 16R/34L.

Figure 4-1 Airfield Improvements



Source: Sacramento International Airport Master Plan, July 2020



4-2

PASSENGER TERMINAL

To determine the gating and aircraft parking requirements for both terminals, the Ratio Method and the Design Day Flight Schedule (DDFS) gating analysis methods were used.

Terminal Expansion Alternatives

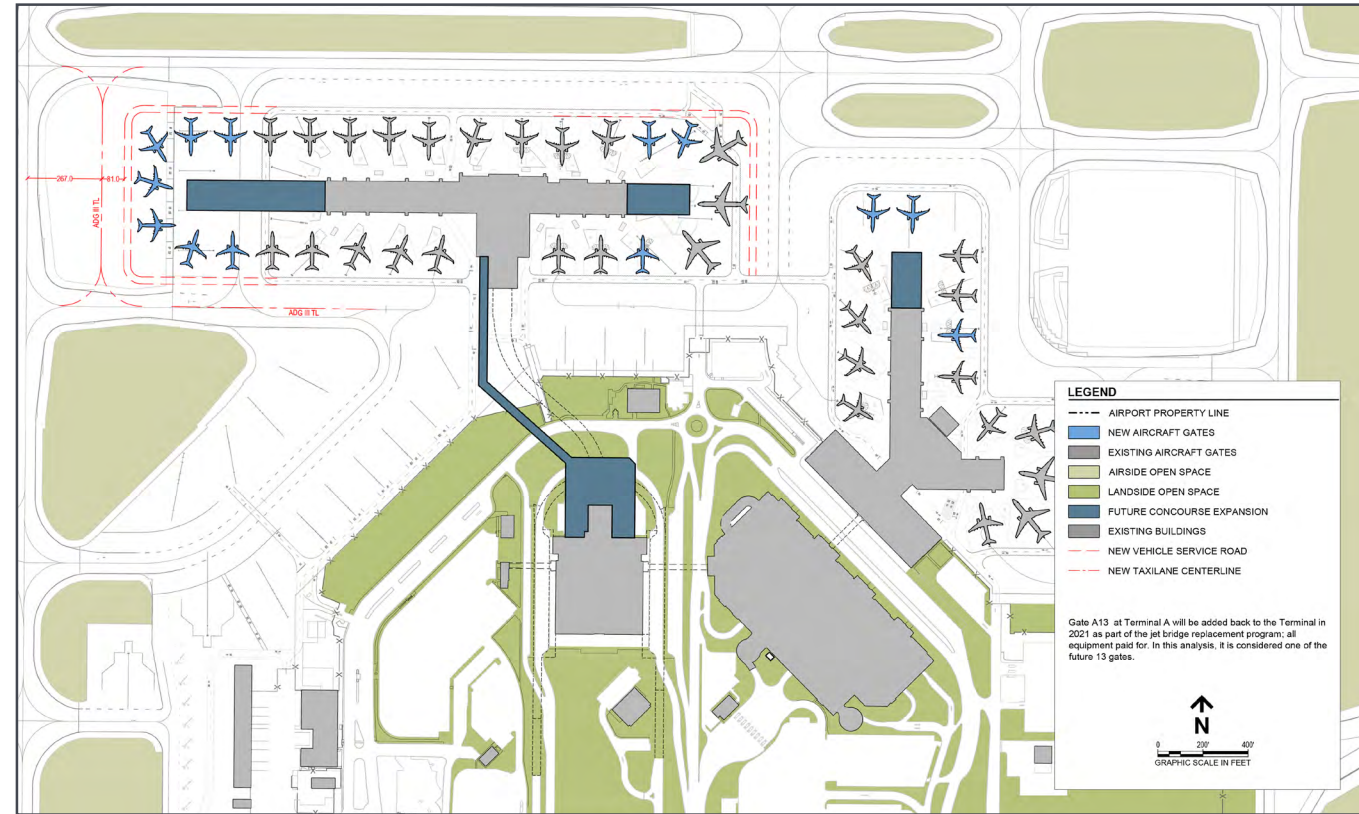
For the purpose of this Master Plan Update, the Ratio Method gating analysis is used to examine terminal expansion alternatives. To satisfy demand for 13 gates under the Ratio Method gating analysis, three terminal expansion alternatives were considered for the 20-year planning horizon (through PAL 4). All three alternatives propose construction of a new SSCP area, which creates a central processor for passengers accessing Terminal B gates, and addresses the need for additional screening lanes and queuing area. A passenger walkway is also constructed for APM redundancy, to connect the landside and airside facilities:

- Alternative 1 (**Figure 4-2**) – Concourses A and B are expanded linearly. An Alternative retained from the 2004 Airport Master Plan, Concourse B receives expansions

on both the east and west ends of the concourse for an additional 10 gates. Concourse A adds three additional gates on the north end (this includes Gate A13).

- Alternative 2 (**Figure 4-3**) – Concourse B is expanded from its west end, to the southwest at 45-degrees, which provides 10 additional gates. Concourse B is also expanded linearly to the east, which provides two additional gates. In this alternative, Gate A13 in Concourse A has been added back in use.
- Alternative 3 (**Figure 4-4**) – A new Concourse C is constructed parallel to, and south of, Concourse B to accommodate up to 12 new gates. In this alternative, Gate A13 in Concourse A has been added back in use.

Figure 4-2 Alternative 1 - 13 Gates



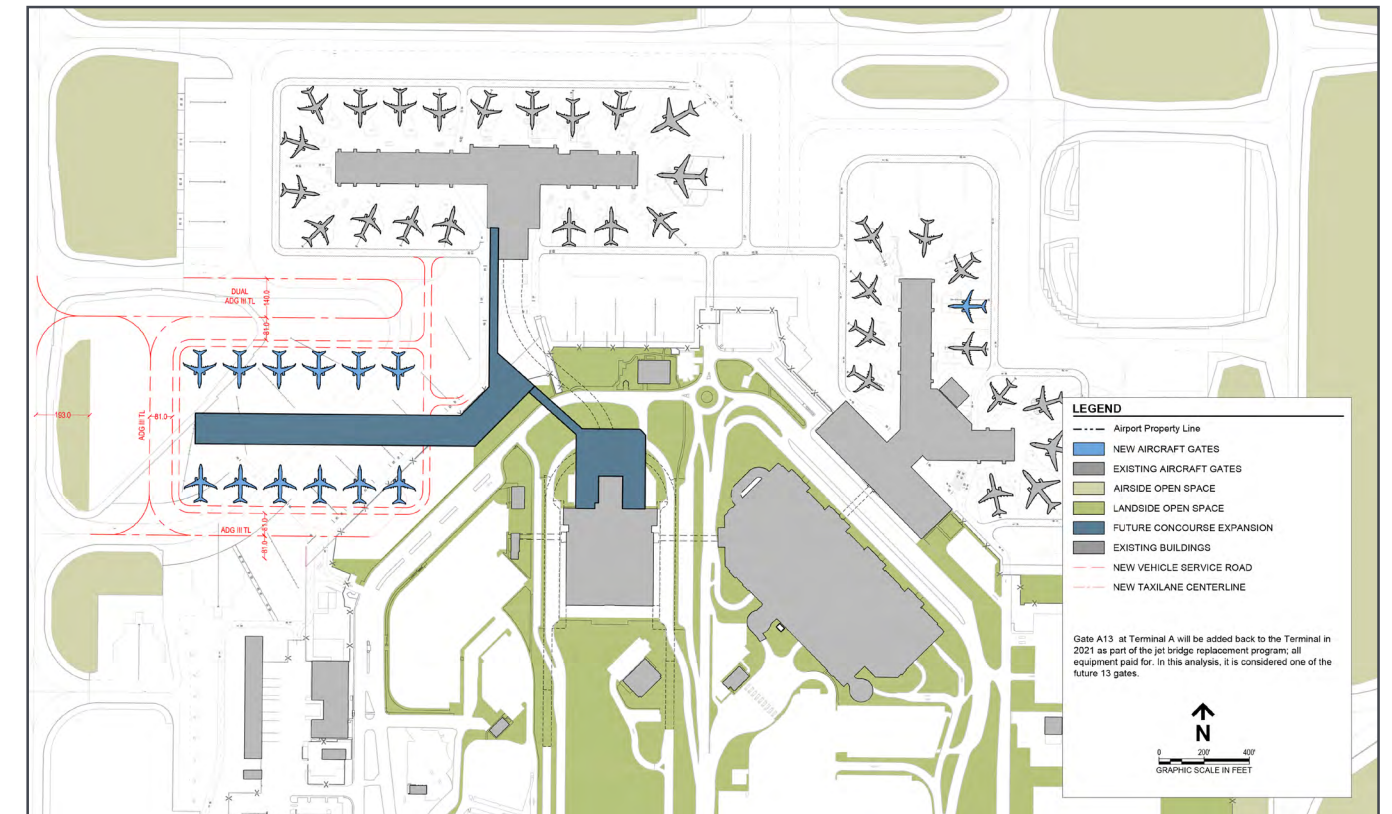
Source: Sacramento International Airport Master Plan, July 2020

Figure 4-3 Alternative 2 - 13 Gates



Source: Sacramento International Airport Master Plan, July 2020

Figure 4-4 Alternative 3 - 13 Gates



Source: Sacramento International Airport Master Plan, July 2020

Table 4-1 Assessment of Terminal Expansion Options

Alternative	Pros	Cons
13 Gates Alternative 1	<ul style="list-style-type: none"> Maintains most Concourse B RON parking Utilizes existing apron geometry Only one gate at Terminal A will become inoperable during construction. Offers flexibility to focus phased expansion at either concourse Consolidated and expanded Terminal B landside SSCP to meet demand New passenger walkway for APM redundancy between Terminal B airside and landside 	<ul style="list-style-type: none"> Increases terminal activity on physically constrained Terminal A facilities Terminal A loses 3 RON positions Even if phased, a minimum of 2 gates will be inoperable during construction, and 4 RON positions are lost at Concourse B Requires construction of new SSCP
13 Gates Alternative 2	<ul style="list-style-type: none"> Focuses expansion on single concourse with flexibility to expand on either end Can add 4 RON spots to replace those lost to expansion Dual taxiway system with pushback zones Consolidated and expanded Terminal B landside SSCP to meet demand New passenger walkway for APM redundancy between Terminal B airside and landside 	<ul style="list-style-type: none"> Increases walking distances in Concourse B Even if phased, a minimum of 2 and a maximum of 3 gates will be inoperable during construction 8 RON positions are lost at Concourse B Requires construction of new SSCP
13 Gates Alternative 3	<ul style="list-style-type: none"> Dual taxiway system Provides flexibility for phasing Gate expansion can focus on new, Concourse C, without impact to any existing gates New concourse space allows concessions program enhancement Consolidated and expanded Terminal B landside SSCP to meet demand New passenger walkway for APM redundancy between Terminal B airside and landside 	<ul style="list-style-type: none"> 10 RON positions lost Reduces aircraft compatibility on existing cargo ramp Construction of a new concourse and terminal facilities will require most capital costs. Requires construction of new SSCP

Source: Sacramento County Department of Airports, 2020

Qualitative Assessment

With input from SCDA staff, each of the terminal expansion alternatives were assessed based on their relative merits and disadvantages. The assessment is summarized in **Table 4-1**

Terminal Gating Recommendation

The preferred terminal alternative should be phased to accommodate conservative demand with the ability to expand to accommodate more aggressive demand should other factors come into play by PAL 4, such as new airline entrants, additional international service, or growth beyond the forecast.

