

# UPDATE ON THE AIRPORT DEVELOPMENT PLAN (ADP) FACILITY REQUIREMENTS

Prepared for

**San Diego County Regional Airport Authority Board**  
San Diego, CA

*April 4, 2013*

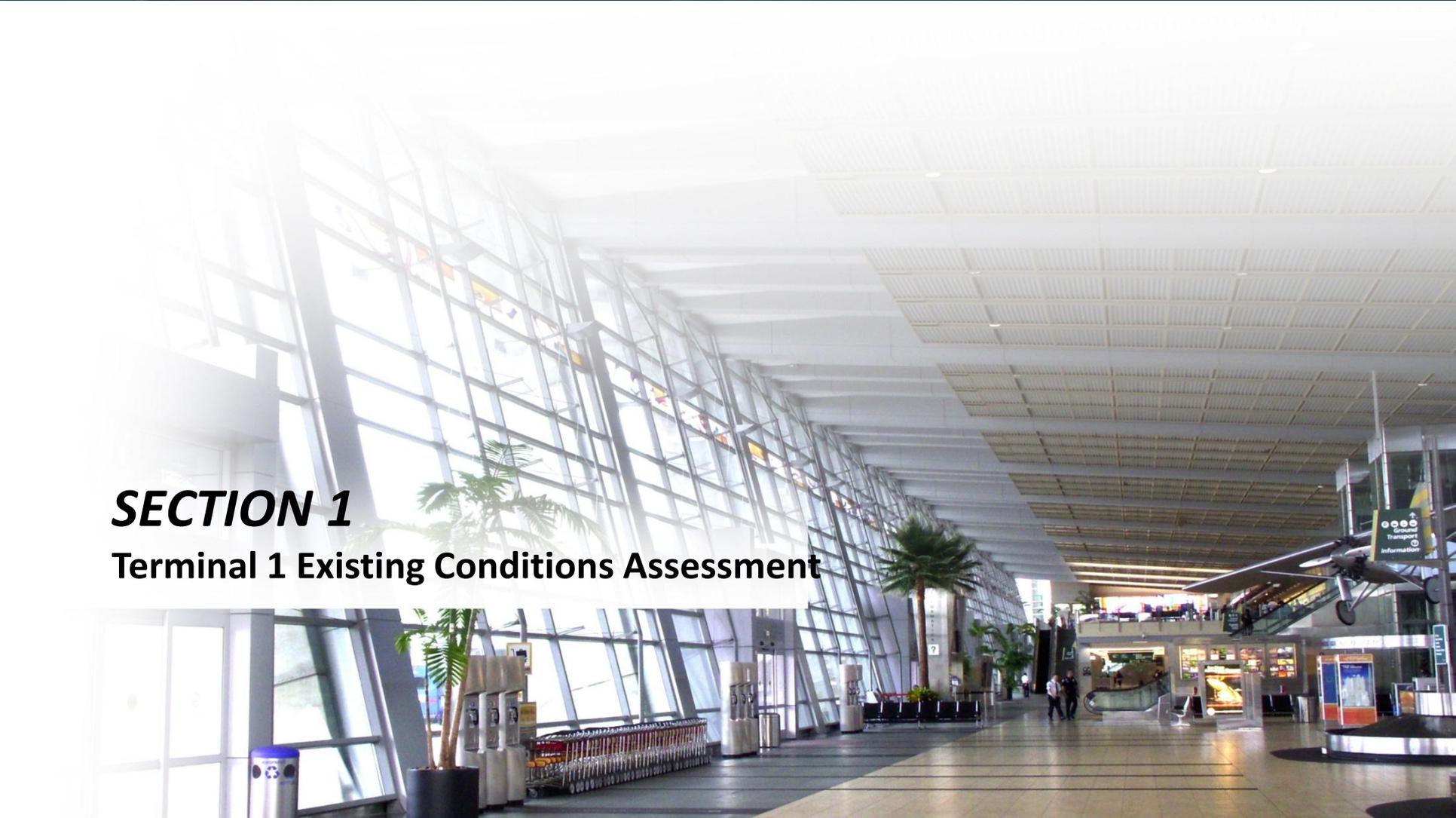


# Agenda

## ADP Facility Requirements

- Terminal 1 Existing Conditions Assessment
- Planning Activity Levels
- Anticipated Facility Needs
  - Airfield
  - Aircraft Parking
  - Passenger Terminal
  - Ground Transportation
  - Support Functions
- Next Steps





