Leigh|Fisher

Master Plan Update

Sacramento International Airport

May 2016

Agenda

The focus of today's discussion

- **Background**
- **Review of forecast demand and planning activity levels**
- **Review of key requirements**
- **Key functional area approach / alternatives**
  - Airfield: attainable range analysis
  - Terminal: long-term terminal configurations and facility connections
  - Parking and rental cars: optimal siting / new garage
  - Ground transportation: curbside and roadway improvements
- **Summary and preliminary conclusions**

Background

An Airport Master Plan is an concept for long-term development

- **The Master Plan:**
  - Follows FAA Advisory Circular No. 150/5070-6A
  - Identifies near-term projects and provides long-term on-Airport general land-use guidance
  - Provides a vehicle for community participation in airport planning (through a Stakeholder Advisory Committee)
  - The goal is to guide future airport development that will cost-effectively satisfy aviation demand, while considering potential environmental and socioeconomic impacts

- **The Master Plan does not:**
  - Focus on detailed plans for individual projects
  - Include every project the Airport might propose in the 20-year planning horizon
  - Approve specific projects
  - Consider flight paths

Planning Activity Levels

Demand forecasts are in sync with actual activity…

- ***Three planning activity levels (PALs) were identified to represent future levels of activity at which key Airport improvements will be necessary.***

- ***PALs allow facilities planning to be realistically tied to milestone activity levels as they occur, rather than to arbitrary years.***

Annual demand	Existing (2015)	PAL 1 (2017)	PAL 2 (2022)	PAL 3 (2035)
Enplaned passengers	4,816,440	4,917,900	5,768,800	8,585,100

Summary of Key Requirements*

The airport is well positioned to accommodate forecast demand

Requirement	Existing (2015)	PAL 1 (2017)	PAL 2 (2022)	PAL 3 (2035)
Terminal A gates	-	-	-	4
Terminal B gates	-	-	2	4
Parking spaces				
Public (high/low)	-	-	1,300-2,000	8,000-9,500
Holiday / overflow (high / low)	-	-	-	3,800-7,700
Employee	-	-	65	700
Rental car areas				
Ready return facility	-	-	13,000	167,000
Quick turnaround area	-	-	1	8

*Minor improvements to baggage claim, make-up, curbsides, and roadway lanes will be needed throughout the planning period.

Summary of Alternatives

Areas of focus are terminal, ground transportation / parking, and airfield

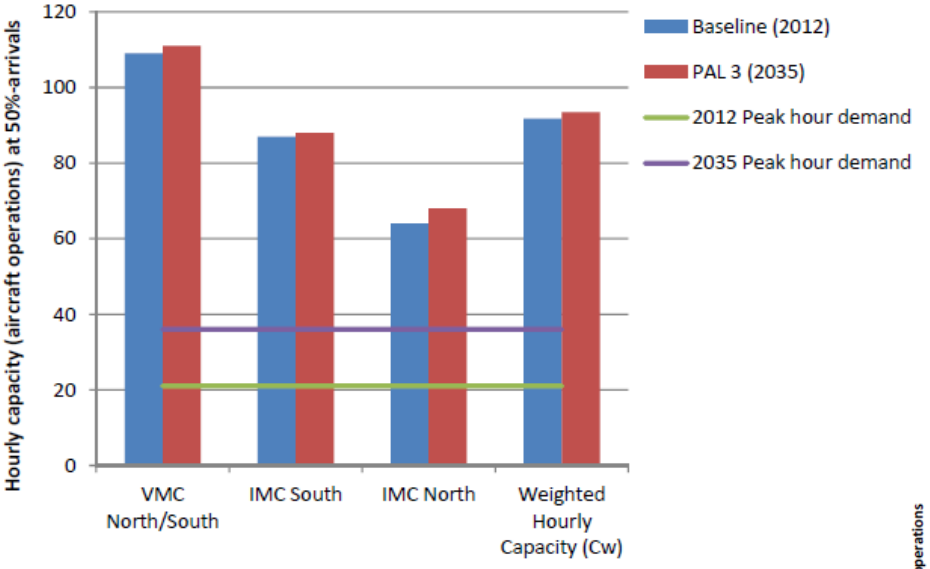
- **Terminal**
  - Terminal Path 1: Existing terminal configuration
  - Terminal Path 2: Close Landside A
  - Terminal Path 3: Close Landside A and Airside A
- **Airfield**
  - Assessment of runway lengths needed for non-stop service to select European destinations
- **Parking**
  - Parking and rental cars 1: Economy lot stays, rental cars move to Garage B
  - Parking and rental cars 2: Economy lot stays, rental cars stay
  - Parking and rental cars 3: Economy lot moves, rental cars move
  - Parking and rental cars 4: Economy lot moves, rental cars stay
  - Parking and rental cars 5: Economy lot stays, rental cars move to Surface A
- **Ground Transportation**
  - Curbside 1: Curbside improvements assuming continued landside operations at both terminals
  - Curbside 2: Curbside improvements for Terminal B only
  - Inbound access 1: Widen entrance ramp
  - Outbound access 1: Widen ramp
  - Outbound access 2: Construct flyover
  - Outbound access 3: Relocate entrance, construct ramp, relocate frontage road
- **Air Cargo**
  - No additional space required
- **General Aviation**
  - Preserve first right of refusal area
- **Support Facilities and Commercial Development**
  - Most support facilities are suitably located

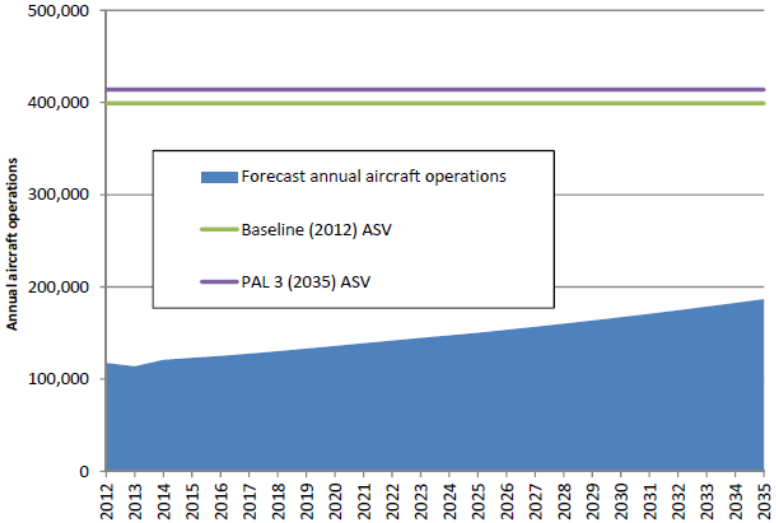
Airfield Analysis

Key Conclusions and Recommendations

Airfield is well equipped to handle forecast fleet mix, no capacity enhancement required…

- **Runway system can accommodate the current forecast fleet mix throughout the planning period**





Terminal Alternatives

Terminal Alternatives*

The analysis considers nine terminal development alternatives, which are derivatives of the three development paths

- **Terminal Path 1 : Existing terminal configuration**
  - **1a:** Make incremental improvements to both facilities as required by demand
  - **1b:** Path 1a with a pedestrian walkway that connects Terminal A to Terminal B
  - **1c:** Path 1a with a pedestrian and moving walkway that connects Terminal A to Terminal B
  - **1d:** Path 1b with conveyance carts operated by Airport staff
- **Terminal Path 2: Close Landside A**
  - **2a:** Connect Concourse A to Terminal B via an APM and pedestrian walkway
  - **2b:** Connect Concourse A to Terminal B via a pedestrian walkway and moving walkway, which includes a small fleet of conveyance carts operated by Airport staff
  - **2c:** Connect Concourse A to Terminal B via a pedestrian walkway and conveyance carts operated by Airport staff.
- **Terminal Path 3: Close Landside A and Airside A**
  - **3a:** Demolish Terminal A and Concourse A, and solely operate within Terminal B
  - **3b:** Decommission and place into caretaker status Terminal A and Concourse A, and solely operate within Terminal B

*All terminal development alternatives are compatible with the light rail alignment identified during the last master plan.