Due to the physical constraints associated with Terminal A, along with the age of the facility, it is recommended that gate expansion be focused at Terminal B. Alternative 3 provides the most flexibility for phasing construction at Terminal B without impacting existing gates, and accommodates both near-term terminal expansion needs as well as the ultimate PAL 4 development.

To preserve gate expansion and phasing flexibility, optional phasing for Alternative 3 was developed and is shown on **Figure 4-5**. In this variation, an initial six-gate expansion is constructed on the west end of Concourse B with additional expansion accommodated at a new Concourse C, which can accommodate up to 12 gates when demand warrants the additional gate capacity.

Alternative 3 includes moving walkways to enable more efficient passenger flow within the Terminal B complex and a new consolidated SSCP to enable more effective passenger processing. An ADA-compliant walkway, protected from the elements and with no passenger access to the airport operations area (AOA) will ensure passengers have an alternate means of moving between existing Concourse B and Terminal B, and a future Concourse C. Moving walkways and escalators within this connector will provide a level of service beyond the existing infrastructure and will ensure airside security.

Alternative 3 also includes updated holdrooms, a central concourse circulation zone, strategically placed concession areas, restrooms, and building support spaces create an improved passenger experience. Dual taxilanes accessing new gates will ensure effective access to airfield facilities.

Near-term terminal expansion design and phasing will rely on further analyses and collaboration with airline partners for conclusive justification. Additional analysis is recommended to further refine ramp charts and explore opportunities for efficiencies by either reallocating airlines between the terminals or exploring the addition of common-use gates.

Aircraft RON Parking

Additional RON parking was identified in the Design Day Flight Schedule (DDFS) method gating analysis. As per that analysis, in Terminal A, up to six additional RON positions are needed through PAL 4. In Terminal B, up to three additional RON positions are needed through PAL 4, for a total of up to nine additional RON positions at the Airport. It is important to note that RON positions are linked to the addition of aircraft gates, since aircraft can park at remote positions while others can remain overnight at new gates. For this reason, no RON alternatives were developed on the west side of the Airport, as all the gating alternatives impact the availability of RON positions. On the east side, the gating alternatives do not affect the ability to add RON positions, therefore four RON parking alternative locations are evaluated in this area (**Figure 4-6**). For this analysis, all RON parking alternatives accommodate Aircraft Design Group (ADG)-III aircraft. ADG-III aircraft account for 83% of the fleet mix at SMF and are anticipated to account for 85% of the fleet mix in future years. A summary of each RON parking alternative is provided in **Table 4-2**.

Table 4-2 RON Parking Alternatives

Alternative	ADG-III Aircraft Accommodated	New Impervious Surface
Alternative A1	7	51,500
Alternative A2	8	42,500
Alternative A3	4	25,500
Alternative A4	13	67,000

Source: Sacramento County Department of Airports, 2020

Alternative A1

This alternative is located south of the existing Terminal A apron in the space currently occupied by an employee parking lot.

PROS:

- Existing electrical vault remains in-place
- Entirely new apron space; aircraft do not need to be pushed back onto active taxiways

CONS:

- Construction of a blast wall along the north perimeter of the adjacent solar farm is recommended with this option
- Provides only up to seven ADG-III aircraft parking positions

Alternative A2

This alternative is located within the island between Taxiway C1 and Taxiway C2

PROS:

- Allows for towless entry and push-back, or tow-out options with central taxilane between aircraft
- Provides up to eight ADG-III aircraft parking positions
- Currently shown on the ALP as future apron area for RON parking

CONS:

- Non-movement boundary on Taxiway C1 should be moved to Taxiway D object free area (OFA) boundary to avoid aircraft on the north side of the island from being pushed onto an active taxiway

Alternative A3

This alternative is located within the island between Taxiway W and Taxiway C1.

PROS:

Allows for towless entry and push-back, or tow-out options with central taxilane between aircraft

CONS:

- Recommended that the non-movement boundary on Taxiway C1 is moved to the OFA boundary of Taxiway D to avoid aircraft parked on the north side of the island from being pushed back onto an active taxiway; alternatively, aircraft may exit under their own power onto Taxiway W
- Provides only up to four ADG-III aircraft parking positions

Alternative A4

This alternative is located along the north edge of the Taxiway W pavement, south of the solar farm.

PROS:

- Provides for the most lead-in lines in one single area as compared to the other three options (up to 13 ADG-III parking positions)

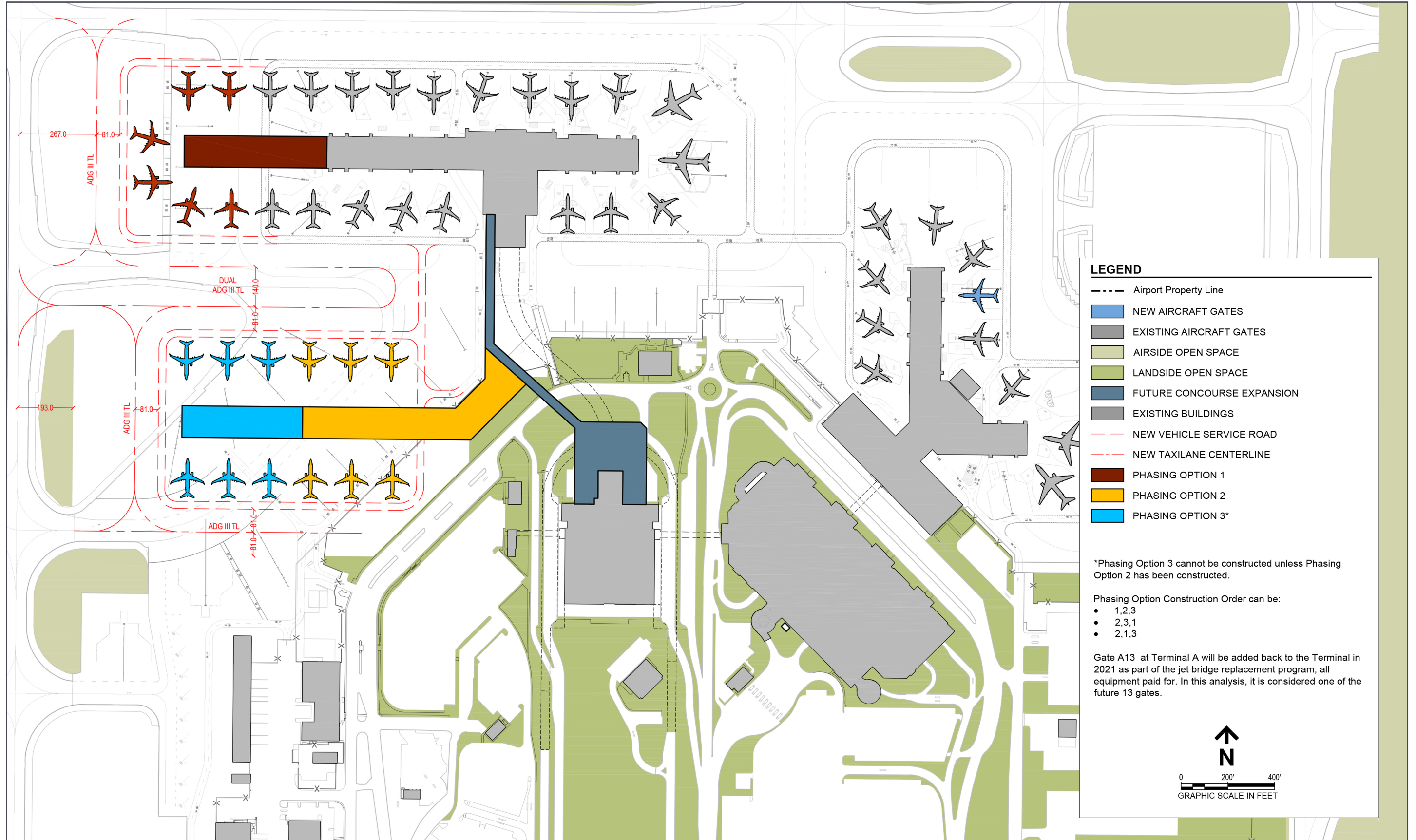
CONS:

- Aircraft will need to be pushed back onto an active taxiway
- This configuration is in conflict with future Taxiway V construction

RON Recommendation

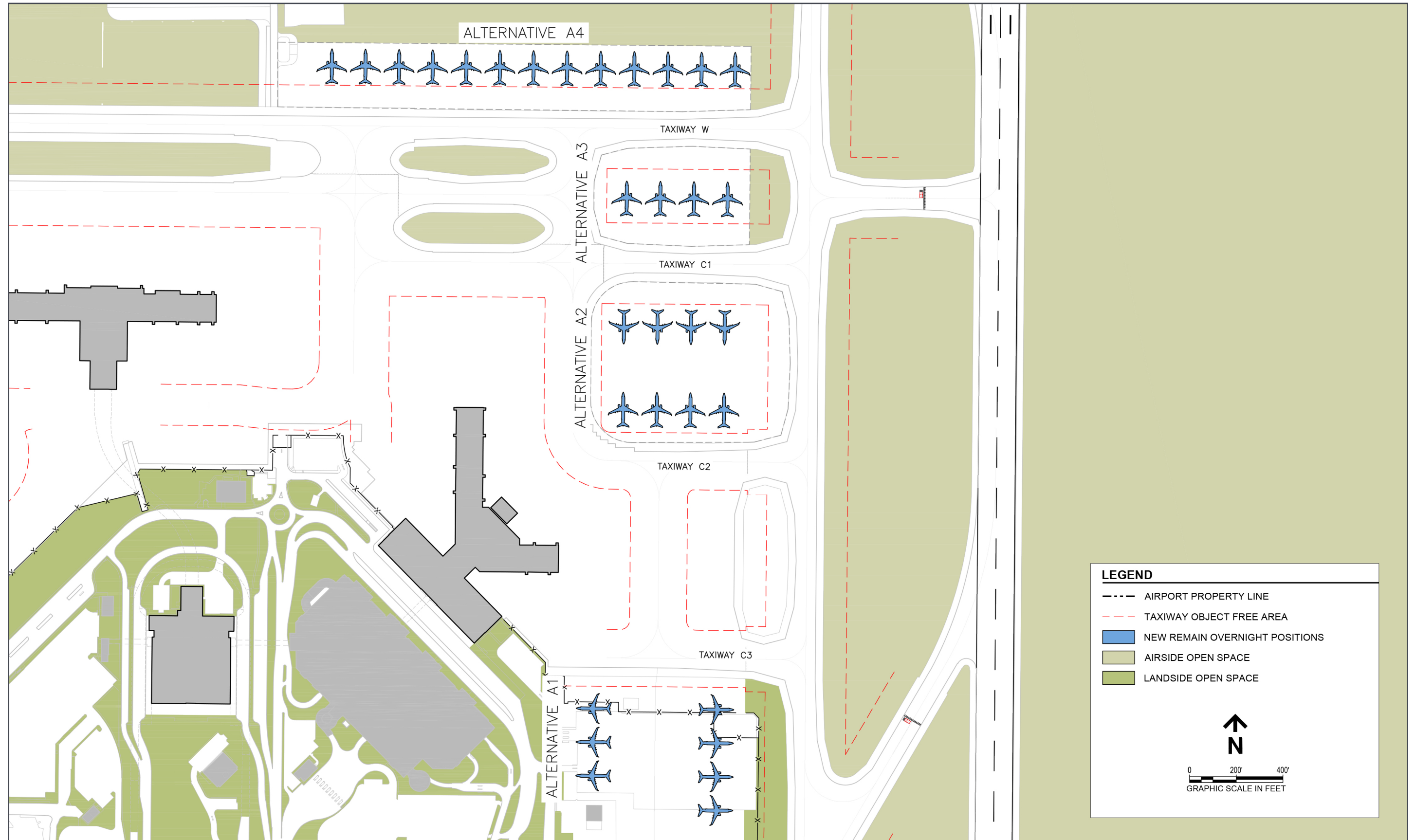
Each of the RON parking alternatives are viable options for future RON aircraft parking. Alternative A2 has previously been analyzed for its operational and parking benefits and is currently shown on the ALP as future apron area for RON parking. Alternative A2 increases RON by eight positions and for the majority of the terminal expansion options, the additional positions provided in Alternative A2 will accommodate demand through PAL 4. Alternative A2 is alternative recommended by the SCDA.