***SECTION 1***  
**Terminal 1 Existing Conditions Assessment**

# Terminal 1 Facility Overview

- **284,000 square feet building on one and a half levels**
- **19 gates:**
  - 16 around two piers (gates 3 through 18)
  - 3 at the far east end of the terminal (gates 1, 1A and 2)

**West Rotunda**  
(United and Alaska Airlines)

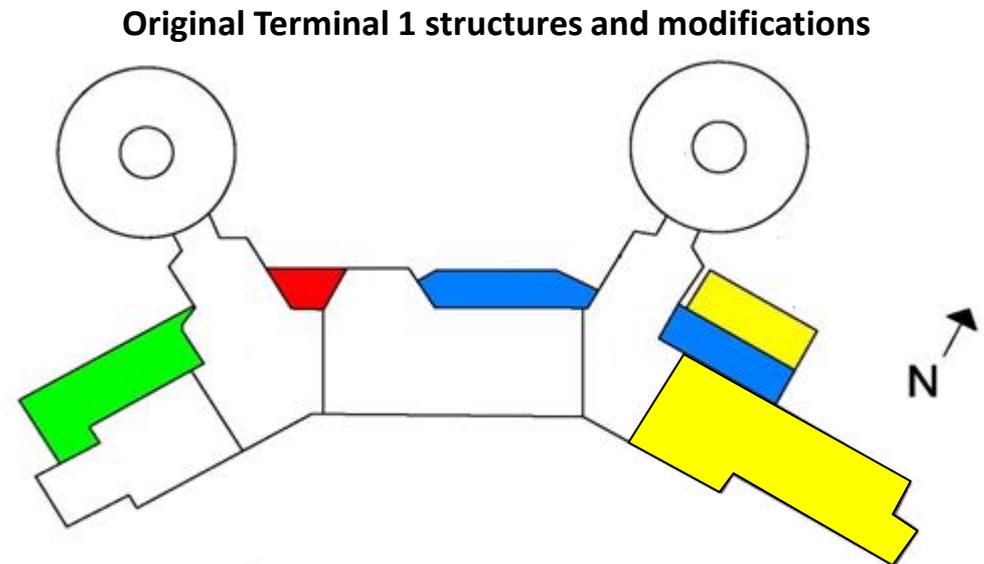
**East Rotunda**  
(Southwest Airlines)



**Gates 1, 1A and 2**  
(Southwest Airlines)

# Terminal 1 Construction History

-  **1965:** Original Terminal 1 structure constructed
-  **1965 to 1980:** Limited terminal expansion
-  **1980:** Two existing single-story rotundas were modified to a two-story structure and west expansion was built
-  **1994:** Mezzanine was expanded and additional space was constructed
-  **2000 and beyond:** New baggage screening facility and Gates 1, 1A and 2 structure were built



# Structural Assessment

- **Gravity support system**

- No major issue
- Light-weight concrete waffle slab system has undergone long term creep and shrinkage resulting in some excess deflection in some areas