Terminal Alternative 1a

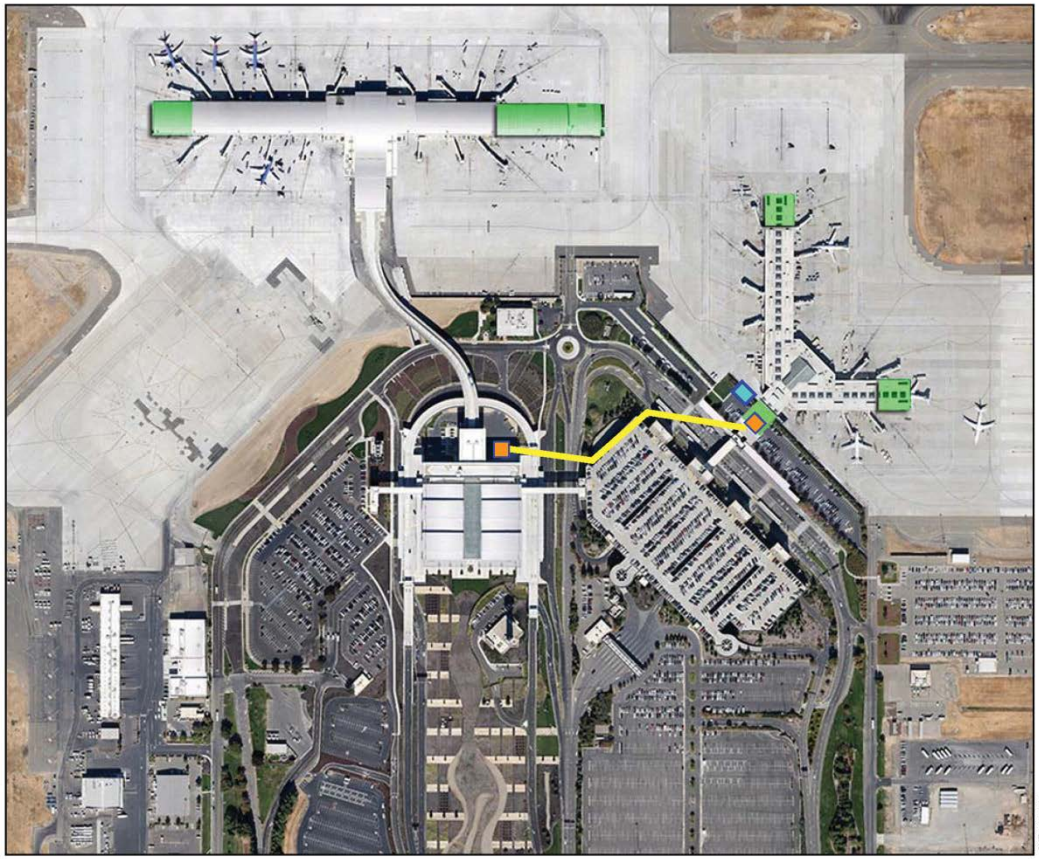
Make incremental improvements to both facilities as required by demand (BAU alternative)