Figure 4-5 Alternative 3 - 13 Gates with Phasing Options



Source: Sacramento International Airport Master Plan, July 2020

Figure 4-6 RON Parking Alternatives



Source: Sacramento International Airport Master Plan, July 2020

4-3

GROUND TRANSPORTATION AND PARKING

Public parking requirements increase from approximately 16,400 spaces under baseline conditions to nearly 25,000 spaces by PAL 4. This is driven largely by the need for the Airport to accommodate all public parking customers in on-airport facilities. A variety of public parking sites and products are considered, as shown in **Figure 4-7**.

Close-In Public Parking Alternatives

Close-in parking facilities are defined as being within a 1,500-foot “walkable” distance of the passenger terminals. The shape of the existing SMF terminals, supporting airfield, and existing landside assets limits new close-in parking facilities to specific locations, each shown in **Figure 4-7**. In most cases, new parking revenue controls will have to be established.

- Public Parking facility #18 replaces the Hourly B public parking lot with an Hourly B garage, which could be six or seven levels and provide at least 3,400 parking spaces.
- Public Parking facility #19 is an expansion of the Parking Garage B and would be constructed to the same height and grow the facility to approximately 5,100 spaces (similar size to Garage A).
- Facility #20 is a consolidated rental car facility with an option to include public parking; approximately 3,640 public parking spaces could be constructed.
- Facility #25 is a 1,500-space expansion of the Terminal A garage to the southeast of the existing facility.

Remote Parking Alternatives

Remote parking facilities at the Airport require shuttle buses to provide customer connectivity between the parking facility and the passenger terminals. Approximately 55% of existing parking facilities at SMF are remote parking facilities. The following remote parking alternatives were considered, as shown in **Figure 4-7**:

- Facility #23 is a new southward expansion of the existing East Economy Parking Lot, providing 2,800-spaces.
- Facility #21 is an eastward expansion of the East Economy Lot, providing approximately 1,800 new parking spaces
- Facility #24 is a potential future southward expansion of Economy Lot #23, providing 3,700 parking spaces



Public Parking Assessment and Recommendation

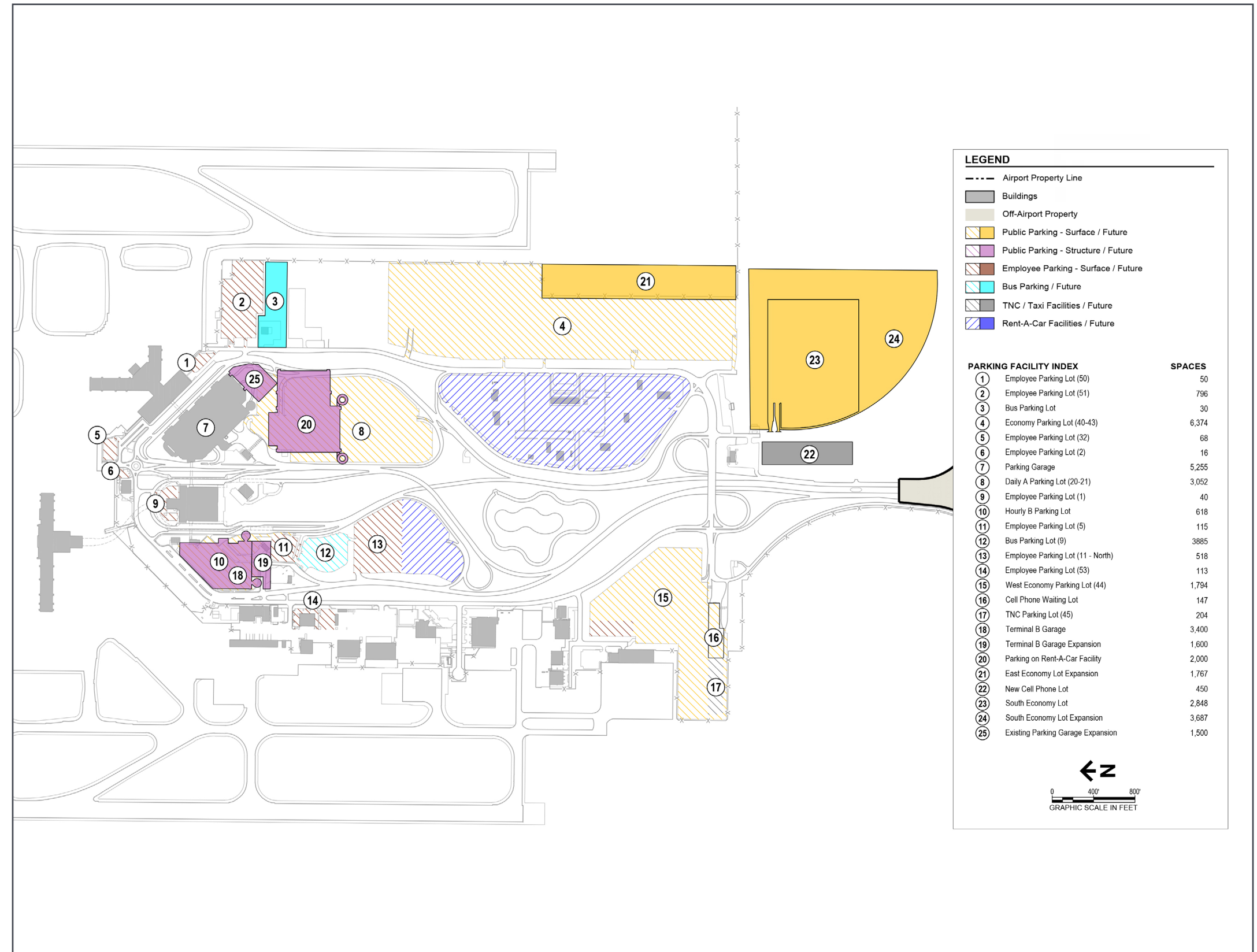
Determining a preferred public parking alternative(s) relies on striking the right balance between 1) a higher capital cost, with higher revenue generating and level of service aspects of close-in parking facilities, and 2) a lower capital cost, with lower net revenue generating remote parking facilities.

To meet close-in demand and compensate for public parking spaces lost in the Daily Lot, the recommendation is to construct a garage on the current Hourly B surface lot in either one or two phases based upon demand. Additional remote surface parking should be constructed in phases to meet demand, but also to minimize O&M costs associated with shuttle bus operations.

Some public parking projects are currently in various stages of development from planning to design. The Airport should continue to identify parking projects based on development timelines and costs that can be balanced with revenues as parking demand fluctuates with changing aviation demand and customer needs.

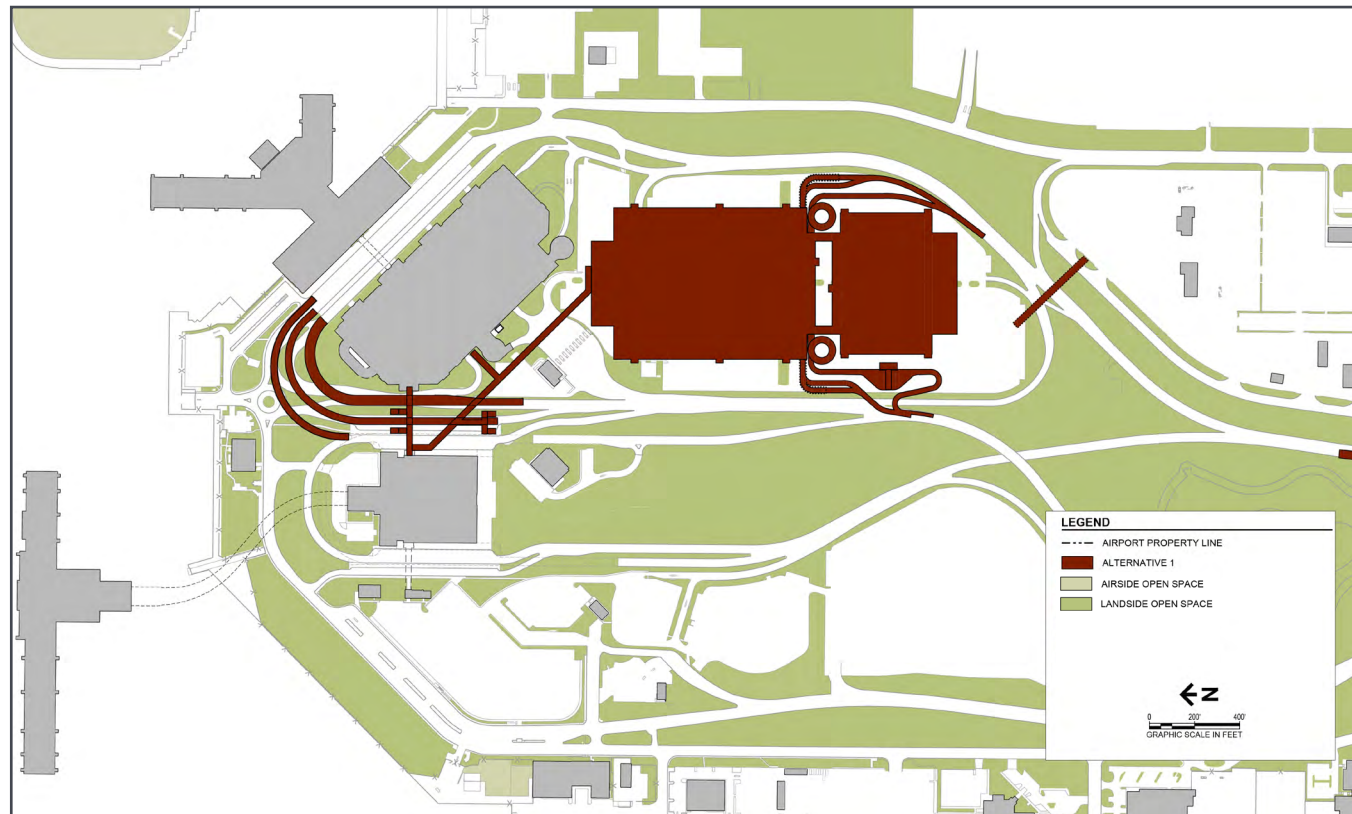


Figure 4-7 Proposed Parking Expansion Sites



Source: Sacramento International Airport Master Plan, July 2020

Figure 4-8 ConRAC Alternative 1



Source: Sacramento International Airport Master Plan, July 2020

Figure 4-9 ConRAC Alternative 2



Source: Sacramento International Airport Master Plan, July 2020

Rental Car Facility Alternatives

The existing rental car site at SMF has been operating in a constrained environment for some time and has an inefficient layout with deficient security for modern car rental activities. All planning for rental car operations has been in an effort to construct a new consolidated rental car facility. Once this happens, the existing car rental site and facilities can be re-purposed for rental car maintenance, some other airport function, or a combination of the two.