- **Seismic resisting system**

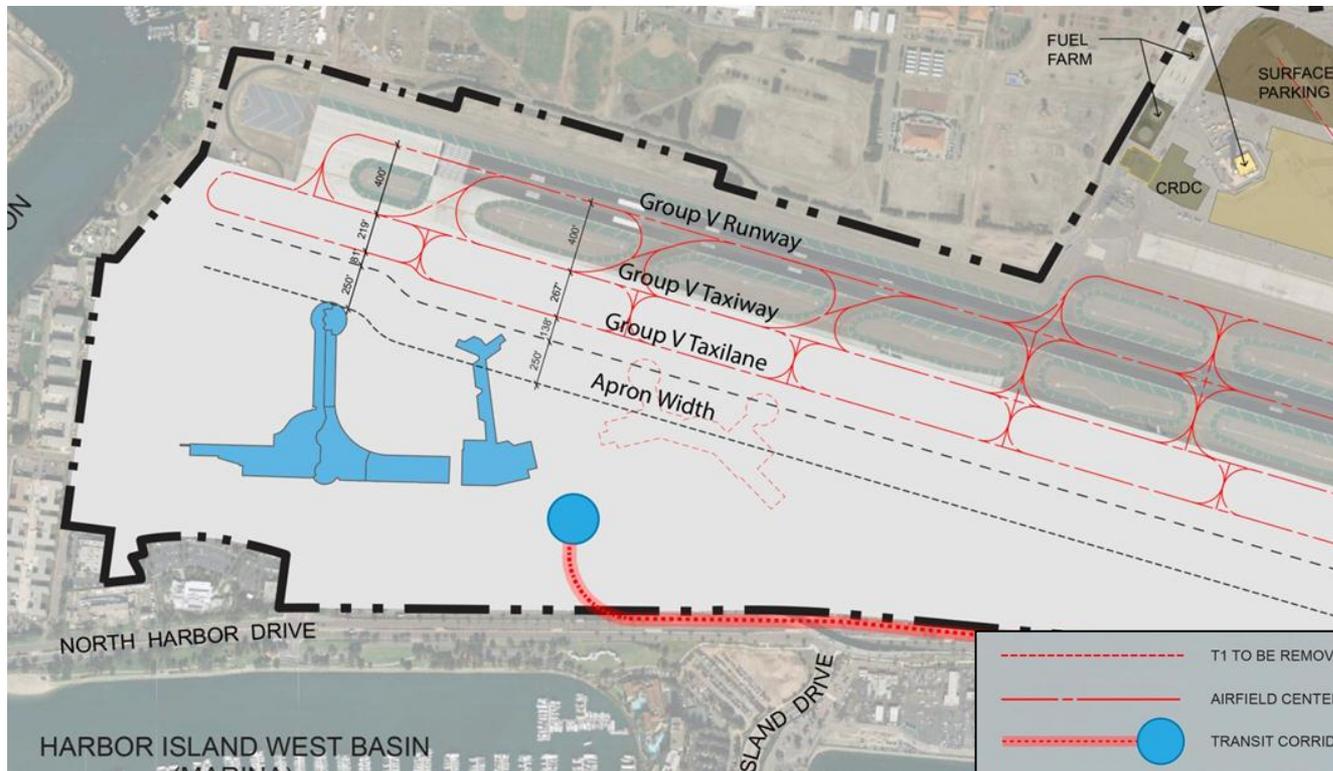
- Foundation is a concern - If liquefaction is a possibility during a severe seismic event, dynamic settlement could be a major issue

- **Foundations and seismic elements of Terminal 1 could be retrofitted, although the retrofit cost effectiveness will need to be assessed**



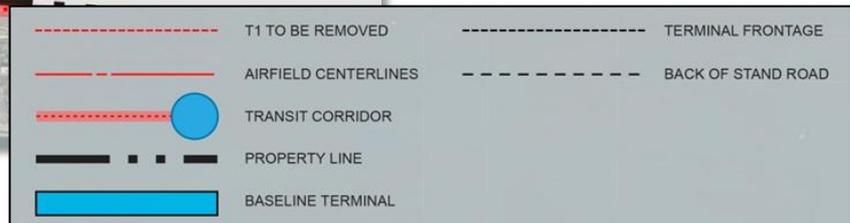
# Functional Assessment – Airfield Interface

- Configuration causes aircraft pushback constraints from some gates on to the existing active taxiway



Location of the two rotundas is an obstruction to needed improvements for airfield operations

Potential Future Airfield Configuration



# Functional Assessment - Security Screening

- Advancements in technology for security screening requires greater space requirements which limit throughput capacity.