LEGEND

Concourse extension

Terminal Alternative 1b

BAU with a pedestrian walkway that connects Terminal A to Terminal B

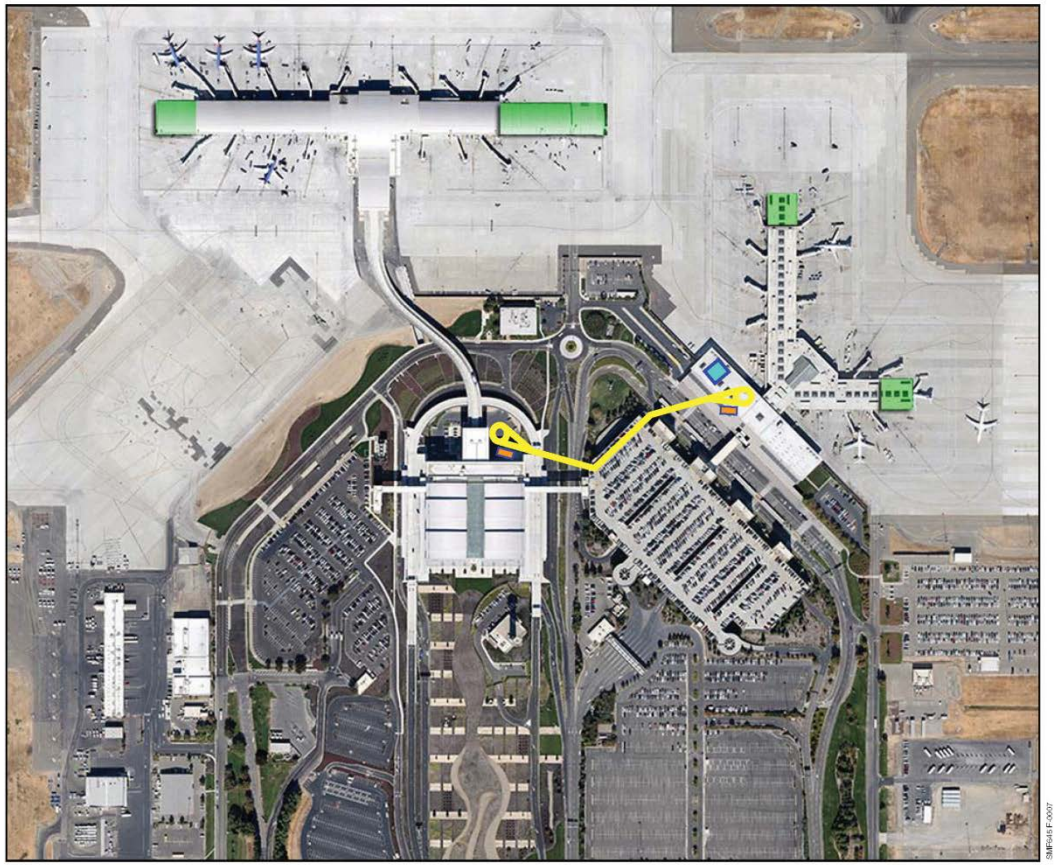


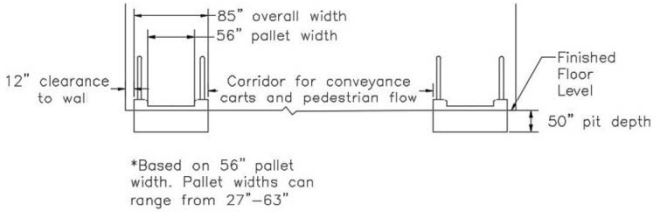
LEGEND

- Concourse extension
- Passenger queuing
- Maintenance area

Terminal Alternative 1c

BAU with a pedestrian and moving walkway that connects Terminal A to Terminal B



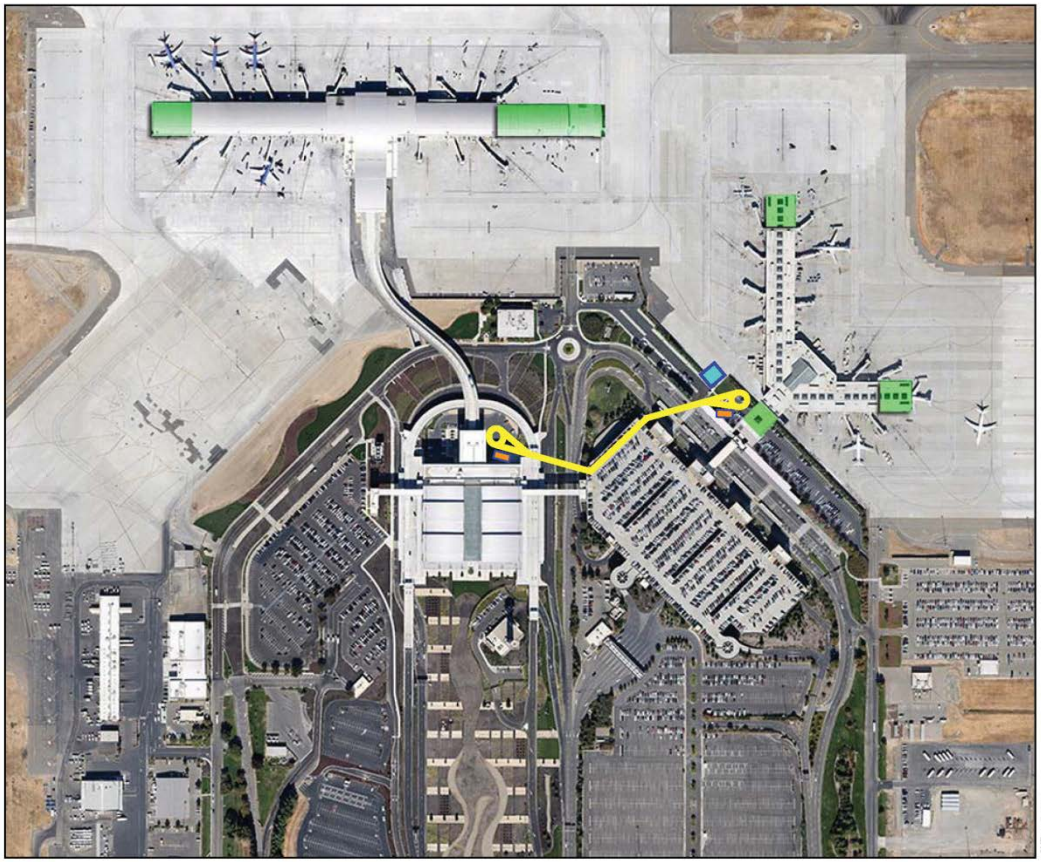


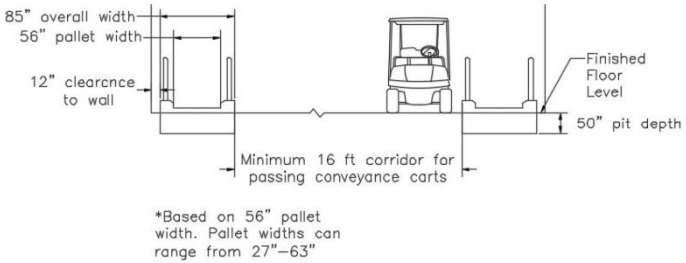
LEGEND

- Concourse extension
- Vehicle turnaround and passenger queuing
- Maintenance area

Terminal Alternative 1d

Path 1b with conveyance carts operated by Airport staff



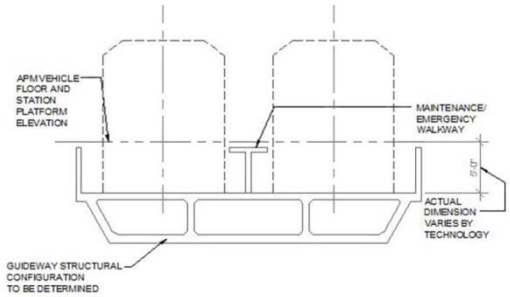


LEGEND

- Concourse extension
- Vehicle turnaround and passenger queuing
- Maintenance area

Terminal Alternative 2a

Connect Concourse A to Terminal B via an APM and pedestrian walkway

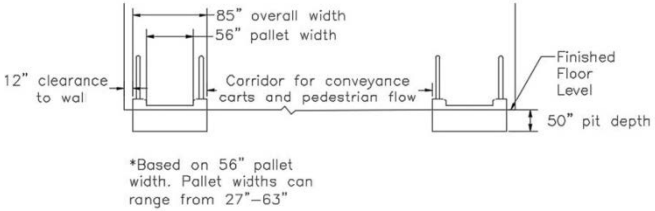


LEGEND

- Concourse extension
- Station
- Maintenance facility

Terminal Alternative 2b

Connect Concourse A to Terminal B via a pedestrian walkway and moving walkway, which includes a small fleet of conveyance carts operated by Airport staff

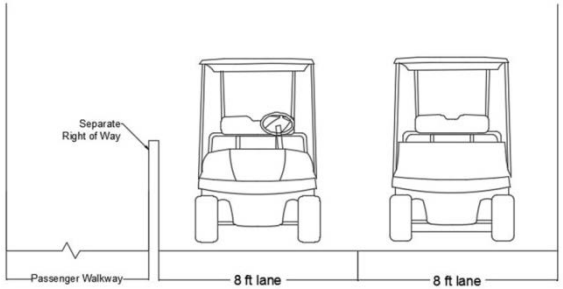


LEGEND

- Concourse extension
- Passenger queuing

Terminal Alternative 2c

Connect Concourse A to Terminal B via a pedestrian walkway and conveyance carts operated by Airport staff



LEGEND

Concourse extension

Terminal Alternative 3a

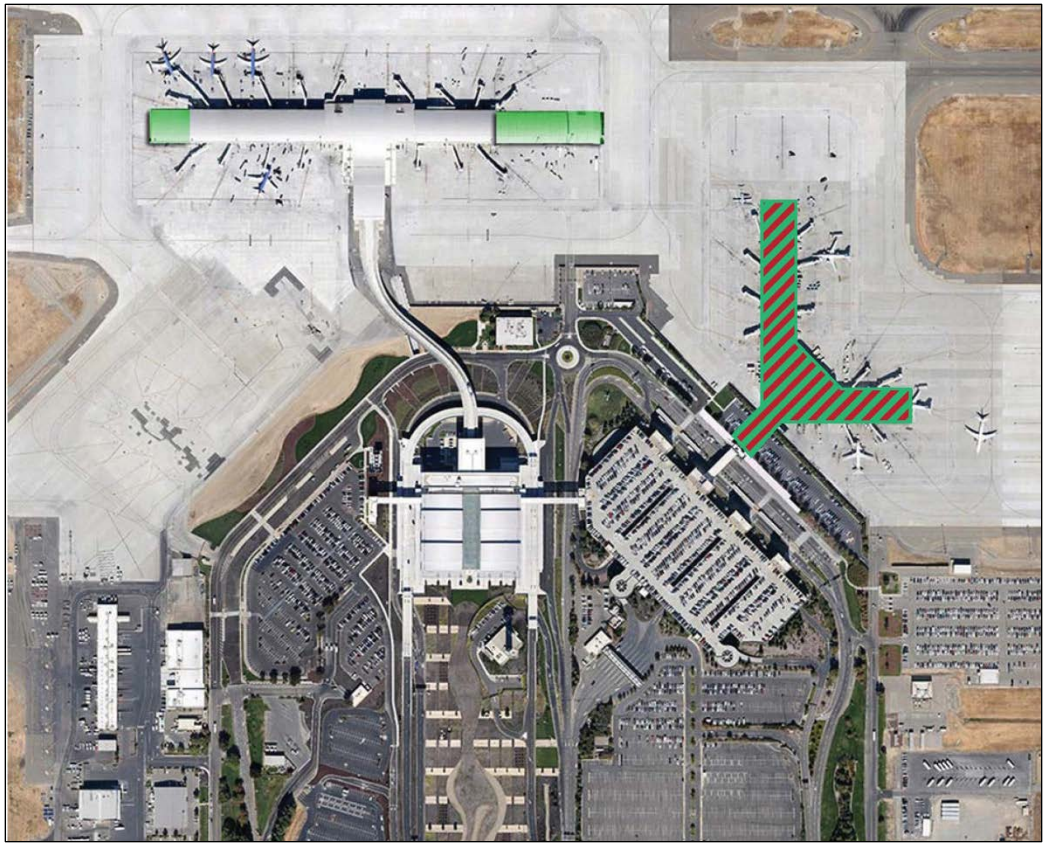
Demolish Terminal A and Concourse A, and solely operate within Terminal B

LEGEND

Concourse extension

Terminal Alternative 3b

Decommission and place into caretaker status Terminal A and Concourse A, and solely operate within Terminal B



LEGEND

Concourse extension

Terminal in caretaker status

Ground Transportation and Parking Alternatives

The following pages identify the ground transportation and parking alternatives, approach, and evaluation criteria.