ConRAC Alternative 1

ConRAC Alternative 1, shown in **Figure 4-8**, features a two-level ready/return garage with a QTA in a separate two-level structure adjacent to, and on the south side, of the existing parking garage. The ready/return garage has a floorplate of approximately 440,000 square feet and provides space for approximately 635 ready spaces and 410 return spaces on each level. The ConRAC facility connects to the passenger terminals via new elevated walkways so that customers have an indoor, conditioned space. A customer service building is provided on the north side of the ready/return garage.

The footprint of ConRAC Alternative 1 displaces nearly the entire daily public parking lot. An additional level of parking could be included for rental car storage, which would help the RACs operate the facility at maximum efficiency. Finally, a roadway overpass is shown over the Terminal A entrance roadway, connecting from the south side of the QTA to the existing RAC area, which would continue to serve as RAC vehicle storage and heavy maintenance.

ConRAC Alternative 2

Figure 4-9 shows a potential entire replacement of the existing Terminal A parking garage with a combined ConRAC and public parking facility. The new replacement facility is ideally located adjacent to both Terminal A and Terminal B, minimizing walking distances for both RAC and public parking customers.

The existing garage was constructed in 2001 and is not quite 20 years old at the time of this Master Plan Update; or, roughly halfway through its potential useful life. A March 2020 structural condition assessment by the Watry Design Group determined that the existing garage is in good condition and can last many more years with appropriate preventative maintenance. The cost of demolishing and replacing an asset in good condition does not justify further consideration of this alternative.

ConRAC Alternative 3

ConRAC Alternative 3, shown in **Figure 4-10**, is a four-level ready/return garage, with approximately half the footprint of Alternative 1. The QTA is two levels with a level of RAC storage parking above the fuel and wash facilities. Other elements of ConRAC Alternative 3 are similar to Alternative 1 including the connecting walkways and customer service building.

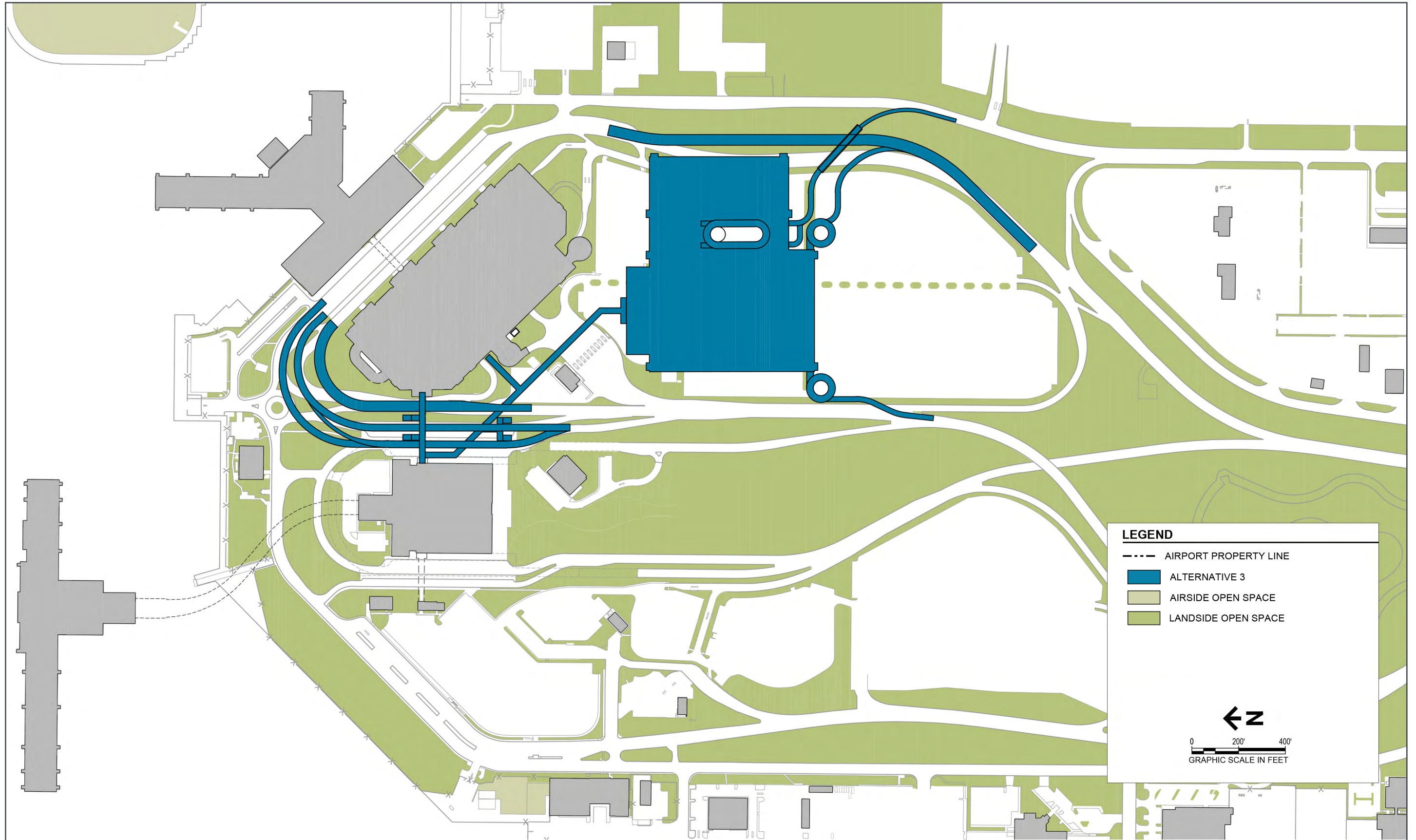
Because the footprint of the ready/return garage in Alternative 3 is much smaller than in Alternative 1, the impact to the daily public parking lot is reduced. Replacement parking could be accommodated in a new Terminal B garage or in new remote surface parking.

ConRAC Assessment and Recommendation

Key evaluation criteria to determine whether ConRAC Alternative 1 or 3 is preferred include cost, constructability, and RAC stakeholder preference. The decision is also influenced by the preferred locations and project timelines for public parking facilities since both alternatives impact public parking.

ConRAC Alternative 3 impacts less public parking due to its smaller footprint, and offers flexibility in being constructed as either a two-level or four-level facility based on anticipated demand. Replacement public parking within the ConRAC can also be included as part of Alternative 3; therefore, this is the preferred alternative.

Figure 4-10 ConRAC Alternative 3



Source: Sacramento International Airport Master Plan, July 2020

Airport Roadway Improvements

Roadway demand nearly reaches capacity on Airport Boulevard under baseline conditions. As new close-in parking and rental car facilities are constructed to accommodate demand, new roadway capacity will be needed to help passengers enter and exit the Airport. Currently two projects are underway to alleviate near-term congestion: 1) the Interstate-5 interchange improvements, and 2) the Elkhorn Boulevard extension.

Future Airport Roadway Improvements

Though some capacity issues currently appear on the inbound roadways in future PALs, several of the parking and ground transportation alternatives will require improvements to those roadways or will have to utilize other existing on-airport roadways that are currently under-utilized or have additional capacity. One example of this is the Terminal A bypass exit, which could alleviate congestion at the traffic circle and adjacent to Terminal B.

A separate traffic study is underway at the time of this Master Plan Update to review roadway connectivity with on-airport traffic generators such as curbside, parking, and rental car facilities, and to ensure that safety and capacity are addressed at each of the on-airport roadway intersections.

Curbsides and Ground Transportation Center

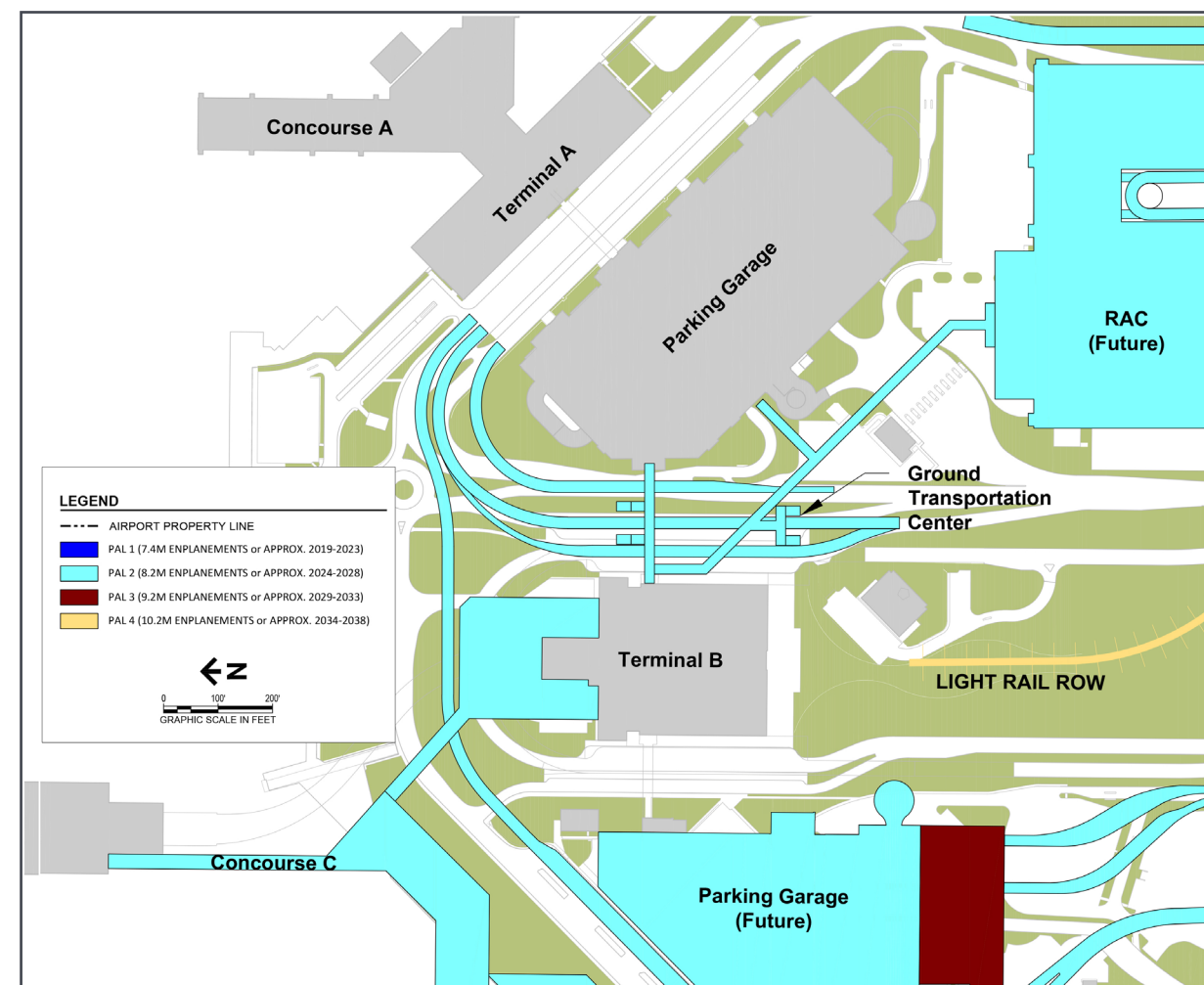
The total curbside capacity at the Airport is adequate through PAL 4. If operations are consolidated or focused more at Terminal B, then the roadway capacity on the upper level of Terminal B, as well as that curb length, will become more congested and will need to be re-evaluated. Consideration should be given to providing additional lanes that connect the east and west sides of Terminal B. Alternative access should also be provided to one of the terminal curbs to unlink the two sides and eliminate the need for passengers on both sides. Building additional curb capacity, or optimizing curbside space by pickup vs. drop-off, and by commercial vs. private vehicles, will extend the life of the existing curbs at both

terminals, but it may also trigger the need for new curbside roadways.