Passengers queuing for T1 Security at 7:20am



Terminal 1 East Security Screening Checkpoint Diagram

# Functional Assessment - Baggage Screening

- Lack of space for baggage screening and baggage handling systems may compromise baggage processing standards, in terms of quality (potential wet bags) and efficiency (timely delivery to aircraft)



*Baggage make-up on the ramp*



*Baggage cart storage not under cover*

# Functional Assessment - Concessions

- Lack of space for concessions causes the retail program to underperform financially
- Represents a significant challenge for SDCRAA to increase non-airline revenues



*Limited concessions offerings*



*Limited food offerings*

# Functional Assessment Summary

- **Terminal 1 is functionally deficient in comparison with current passenger terminal design standards**
  - Lacks appropriate space for all functional areas
  - Functional spaces within the building are not located appropriately
- **While it may be possible to renovate T1, it appears unlikely that all of the deficiencies could be adequately addressed**



## ***SECTION 2*** **Planning Activity Levels**



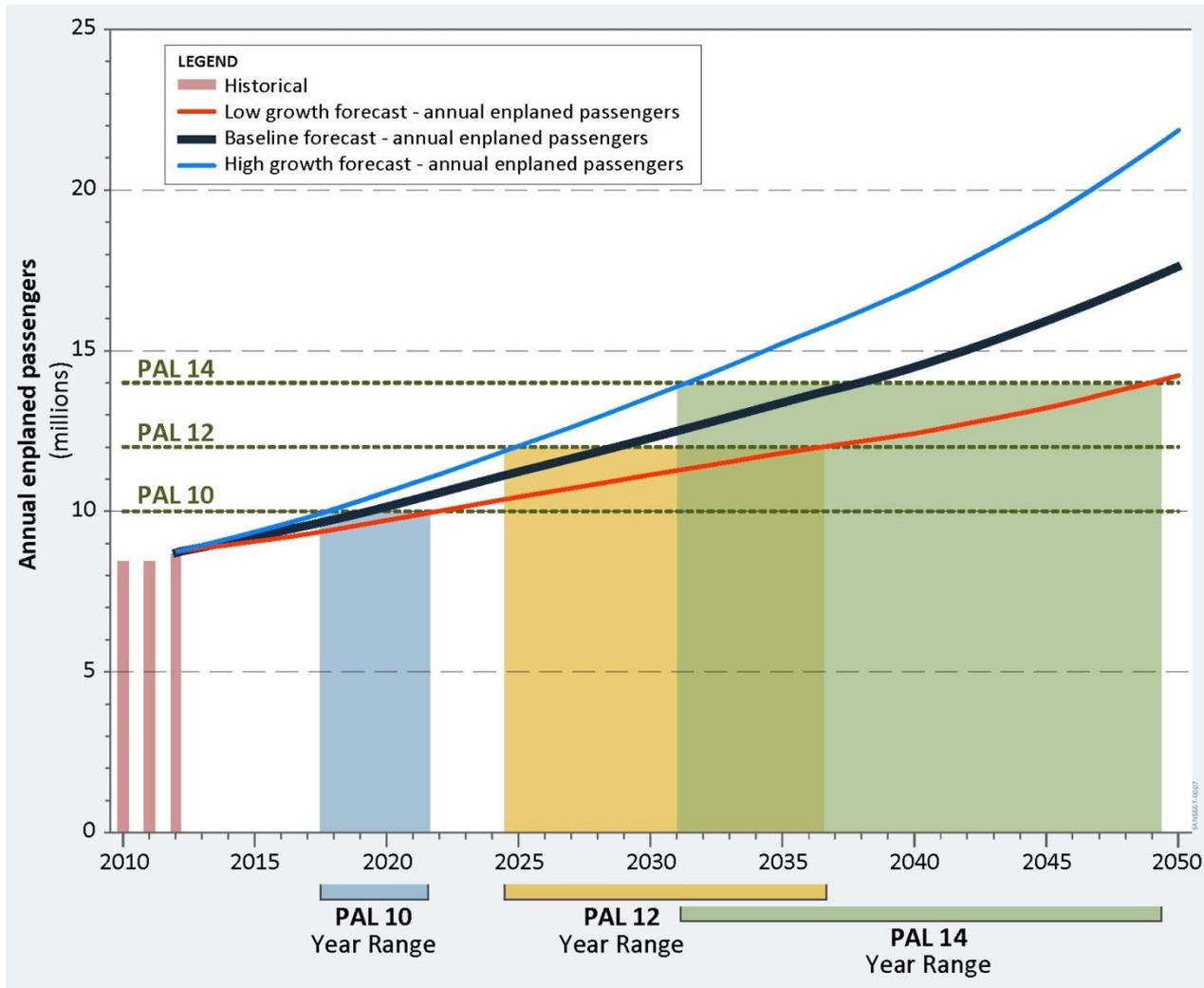
# Planning Activity Levels

- **Planning activity levels (PALs) are tied to milestone activity levels, rather than arbitrary years, for demand-driven facility requirements**
- **Future PALs can inform decision makers if activity grows faster than anticipated**

	Historical	Forecast		
	2012	PAL 10	PAL 12	PAL 14
		10 million annual enplanements	12 million annual enplanements	14 million annual enplanements
<b>Year (based on base case forecast)</b>		2020	2029	2038