Matrix of Alternatives – Parking and Rental Car Facilities

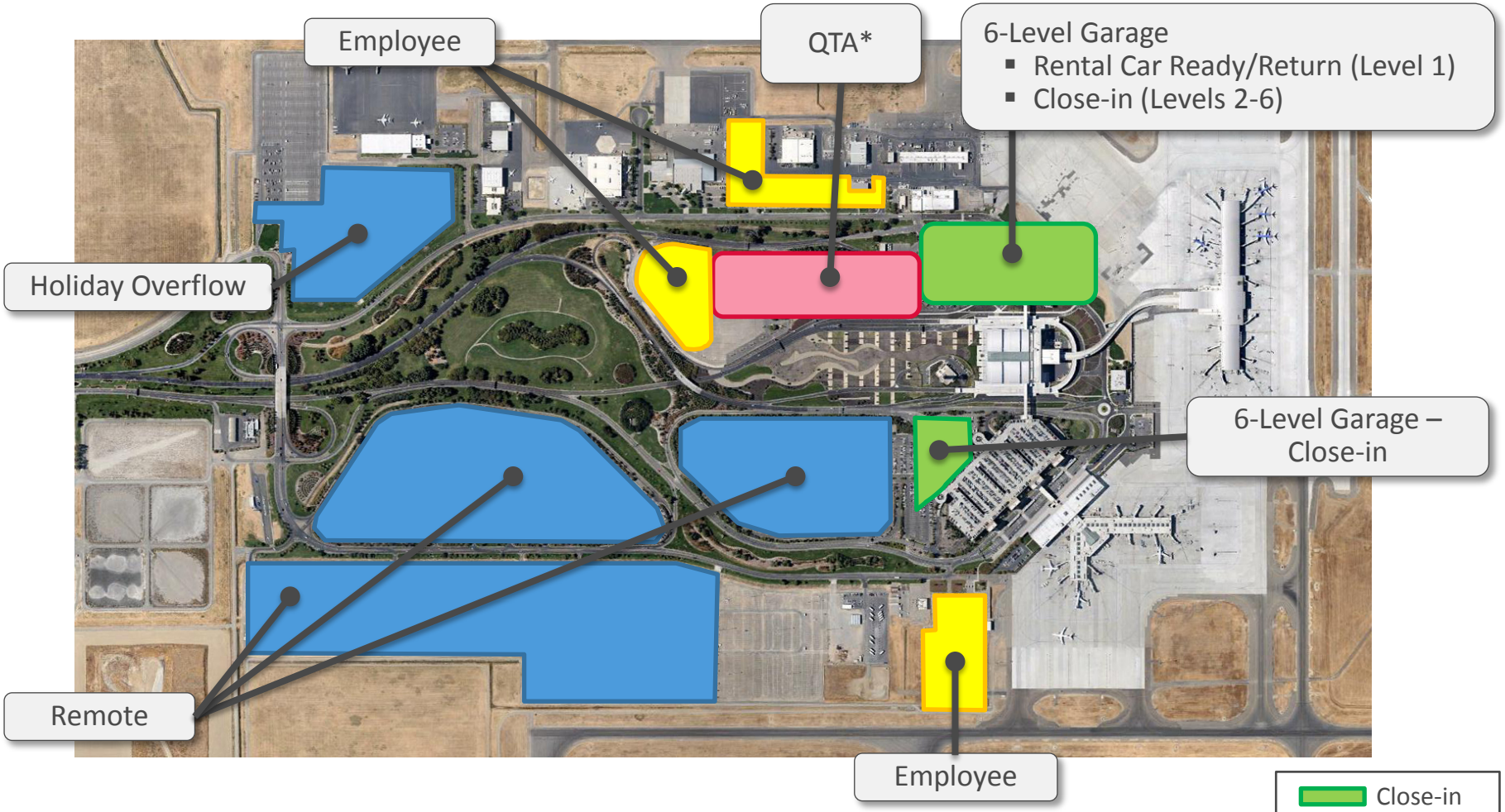
Five alternatives under consideration

Alternatives focus on answering two main questions:

1. Does the economy parking lot remain open on its existing site?
2. Do the rental cars stay on their existing site?

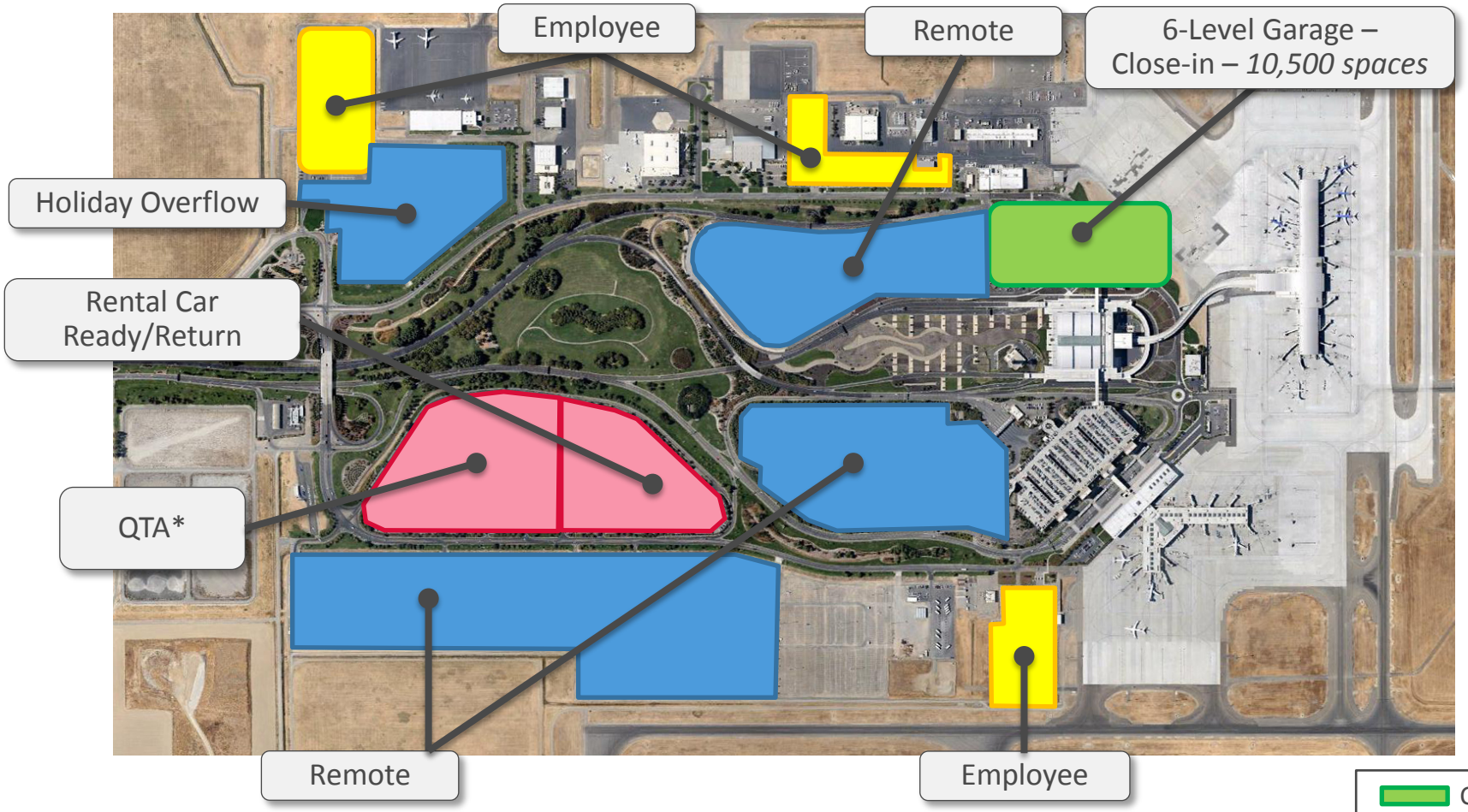
Alternative	Economy lot remains on existing site	Rental cars remain on existing site
1	✓	✗
2	✓	✓
3	✗	✗
4	✗	✓
5	✓	✗