One alternative within the terminal core that will drive efficiency is construction of a new, consolidated ground transportation center (GTC) to replace the existing GTC facilities at Terminal A and Terminal B. **Figure 4-11** shows the potential configuration of a consolidated GTC located between Terminal B and the existing Terminal A garage. The facility would consist of two or three roadways parallel to the existing Terminal B curbside roadways.

Commercial vehicle activities such as shuttles, taxis, limos, transportation-chartered parties, and transportation network companies (TNCs) would each have space allocated on the curbside roadways of the GTC. Elevated walkways would connect Terminal A and Terminal B to the GTC. This consolidated GTC could be used for both passenger pickup and drop-off activities, which would reduce congestion on the existing curbside roadway infrastructure. One key enabling project required to create physical space for the GTC in the proposed location is the re-routing of the Terminal A exit roadway counterclockwise, around the north side of Terminal B, south of the roundabout and under the automated people mover (APM) guideway. The roadway would rejoin the Airport exit roadway on the west side of the existing Hourly B lot site.

Figure 4-11 Ground Transportation Center



Source: Sacramento International Airport Master Plan, July 2020





4-4

SUPPORT FACILITIES

This section describes the site assessment completed for air cargo, general aviation (GA), airport maintenance, and commercial development at the Airport. Based on the assessment, it was concluded that (1) most support facilities at the Airport are suitably located, and (2) the site assessment is useful as a land use management tool as opportunities for new Airport development arise. Commercial development opportunities that compete with space needs for on-Airport functions will continue to be considered on a case-by-case basis.

The following support facilities are not part of this analysis:

- ARFF is excluded from this analysis because a new facility that meets demand through PAL 4 is planned for construction in 2020.
- Fuel storage is excluded from this analysis because the existing fuel farm is relatively new and has the capacity to accommodate fuel storage requirements through the PAL 4 planning period.
- Office space for airport administration needs will be assessed during a more focused terminal study.
- Catering facility requirements are not expected to outgrow the existing facility size throughout the planning period.
- Neither the FAA Flight Inspection Field Office (FIFO) nor the United States Post Office are expected to require additional facilities during the planning period.

Support Facilities Sites Assessed

Based on the existing land use at the Airport and input from SCDA staff, five broad study areas were identified (i.e., sites), located in different sections of the Airport, as shown on the key map provided in **Figure 4-12**.

Site 1: North Airfield Area - Located north of Taxiway W, this site currently houses the ARFF facilities, maintenance facilities, and temporary structures.

Site 2: I-5 Interchange Area - Located south of Crossfield Drive, this site is largely undeveloped.

Site 3: Economy Lot Area - Located between Aviation Drive and Taxiway D, this site is primarily used as an economy parking lot.

Site 4: Remain Overnight Apron Area between Cargo Facilities and Concourse B - This site is currently used for cargo operations and RON parking.

Site 5: West Airfield Area - Multiple buildings on this site are located between Taxiway A and Lindbergh Drive, and some have direct airfield access.

Cargo Facilities

The estimated cargo volume by PAL 4 requires warehouse capacity of approximately 1,037,036 square feet. An additional cargo apron, approximately 3,500 feet in length, is also required.

The three likely sites for new cargo facilities are the Economy Lot Area (Site 3), the West Airfield Area (Site 5, existing location), and the North Airfield Area (Site 1). The North Airfield Area can provide cargo operators with separate landside access for their trucks to access CA-99 (and then I-5) via Elverta Road. The existing cargo buildings (on Site 5) are used by cargo operators and airlines for warehousing belly cargo and provisioning supplies

General Aviation Facilities

The FBO Lease and Development Agreement with the County describes a 22-acre, multiphase expansion of the GA area at the Airport. The FBO development addresses the GA demand through PAL 4. No other GA operators at SMF expressed a need for additional GA facilities.

The West Airfield (existing location) meets all the required characteristics for future expansion to meet forecast demand through PAL 4. A completely new facility on another site would likely not be cost-effective.

Maintenance Facilities

Airport maintenance requirements were developed based on information provided by SCDA staff, who identified a total land requirement of 18 acres, or 784,080 square feet of land for expansion in support of airport operations (which includes storage, maintenance, and refuse/recycling yards). SCDA staff also identified several operational deficiencies that result from Airport maintenance functions being located in separate facilities and different locations at the Airport. Consolidating various Airport maintenance functions in a single area is a preferred option. Site 1 (the North Airfield Area) meets all the requirements for maintenance expansion, improvements, or consolidation through PAL 4.

There has been interest in developing aircraft Maintenance, Repair, and Overhaul (MRO) facilities from the airlines at SMF. Three sites have been identified for MRO facilities at the Airport. All of the locations offer direct airfield access: 1) the first site is to the west of Taxiway D and north of the north solar farm, 2) the second site is to the east of Taxiway A and north of Taxiway W, and 3) the third site replaces the existing employee parking lot north of the east solar farm and east of Terminal A.

As aircraft operations continue to grow (both commercial and cargo), preserving space for MRO facilities will offer existing and new-entrant airlines the additional capability and benefit to perform MRO on their fleet.

Commercial Development

The five sites were evaluated for potential development in response to three commercial development opportunities:

- Travel Center (Truck Stop)
- Second Gas Station
- Structural Fire Station

The I-5 Interchange Area (Site 2) is the best fit for commercial development due to its access to roadways and the I-5, its minimal obstruction to nearby facilities, and its location being away from most airport functions.

Development on either side of I-5 within Site 2 is possible. South of the I-5 offers greater flexibility for a developer, but the lack of infrastructure connections will require larger upfront investment. Commercial development north of the I-5 will likely require additional changes to the roadway infrastructure or configuration as traffic increases.

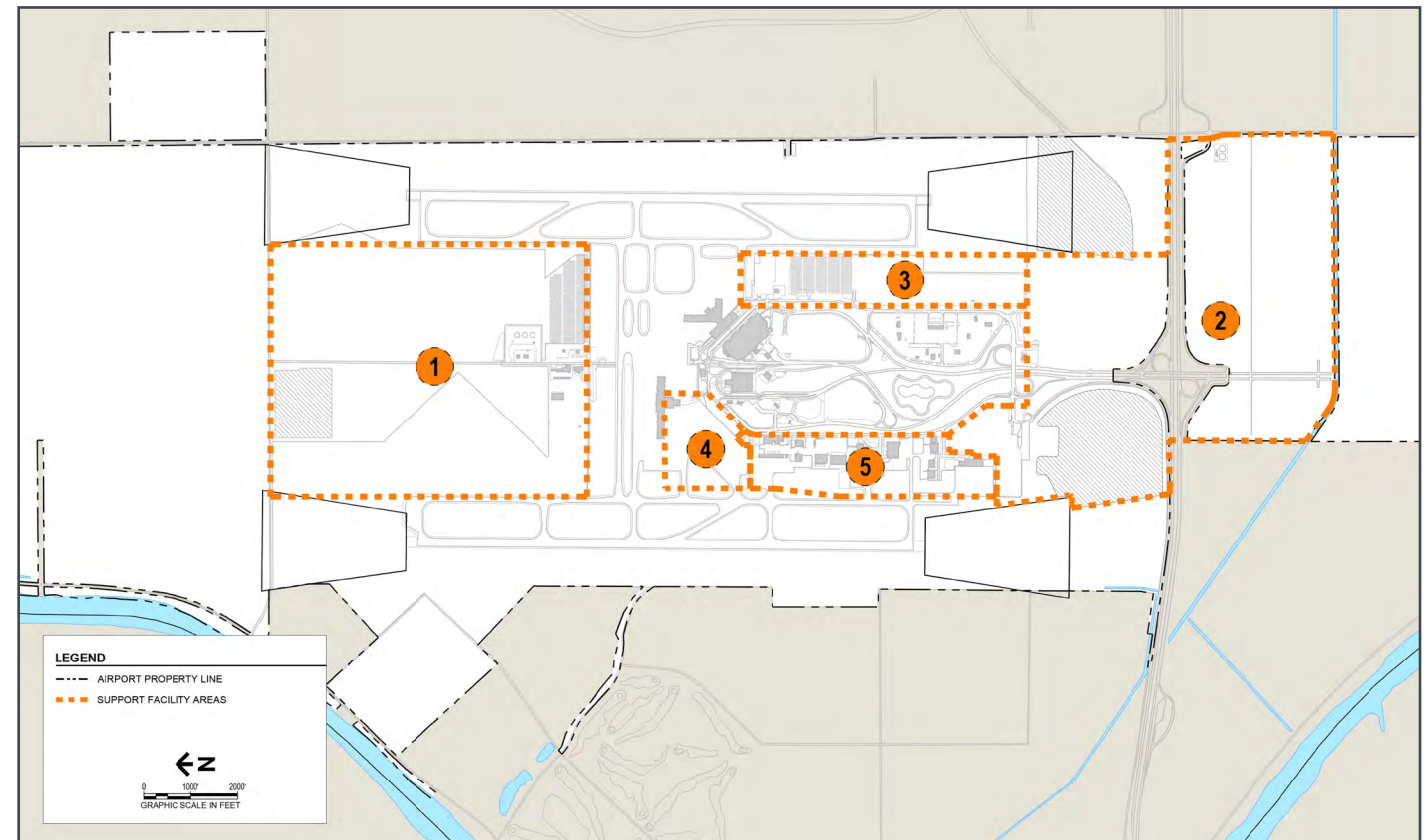
Site Assessment

The following site characteristics are used to rank each of the five sites based on professional judgment and experience at the Airport:

- Airfield Access
- Landside Access
- Taxiway Frontage
- Existing Facilities
- Geometric Characteristics
- Environmental

The pros and cons of each site are described in **Table 4-3**.