<b>Enplanements</b>				
Domestic	8,385,960	9,800,000	11,500,000	13,200,000
International	<u>256,870</u>	<u>400,000</u>	<u>600,000</u>	<u>900,000</u>
<b>Total</b>	8,642,830	10,200,000	12,100,000	14,100,000
<b>Cargo tonnage</b>	155,714	164,000	201,000	240,000
<b>Aircraft operations</b>	186,251	204,900	227,700	251,500



# Planning Activity Levels – Year Ranges





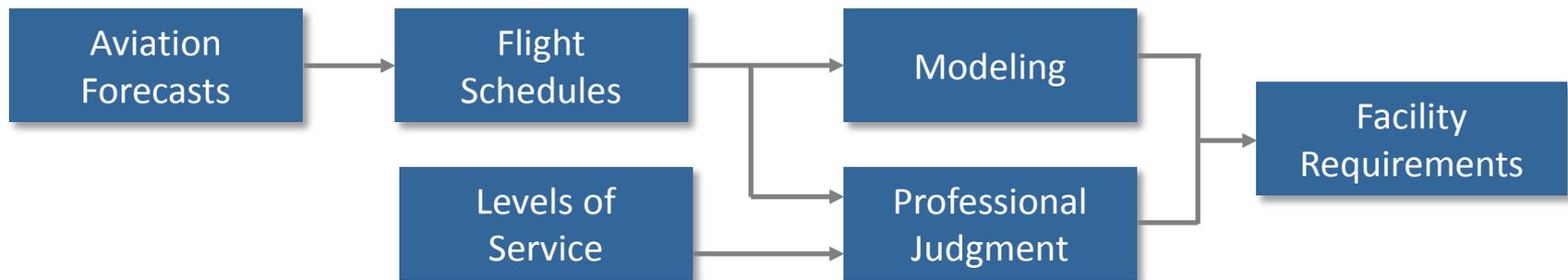
# ***SECTION 3***

## **Anticipated Facility Needs**

# Facility Needs Introduction

- **Understand performance capabilities of SAN facilities**
- **Determine facilities required to meet forecast demand**
  - Utilize existing facilities to the greatest extent possible
  - Maximize use of technology and industry best practices
  - Incorporate principles of sustainability
- **Establish basis for alternatives**

## Facility Requirements Development Process



# Airfield Needs

	Existing Facilities	Ultimate Requirements (PAL 14)
Runway	Runway 9-27 9,401 feet long by 200 feet wide	<ul style="list-style-type: none"><li>Runway will need to be reconstructed within 15 years</li></ul>
Taxiways	<ul style="list-style-type: none"><li>South side: full-length parallel Taxiway B</li><li>North side: partial-length parallel Taxiway C</li></ul>	<ul style="list-style-type: none"><li>Relocate Taxiway B south to meet FAA standards for ADG V aircraft</li><li>Construct 2<sup>nd</sup> south parallel taxiway or taxilane to improve airfield circulation</li></ul>
Design Aircraft	<ul style="list-style-type: none"><li>Boeing 777</li></ul>	<ul style="list-style-type: none"><li>Airfield will be designed to accommodate the Boeing 777 and 787-9</li></ul>