Alternative 1: Move Rental Cars to a New Garage, Maintain Economy Lot



** Quick turn around (QTA) site assumes vehicle storage is provided on a second level above the fuel/wash area (this area can typically be developed for a modest incremental cost).*

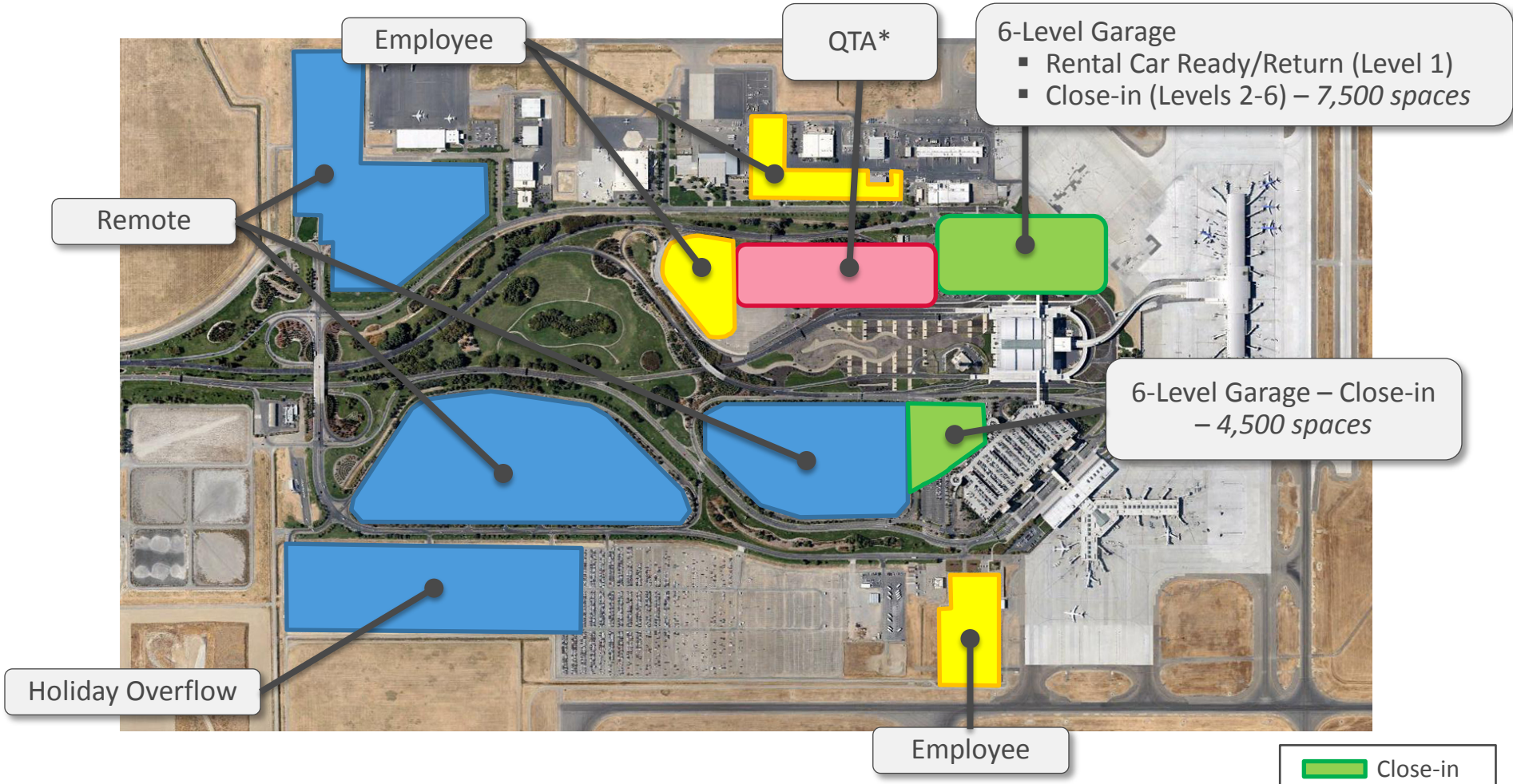
Alternative 2: Maintain Rental Car Site, Maintain Economy Lot



Close-in
QTA
Remote
Employee

** Quick turn around (QTA) site assumes vehicle storage is provided on a second level above the fuel/wash area (this area can typically be developed for a modest incremental cost).*

Alternative 3: Move Rental Cars into Garage, Redevelop Economy Lot



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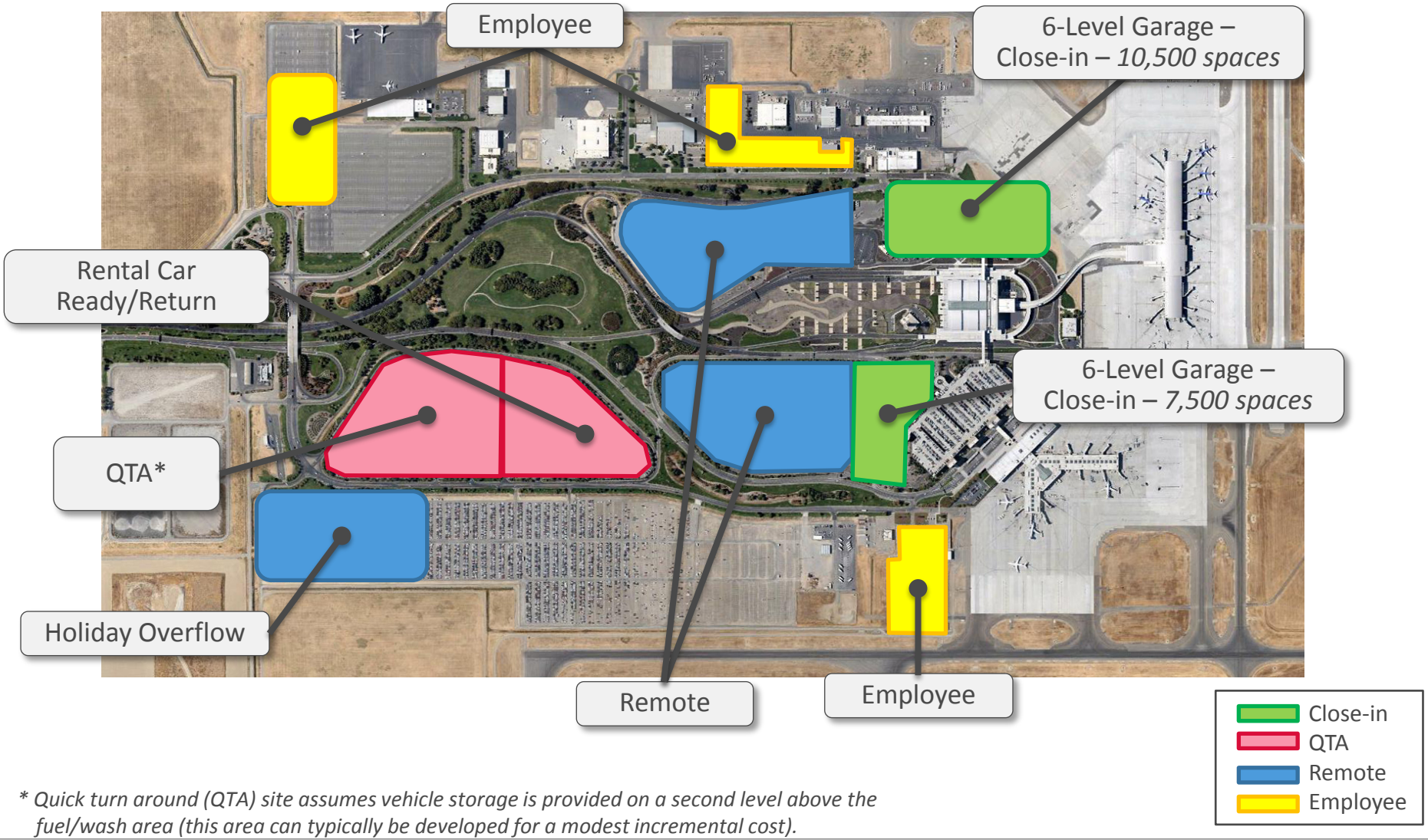
Alternative 4: Maintain Rental Car Site, Redevelop Economy Lot