Figure 4-12 Support Facility Sites



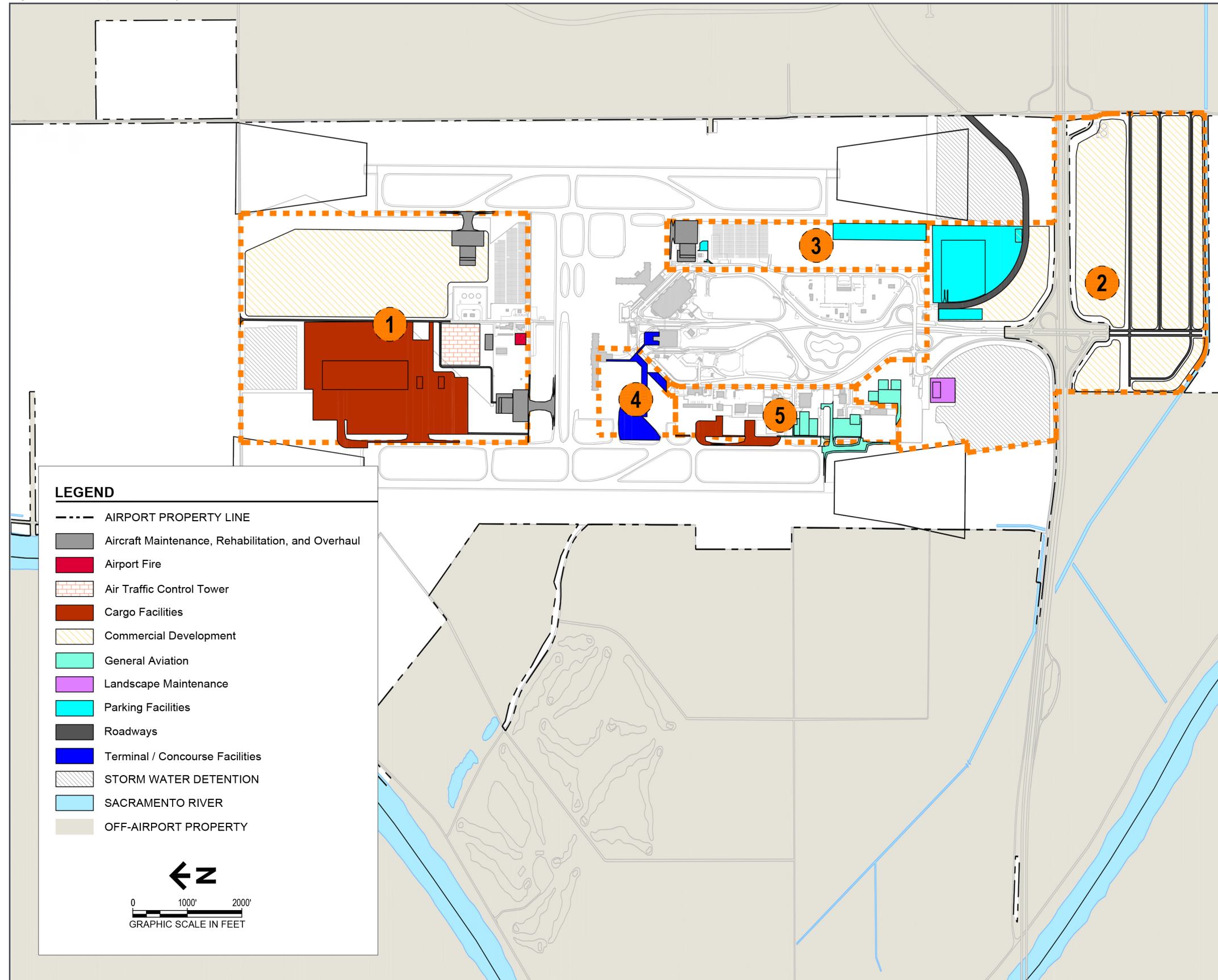
Source: Sacramento International Airport Master Plan, July 2020

Table 4-3 Site Pros and Cons

Site	Pros	Cons
1 - North Airfield	<ul style="list-style-type: none"> • Good airfield access • Good taxiway frontage • Good geometric characteristics • No major environmental impacts • Can provide cargo operators with separate landside access for their trucks to access CA-99 (and then I-5) via Elverta Road • Can provide cargo operators with immediate access to runways, some access to airport roadway segments, and has minimal obstruction to nearby facilities; site is away from terminals and can accommodate a new tenant; no obstruction to facility expansion(s) • Meets requirements for maintenance facilities because of access to all parts of airport, has minimal obstruction to nearby facilities, and is away from other tenants • For GA facilities, provides immediate access to airfield; minimal obstruction to nearby facilities; site can accommodate new tenant; does not obstruct major facility expansion 	<ul style="list-style-type: none"> • Access for passengers using the terminal (landside access) is unavailable • Fair existing facilities
2 - I-5 Interchange Area	<ul style="list-style-type: none"> • Good landside access • Good geometric characteristics • No major environmental impacts • Preferred site for commercial development due to access to roadways and I-5, minimal obstruction to nearby facilities, and away from current airport functions 	<ul style="list-style-type: none"> • Poor airfield access • No taxiway frontage • No existing facilities • Poor site for future GA as no access to airfield • Poor site for future cargo as no immediate access to runways
3 - Economy Lot Area	<ul style="list-style-type: none"> • Good airfield access • Good landside access • Good taxiway frontage • Good geometric characteristics • No major environmental impacts • Can provide cargo operators with immediate access to runways, has access to airport roadway segments, minimal obstruction to nearby facilities; site is away from terminals and can accommodate a new tenant • For GA facilities, provides immediate access to airfield, access to airport roadways segments; minimal obstruction to nearby facilities; site can accommodate new tenant 	<ul style="list-style-type: none"> • Fair existing facilities • Away from existing GA facilities; new GA facilities in this location would require greater investment • Is currently used for airport parking; this lot has been reaching constrained levels
4 - RON Area	<ul style="list-style-type: none"> • Good airfield access • Good taxiway frontage • Good geometric characteristics • No major environmental impacts 	<ul style="list-style-type: none"> • Fair landside access • Fair existing facilities • Poor site for maintenance facility expansion as there would be obstruction to nearby facilities • Poor site for GA expansion as there is potential for obstruction to nearby facilities, site is too close to concourses, and may obstruct major facility expansion • Poor site for cargo expansion as there is potential for obstruction to nearby facilities, site is too close to concourses, does not accommodate a new tenant well, and may obstruct major facility expansion
5 - West Airfield	<ul style="list-style-type: none"> • Good airfield access • Good landside access • Good taxiway frontage • Good geometric characteristics • No major environmental impacts • For GA facilities, provides immediate access to airfield, access to airport roadway segments; minimal obstruction to nearby facilities; site is away from concourses; existing GA facilities located on this site 	<ul style="list-style-type: none"> • Fair existing facilities • Poor site for maintenance facility expansion as there would be obstruction to nearby facilities; site is away from most existing maintenance facilities

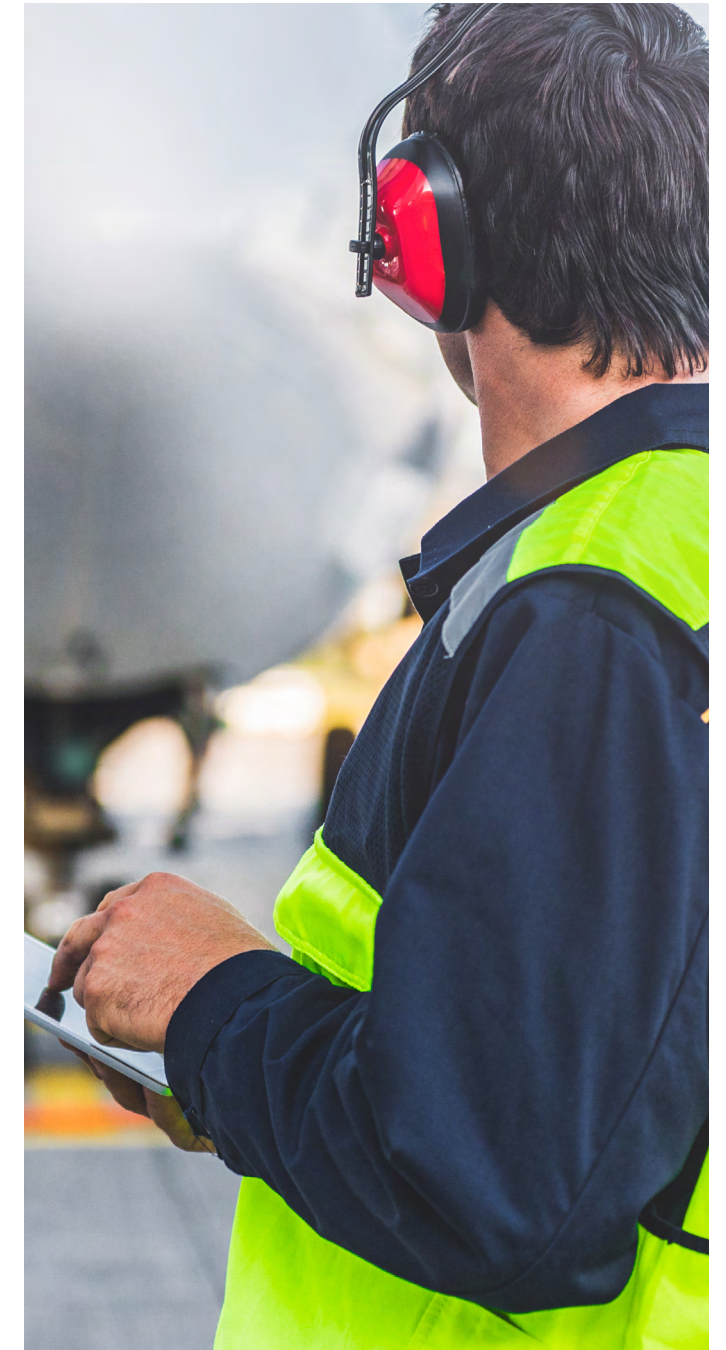
Source: Sacramento County Department of Airports, 2020

Figure 4-13 Support Facility Land Use Recommendations



Support Facilities Recommendation

The recommended land uses for each of the five development sites are shown on **Figure 4-13**. Generally, Site 1 is focused on cargo development, maintenance facilities, and MRO; Site 2 is focused on commercial development; Site 3 is focused on parking facilities; Site 4 is focused on terminal expansion; and, Site 5 is focused general aviation and cargo development.