## Notes

- With one runway and limited property, the capacity of SDIA is constrained
- The single runway represents the most constraining factor for the Airport, limiting the number of aircraft operations (takeoffs and landings) that can be accommodated to an estimated 286,000 annual operations

# Aircraft Parking Needs

## Gates



Existing Facilities	
Terminal 1	19
Terminal 2 East	13
Terminal 2 West*	<u>19</u>
<b>Total contact gates</b>	<b>51</b>

Commuter Terminal: 6 aircraft parking positions

*\* Includes Terminal 2 West expansion*

## Ultimate Requirements (PAL 14)

- **Between 53 and 62 gates**, to be refined based on final terminal concept, airline allocations and gate allocation rules
- **7 international gates** required (vs. 3 today)
- All aircraft will be accommodated on **contact gates**

## Remain Overnight Parking Positions



Terminal 2 West	10
Belly cargo area	3
North side **	<u>9</u>
<b>Total RON</b>	<b>22</b>

*\*\* The north side RON positions will be decommissioned when the new cargo complex is constructed*

- Between **25 and 36 RON positions**, depending on how many gates are constructed
- Should be **located south of Runway 9-27** if feasible, to limit runway crossings by aircraft being towed between the RON apron and the terminals

# Terminal Facility Needs

## Terminal Space

### Existing Facilities (square feet)

Commuter Terminal	30,000
Terminal 1	284,000
Terminal 2 East	242,000
Terminal 2 West*	<u>582,000</u>
<b>Total space (sf)</b>	<b>1,138,000</b>

*\* Includes Terminal 2 West expansion*

### Ultimate Requirements (PAL 14)

- Approximately **1,700,000 square feet of terminal building**, to be refined based on final terminal layout
- **Terminal 1 needs to be replaced.** It is functionally deficient in comparison with current passenger terminal design standards