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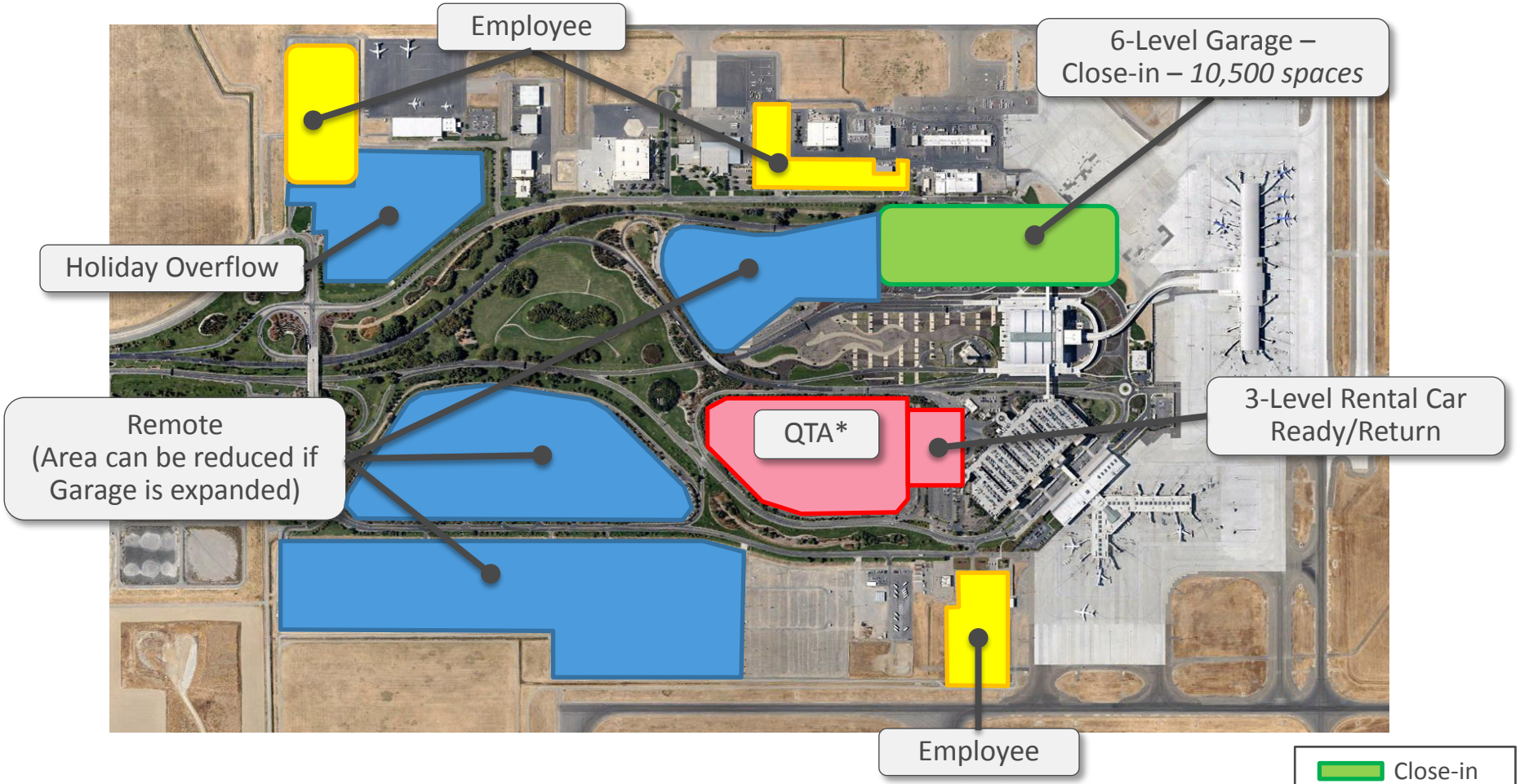
Alternative 1: Move Rental Cars to a New Garage, Maintain Economy Lot



** Quick turn around (QTA) site assumes vehicle storage is provided on a second level above the fuel/wash area (this area can typically be developed for a modest incremental cost).*

Curbside Requirements

Summary of curbside requirements for the existing terminal configuration (Terminal Path Alternative 1)

	Existing capacity (LF)	PAL 3 requirement (LF)
TERMINAL A		
A Inner		
Departures	472	327
Arrivals	236	287
Central Island	740	420
West Curb	1,090	180
TERMINAL B		
West		
Departures	400	409
Arrivals – Inner	360	536
Arrivals – Commercial	470	330
East		
Departures	400	291
Arrivals – Inner	360	497
Arrivals – Commercial	470	420

Assumes double parking allowed for Terminal A inner, Terminal B departures, and Terminal B Arrivals inner
Source: LeighFisher, based on data provided by Airport staff, June 2013

Curbside Requirements – Consolidate into Terminal B

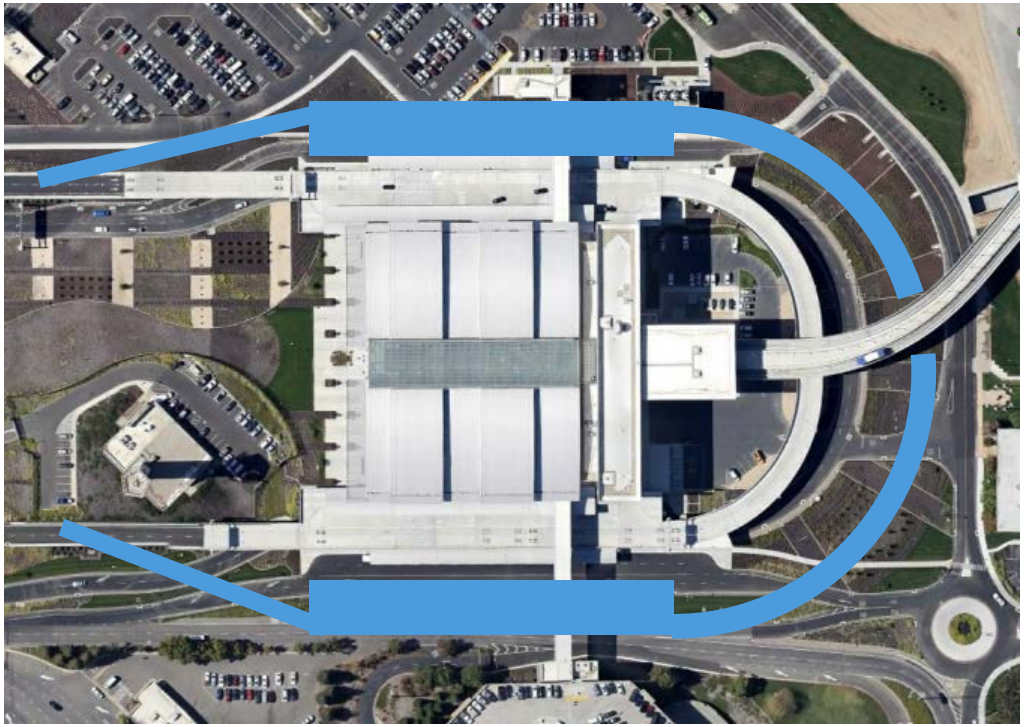
Summary of curbside requirements for Terminal Path Alternatives 2 and 3

	Existing capacity (LF)	PAL 3 requirement (LF)
TERMINAL B		
West		
Departures	400	409
Arrivals – Inner	360	536
Arrivals – Commercial	470	480
East		
Departures	400	618
Arrivals – Inner	360	784
Arrivals – Commercial	470	360