Source: Sacramento International Airport Master Plan, July 2020

4-5

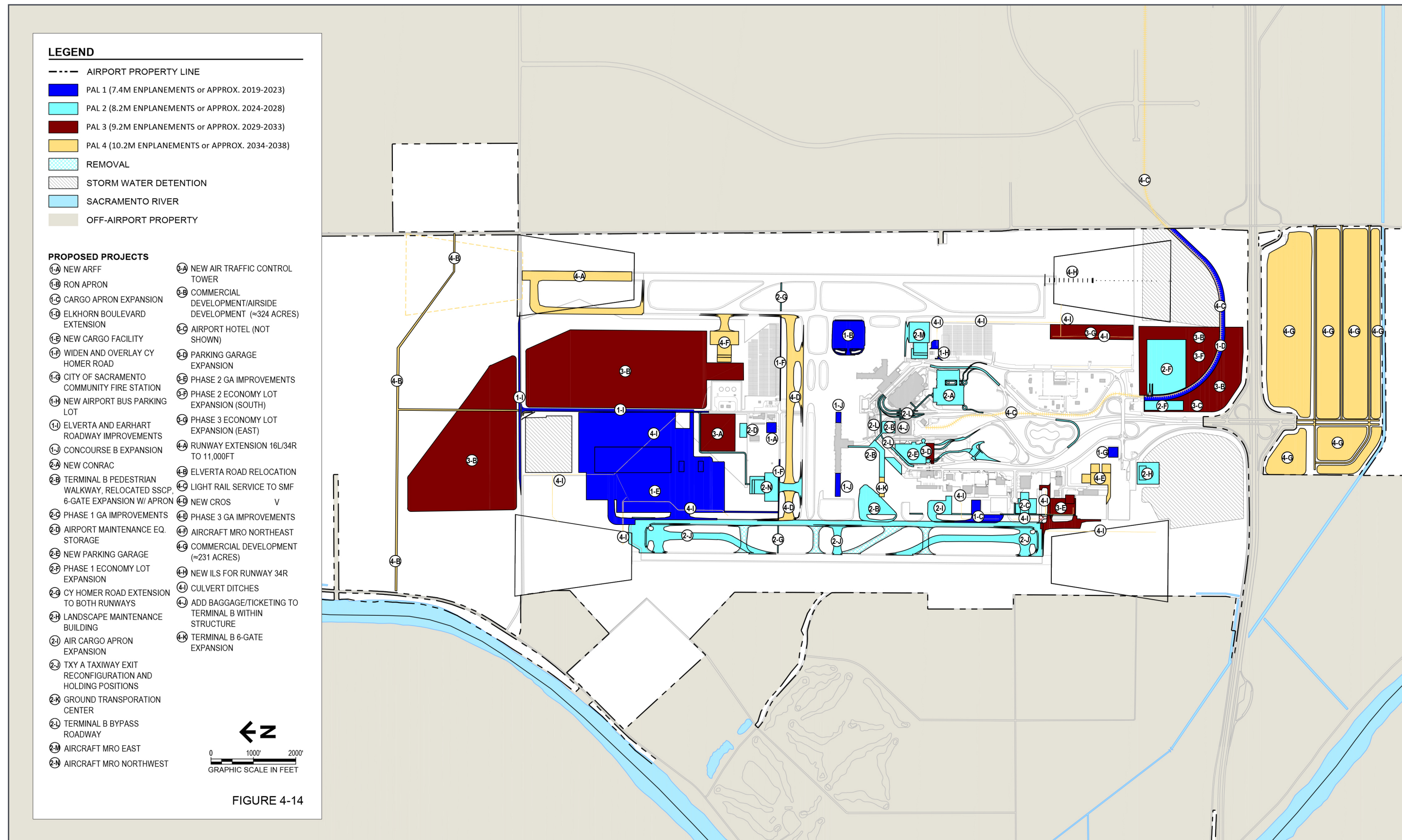
PREFERRED ALTERNATIVE

In determining the preferred alternative (**Figure 4-14**) for the Airport, SCDA staff considered existing land use development patterns, operational needs, operational impacts, discussions with tenants, long-term operations and maintenance costs, and longer-term growth requirements.

- The existing area identified for a Runway 16L/34R extension and parallel Taxiway D extension will continue to be reserved, should it be needed.
- The areas for Taxiway V, Taxiway A connectors, holdpads, and the replacement ATCT will continue to be reserved.
- Terminal Alternative 3, with optional phasing on Concourse B, provides the most flexibility to accommodate near-term terminal expansion needs and PAL 4 demand and will be reserved as such.
- RON Alternative A2 will be reserved as future apron area for RON parking.
- Construct a garage on the current Hourly B surface lot in either one or two phases to meet close-in parking demands and compensate for public parking spaces lost in the Daily Lot. Additional remote surface parking should also be constructed in phases to meet demand, but also to minimize O&M costs associated with shuttle bus operations.
- ConRAC Alternative 2, with its smaller footprint is the preferred alternative. Cost, constructability, and RAC stakeholder input will determine whether a two-level or four-level ConRAC is ultimately constructed at SMF.
- Site 1 and Site 5 will be reserved for air cargo development.
- Site 1 will be reserved for maintenance facility development and MRO facilities.
- Site 2 will be reserved for commercial development.
- Site 3 will be reserved for parking.
- Site 4 will be reserved for terminal development
- Site 5 will be reserved for general aviation development.



Figure 4-14 Preferred Alternative



Source: Sacramento International Airport Master Plan, July 2020

Phasing

The phasing plan for the Preferred Alternative is a combination of projects dependent upon planning activity levels (PALs) as described in Section 2 – Forecast, and projects driven by marketplace and fiscal readiness. For the purpose of this section, projects as closely tied to each PAL are grouped together. Section 5 – Development Plan, will describe the estimated timeline and financial cost of each project in more detail.

The Preferred Alternative projects are shown on **Figures 4-15, 4-16, 4-17, and 4-18**, as per the corresponding alphanumeric list below.

PAL 1

- 1-A) New ARFF station building north of CY Homer Road and west of Earhart Drive
- 1-B) Additional terminal apron in proximity to Concourse A (RON Apron)
- 1-C) Cargo apron expansion of the southern portion of the existing air cargo apron pavement
- 1-D) Elkhorn Boulevard extension from Metro Air Park to Crossfield Drive
- 1-E) New air cargo building and air cargo apron with a taxiway connector to Runway 34R end
- 1-F) Widen (and Overlay) Cy Homer Road to two lanes
- 1-G) New community fire station at northwestern corner of Lindbergh Drive and Crossfield Drive; fire station to be built by the City of Sacramento Fire Department on County-owned land
- 1-H) New shuttle bus maintenance and staging facility east of Aviation Drive
- 1-I) Elverta and Earhart Roadway Improvements
- 1-J) Concourse B Expansion

PAL 2

- 2-A) Consolidated Rent A Car Facility (ConRAC)
- 2-B) Terminal B pedestrian walkway, relocated SSCP, and gate expansion (6 gates) with apron
- 2-C) Phase 1: General aviation area improvements/ expansion including corporate hangars, fixed base operator facility, and apron
- 2-D) New airport, airfield, and equipment maintenance buildings north of Cy Homer Road
- 2-E) New Parking Garage (Hourly B Lot)
- 2-F) Phase 1: Expansion of Economy parking surface lot north of I-5 and east of Airport Boulevard to accommodate 2,800 automobile parking spaces
- 2-G) Extension of Cy Homer Road to both runways
- 2-H) Landscape maintenance area and building south of the General Aviation area and employee parking lot
- 2-I) Rehab and expansion of northern portion of the existing air cargo apron pavement
- 2-J) Taxiway A holdpads and high-speed, perpendicular taxiway exists for RWY 16R/34L
- 2-K) Ground Transportation Center (shared components with ConRAC)
- 2-L) Terminal B Bypass Roadway
- 2-M) MRO Facility (East side adjacent to Terminal A)
- 2-N) MRO Facility (Northwest side adjacent to new air cargo development)

PAL 3

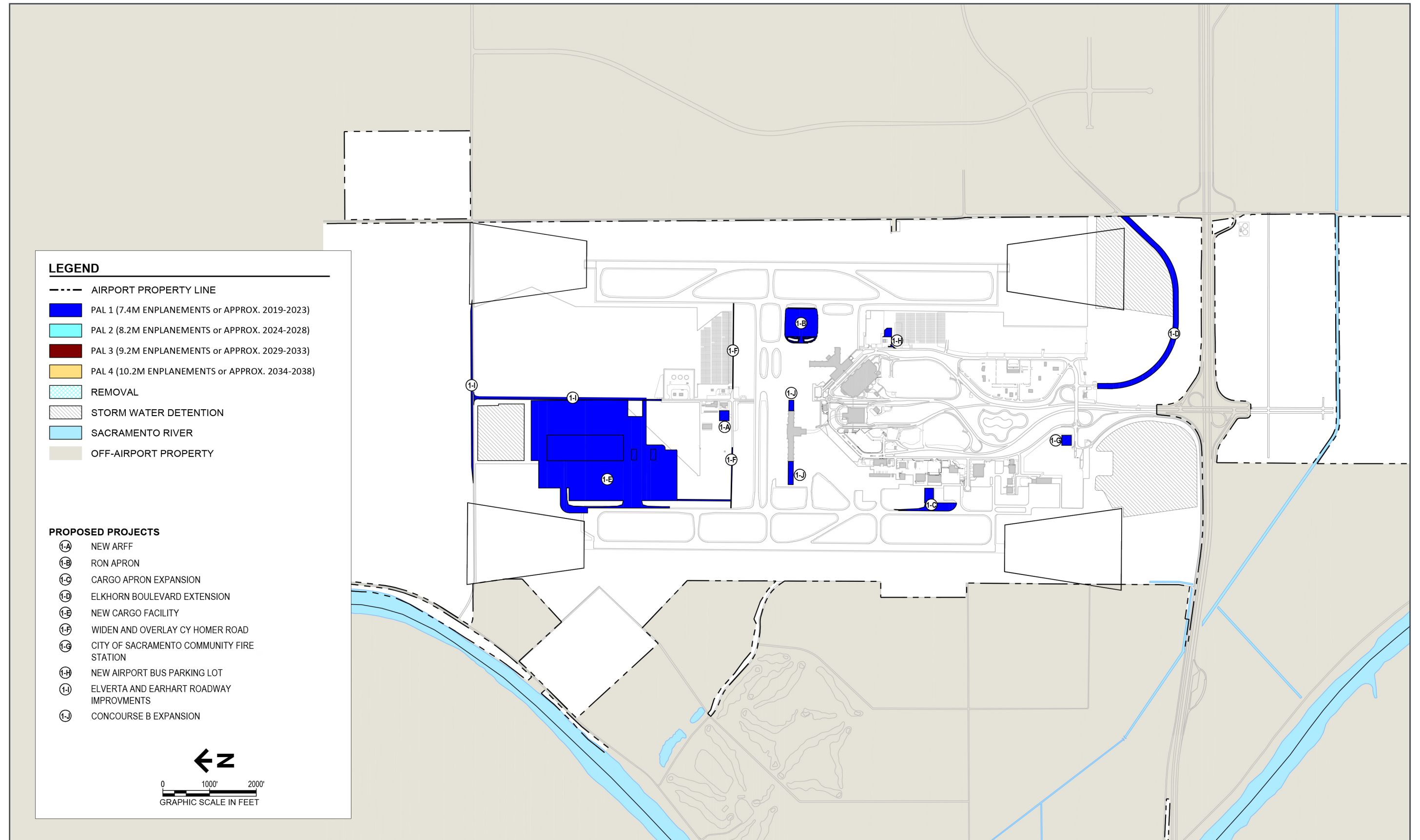
- 3-A) New ATCT north of Cy Homer Road and west of Earhart Drive
- 3-B) Commercial development north of I-5 and east of Airport Boulevard, as well as east of Earhart Road and north of existing Elverta Road (approximately 324 acres)
- 3-C) Airport Hotel (not shown)
- 3-D) Expand Terminal B parking garage
- 3-E) Phase 2: General aviation area improvements/ expansion including corporate hangars, fixed base operator facility, and apron
- 3-F) Phase 2: Expansion of Economy parking surface (south)
- 3-G) Phase 3: Expansion of Economy Parking surface (east)

PAL 4

- 4-A) 2,400-foot extension of Runway 16L/34R to provide a total runway length of 11,000 feet
- 4-B) Elverta Road relocation
- 4-C) Light rail service to SMF passenger terminal
- 4-D) New north Crossfield Taxiway V
- 4-E) Phase 3: General aviation area improvements/ expansion including corporate hangars, fixed base operator facility, and apron
- 4-F) MRO Facility (Northeast side adjacent to solar farm)
- 4-G) Commercial Development south of I-5 (approximately 231 acres)
- 4-H) New localizer, ILS glide slope, and ALSF-2 for new ILS approach to Runway 34R
- 4-I) Place ditches within culverts and pipes in RPZ and road areas
- 4-J) Expand Terminal B (addition Baggage/Ticketing within Structure)
- 4-K) Terminal B Gate Expansion (6 gates) to 44 gates total