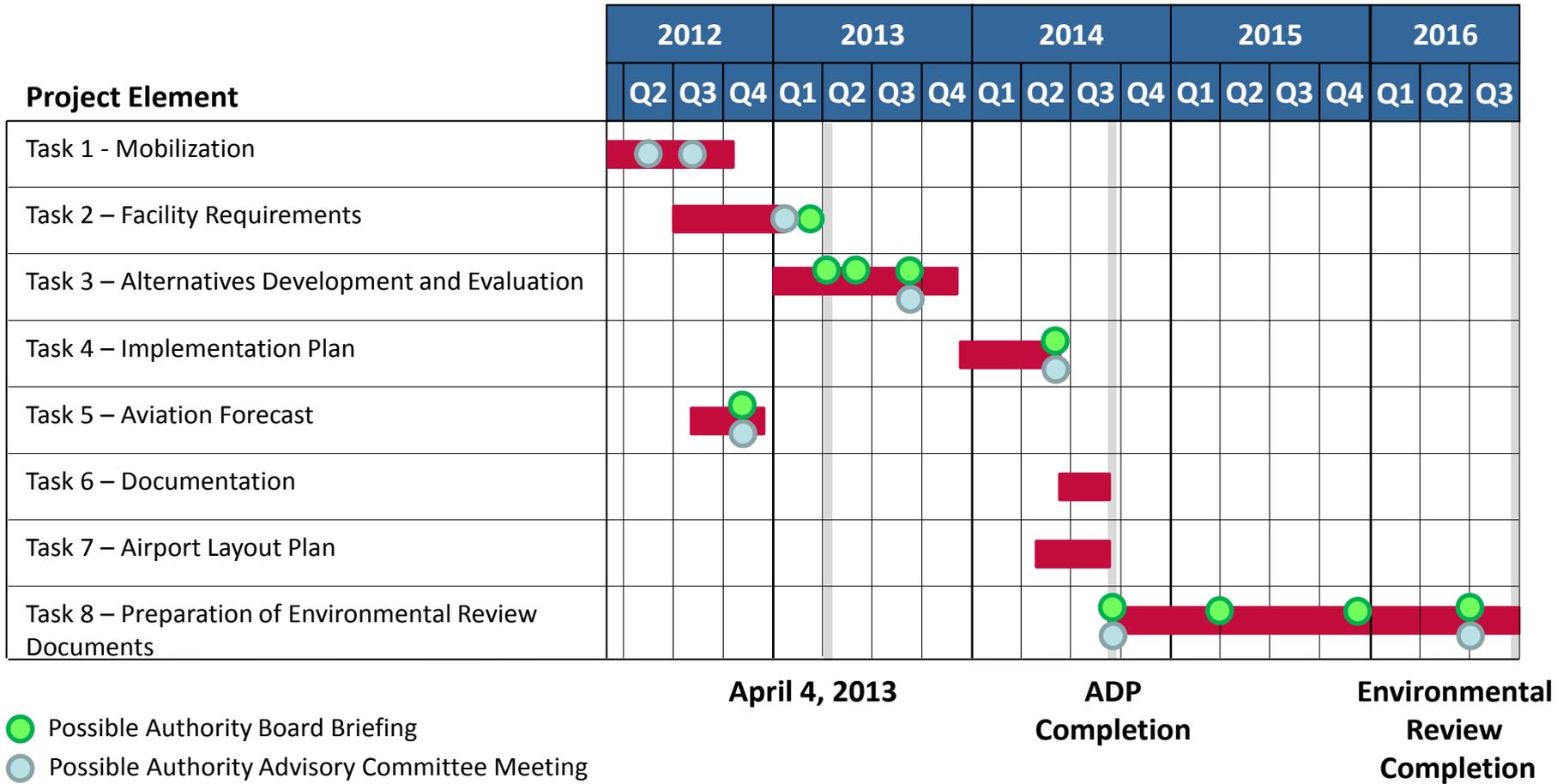
# Ground Transportation Needs

	Existing Facilities	Ultimate Requirements (PAL 14)
Public Parking	Close-in parking *	Parking requirements will be refined and discussed at the next Board meeting on May 2 <sup>nd</sup>
	Remote parking	
	<b>Total spaces</b>	
	<i>* Following completion of the Green Build</i>	
Employee Parking	<b>1,200 spaces</b>	<b>2,000 spaces</b>
Curbsides	Terminal 1	Between <b>3,300 and 3,900 feet</b> , to be refined based on final terminal configuration
	Terminal 2	
	<b>Total (feet)</b>	
Rental Car Facilities	<ul style="list-style-type: none"> <li>Rental Car Center is scheduled to open in 2015</li> <li>In its buildout configuration, it is sized to accommodate all foreseeable passenger demand</li> </ul>	

# Support Facility Needs

	Existing Facilities	Ultimate Requirements (PAL 14)
<b>Air Cargo</b>	Belly cargo 2.4 All-cargo <u>17.7</u> <b>Total (acres) 20.1</b>	Belly cargo 4.1 All-cargo <u>38.5</u> <b>Total (acres) 42.6</b>
<b>General Aviation</b>	12.4 acres	12.9 acres (additional aircraft parking area)
<b>Airline Support</b>	<b>Fuel storage</b> An additional tank may be required to maintain adequate fuel reserves	<b>Ground support equipment facilities</b> Equipment parking areas 5.2 Maintenance facility <u>4.6</u> <b>Total (acres) 9.8</b>
<b>Airport Support</b>	<b>Airport maintenance</b> Building area: 61,400 square feet Land area: 6.7 acres	Building area: 89,600 square feet Land area: 9.8 acres
<b>Office Space</b>	Authority office space is split between the Commuter Terminal, the West Wing, Truxton site etc.	SDCRAA offices may need to be relocated depending on future passenger terminal development

# ADP Schedule and Next Steps



**THANK YOU**