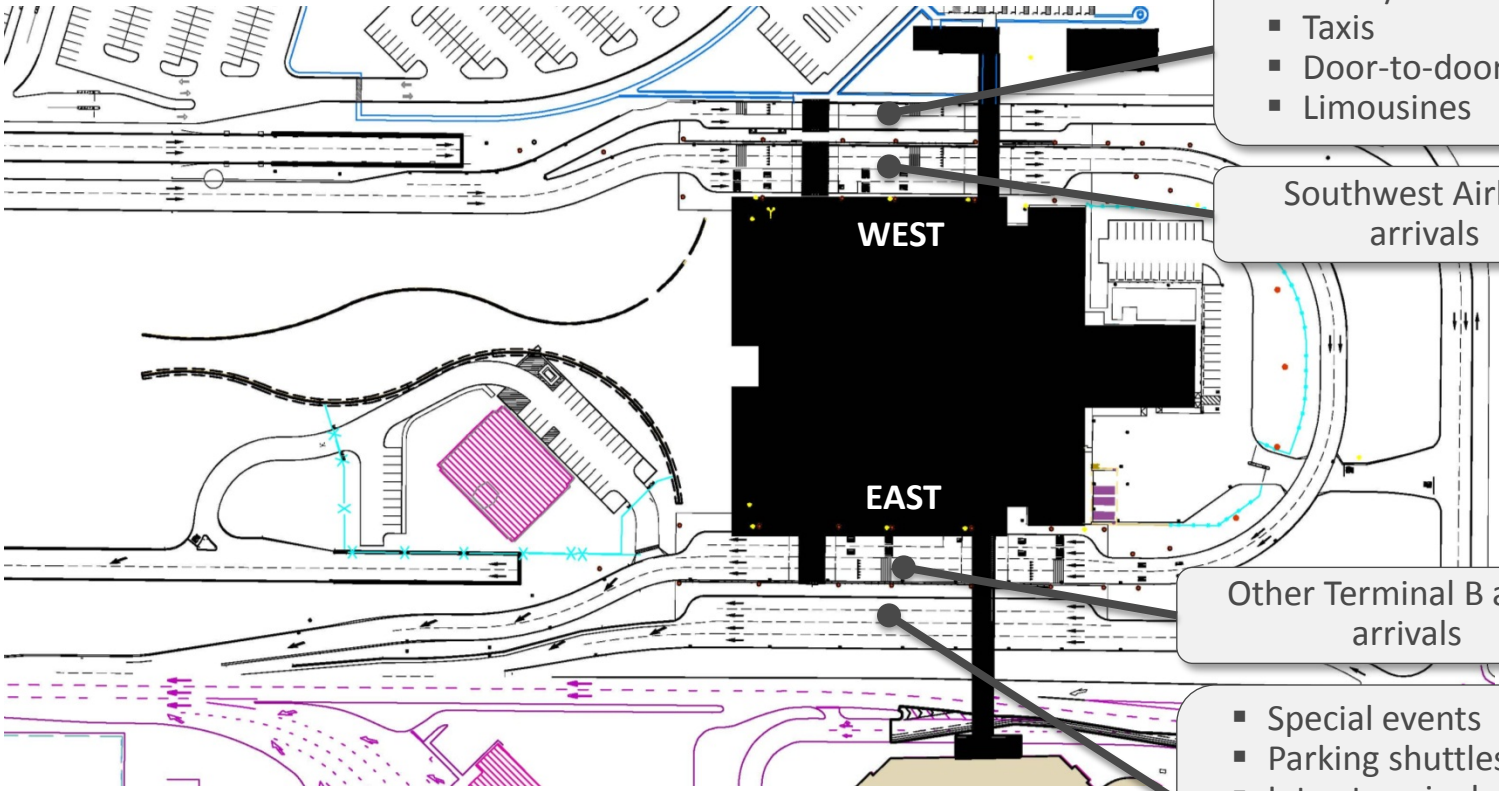
Note: Assumes existing Terminal A airlines will use the East curbside

Departures Curbside Alternatives

- **If Terminal A landside functions remain, no action is necessary for Departures curbsides**
- **If landside functions consolidate to Terminal B**
  - Alternative 1: encourage drivers to drop off passengers on lower level during morning peaks
  - Alternative 2: construct parallel departures curbsides



Terminal B Arrivals Curbside Existing Conditions



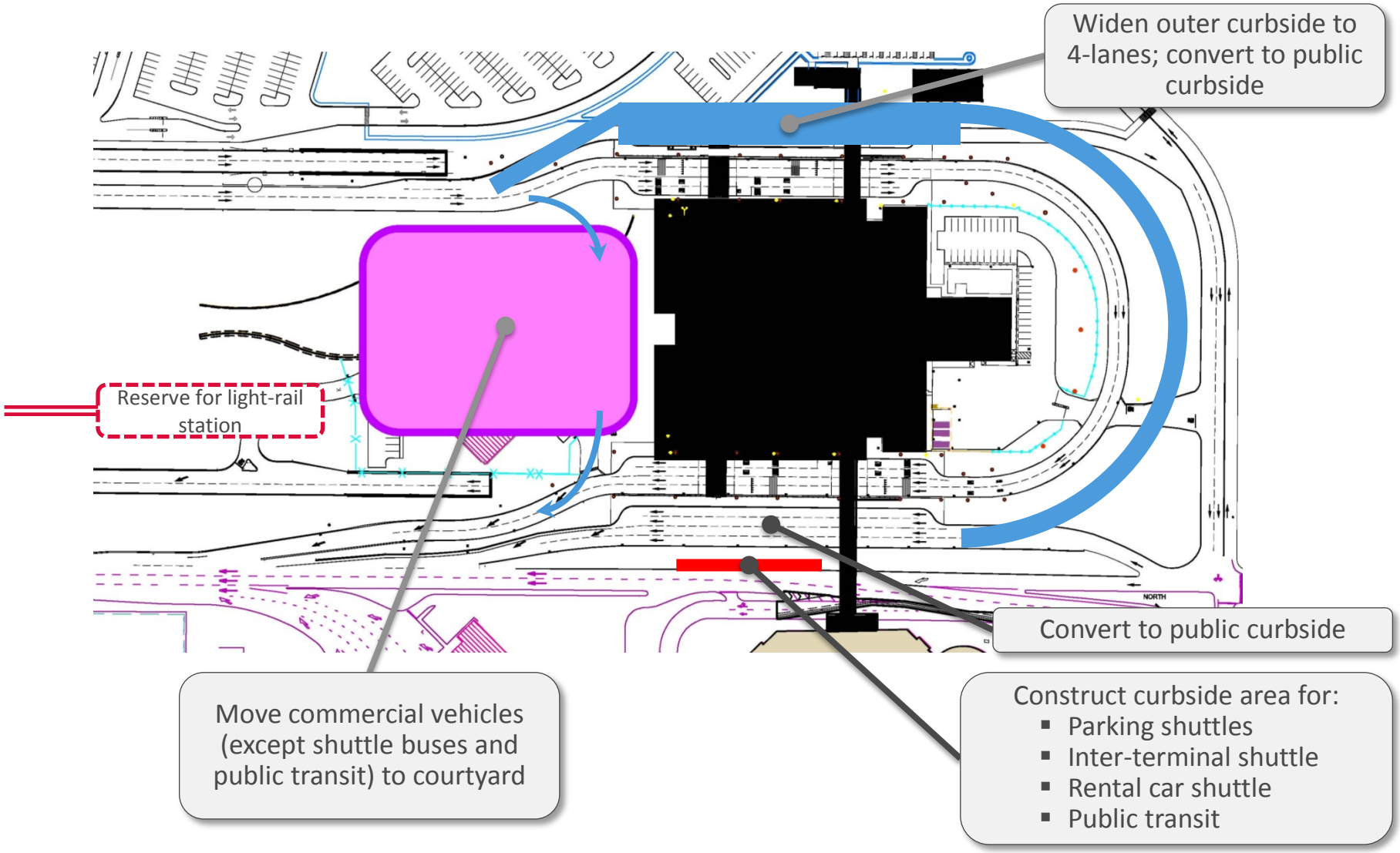
- Hotel/Motel
- Taxis
- Door-to-door van
- Limousines