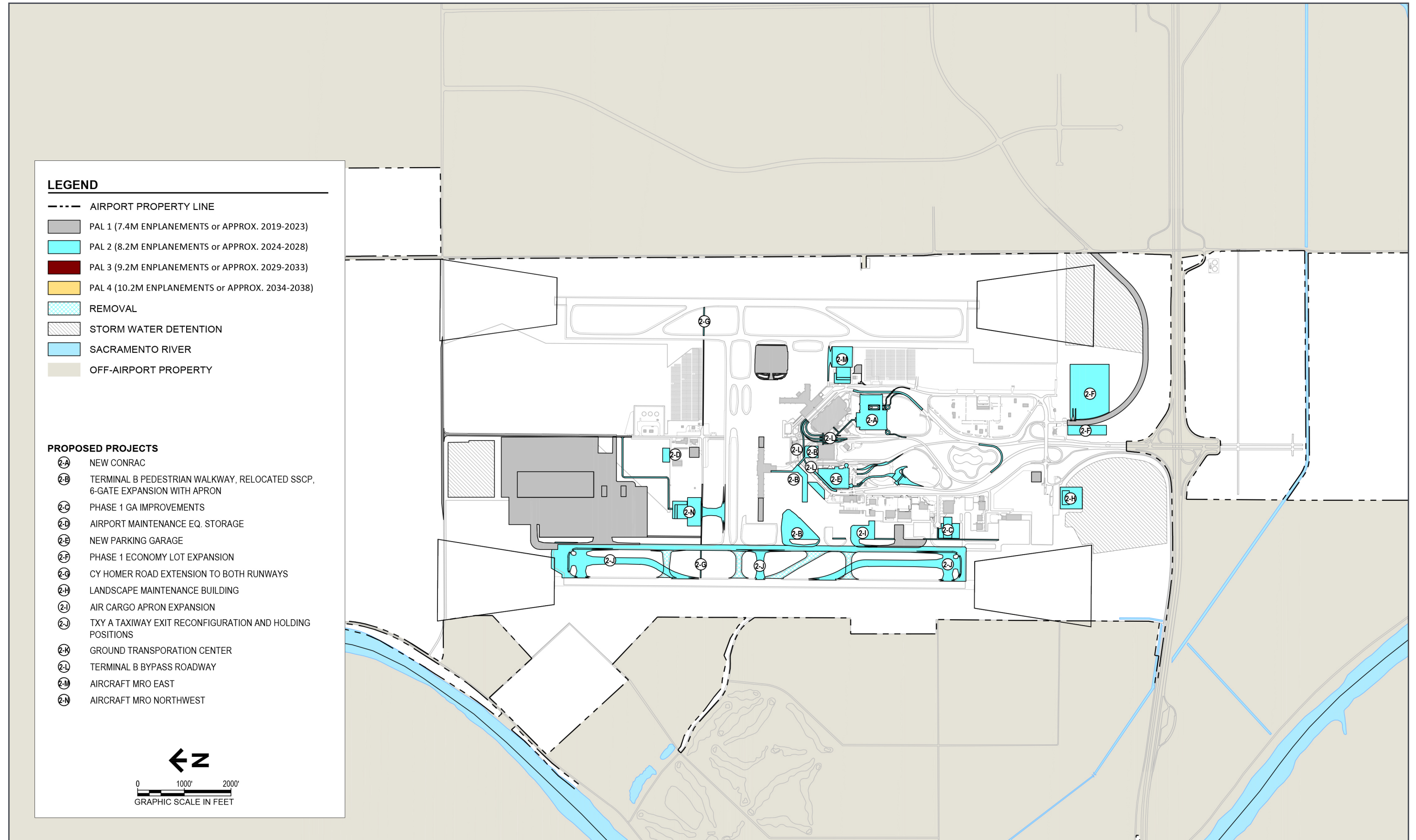


Figure 4-15 PAL 1 Development



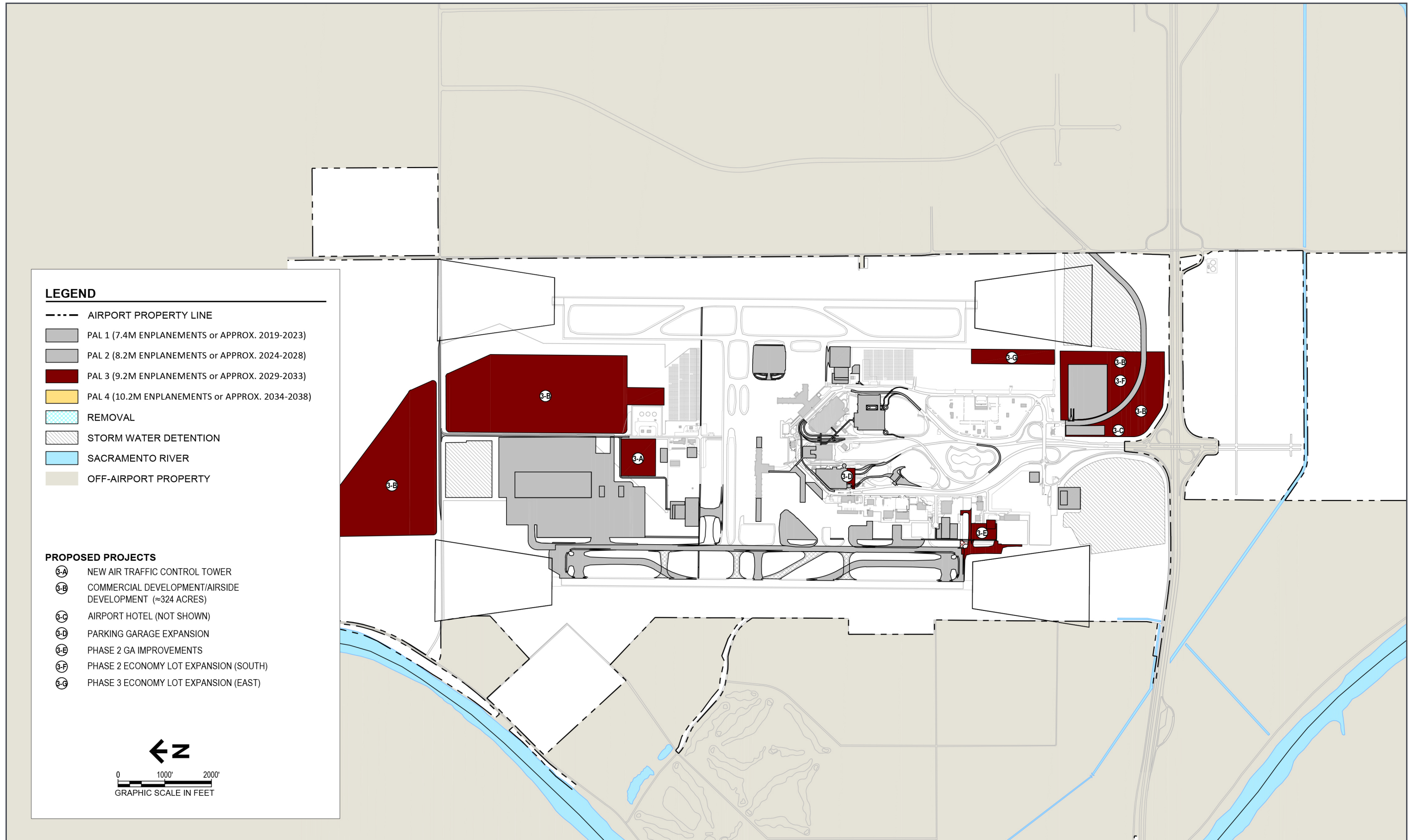
Source: Sacramento International Airport Master Plan, July 2020

Figure 4-16 PAL 2 Development



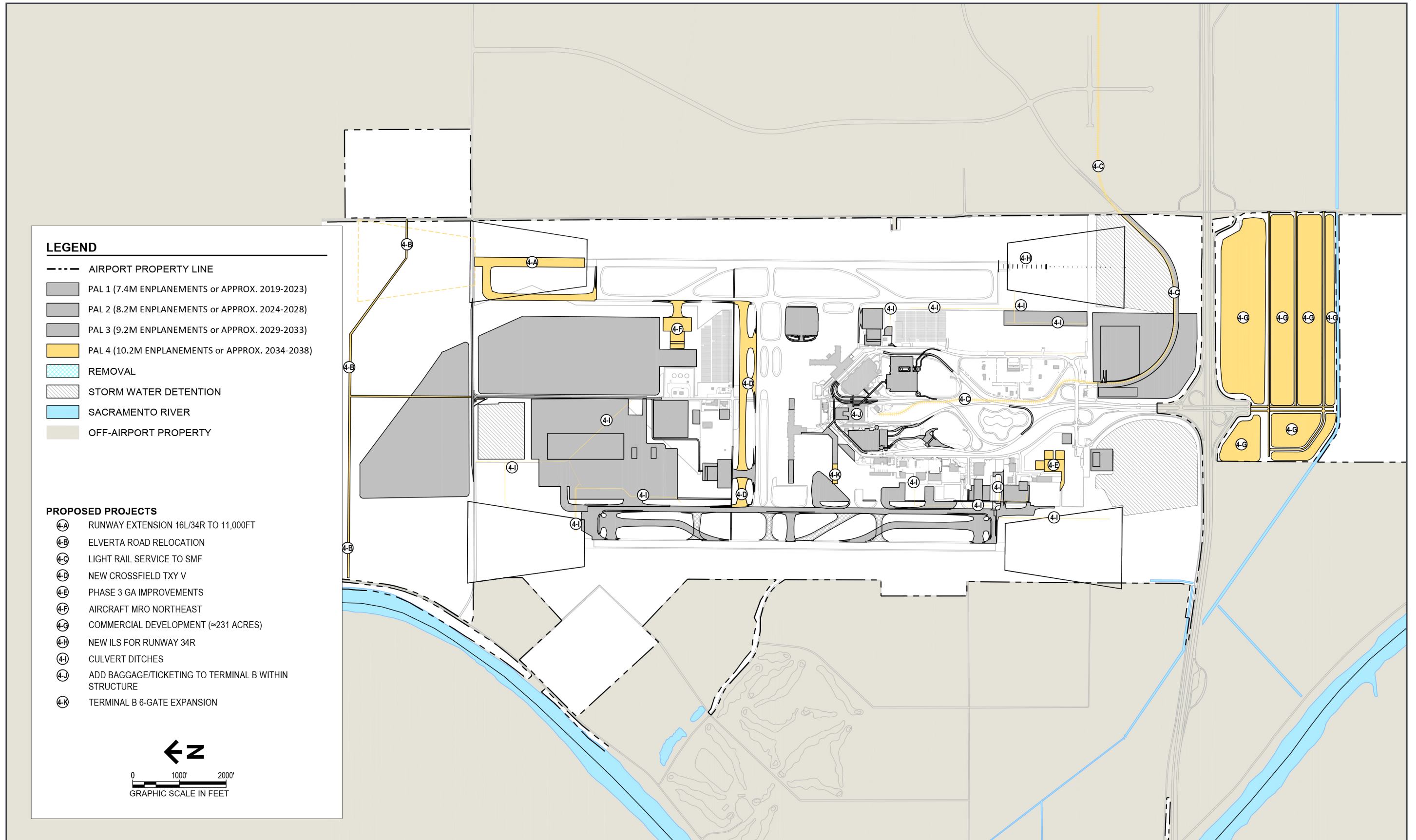
Source: Sacramento International Airport Master Plan, July 2020

Figure 4-17 PAL 3 Development



Source: Sacramento International Airport Master Plan, July 2020

Figure 4-18 PAL 4 Development



Source: Sacramento International Airport Master Plan, July 2020