Southwest Airlines arrivals

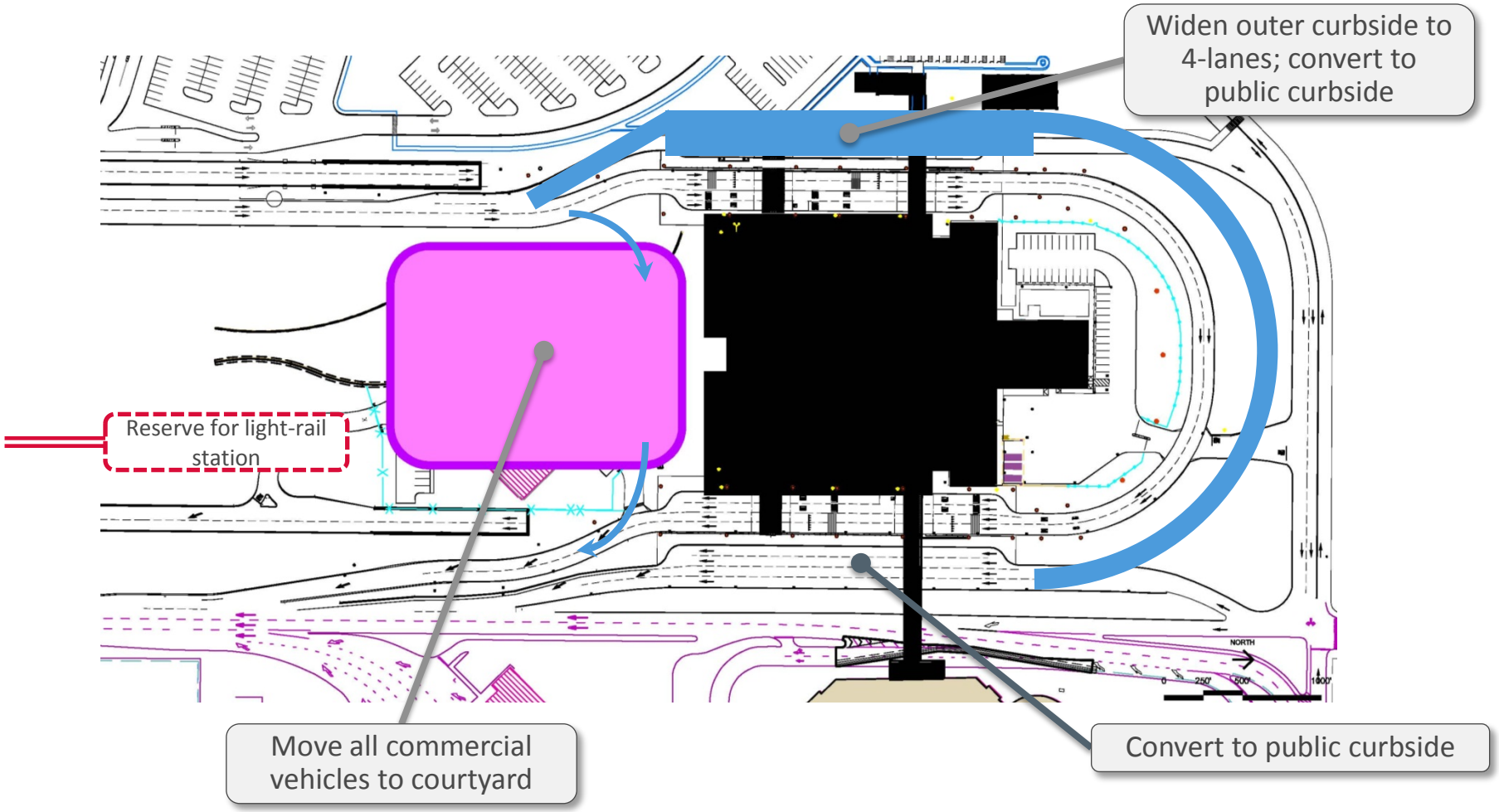
Other Terminal B airline arrivals

- Special events
- Parking shuttles
- Inter-terminal shuttle
- Rental car shuttle
- Public transit

Arrivals Curbside Alternative – Terminal A Continues Operation



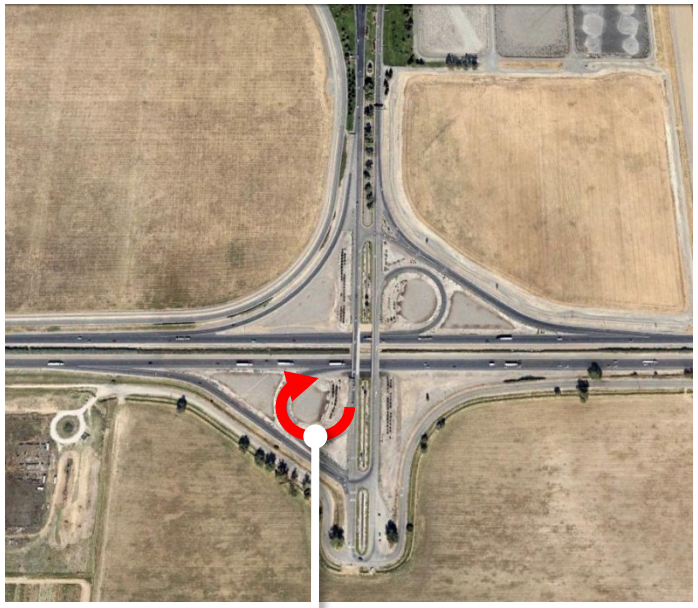
Arrivals Curbside Alternative – Consolidate into Terminal B



Airport Access Improvements – Inbound (entrance *from* northbound I-5)

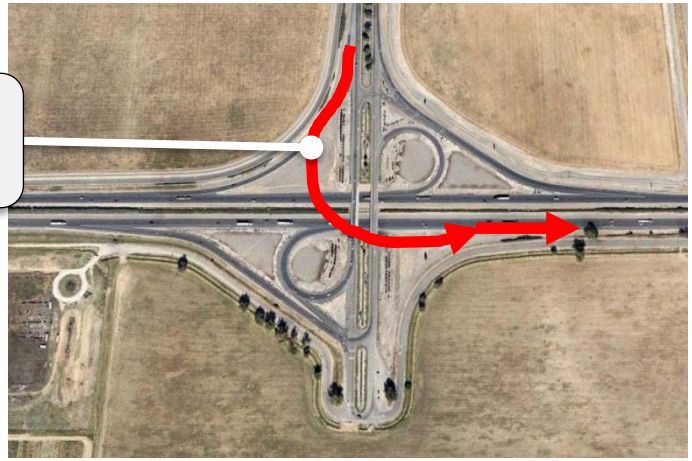
Airport Access Improvements – Outbound (exit *to* southbound I-5)

PAL 2

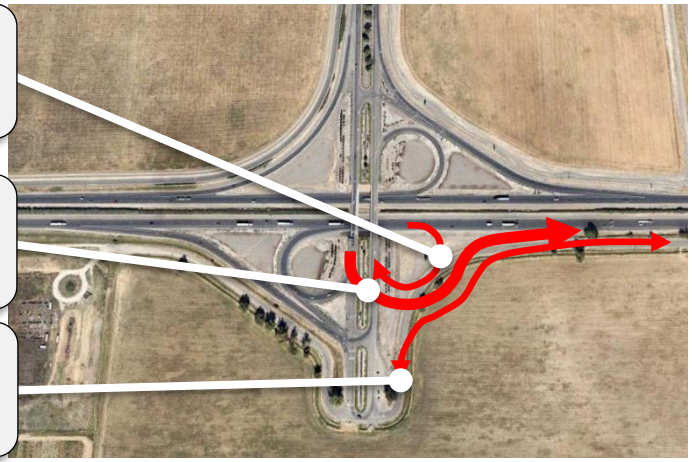


Widen ramp to 2 lanes (LOS D at PAL 2)

PAL 3



Construct 2-lane flyover



Relocate entrance from SB I-5

Construct 3-lane on-ramp to SB I-5

Relocate frontage road

Connections to/from frontage road may need to be replaced at another nearby interchange.

Long-term Terminal-area Roadway Plan

Long-term roadway plan

Summary

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  - No additional space required
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- **Support Facilities and Commercial Development**
  - Most support facilities are suitably located