

# AUTHORITY ADVISORY COMMITTEE BRIEFING

## San Diego International Airport

Prepared for

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

*February 27, 2013*



SAN DIEGO  
INTERNATIONAL  
AIRPORT

**SDIA** AIRPORT DEVELOPMENT PLAN

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# Agenda

- 1 Previous Meeting Recap
- 2 Facility Requirements
- 3 Terminal 1 Existing Conditions Assessment
- 4 Terminal Redevelopment Site – Opportunities and Constraints
- 5 Next Steps



1

## Previous Meeting Recap



# Previous Meeting Recap

## ■ Last meeting's agenda included:

- Passenger survey results
- Aviation activity forecasts
- Draft goals and objectives



Used as inputs for the facility requirements



Finalized based on input from the Committees

Will be used to evaluate alternatives and select a preferred plan





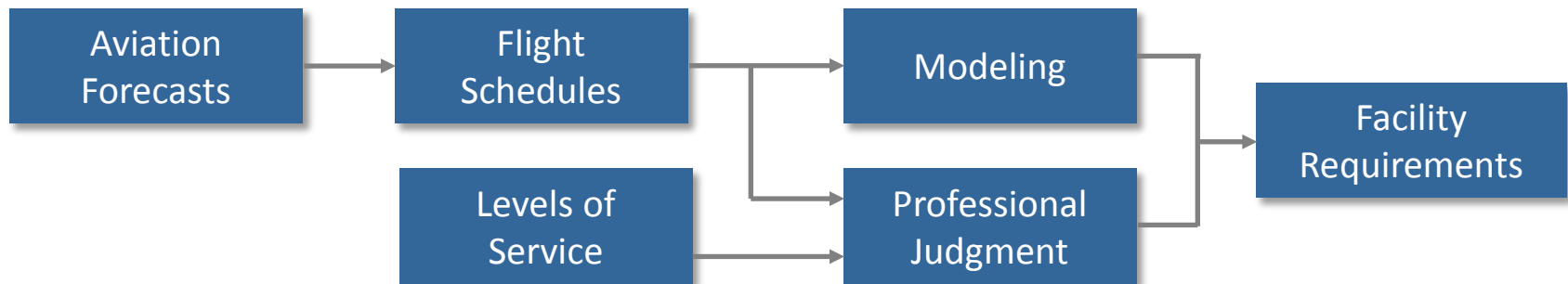
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## Facility Requirements



# Facility Requirements Overview

- **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**

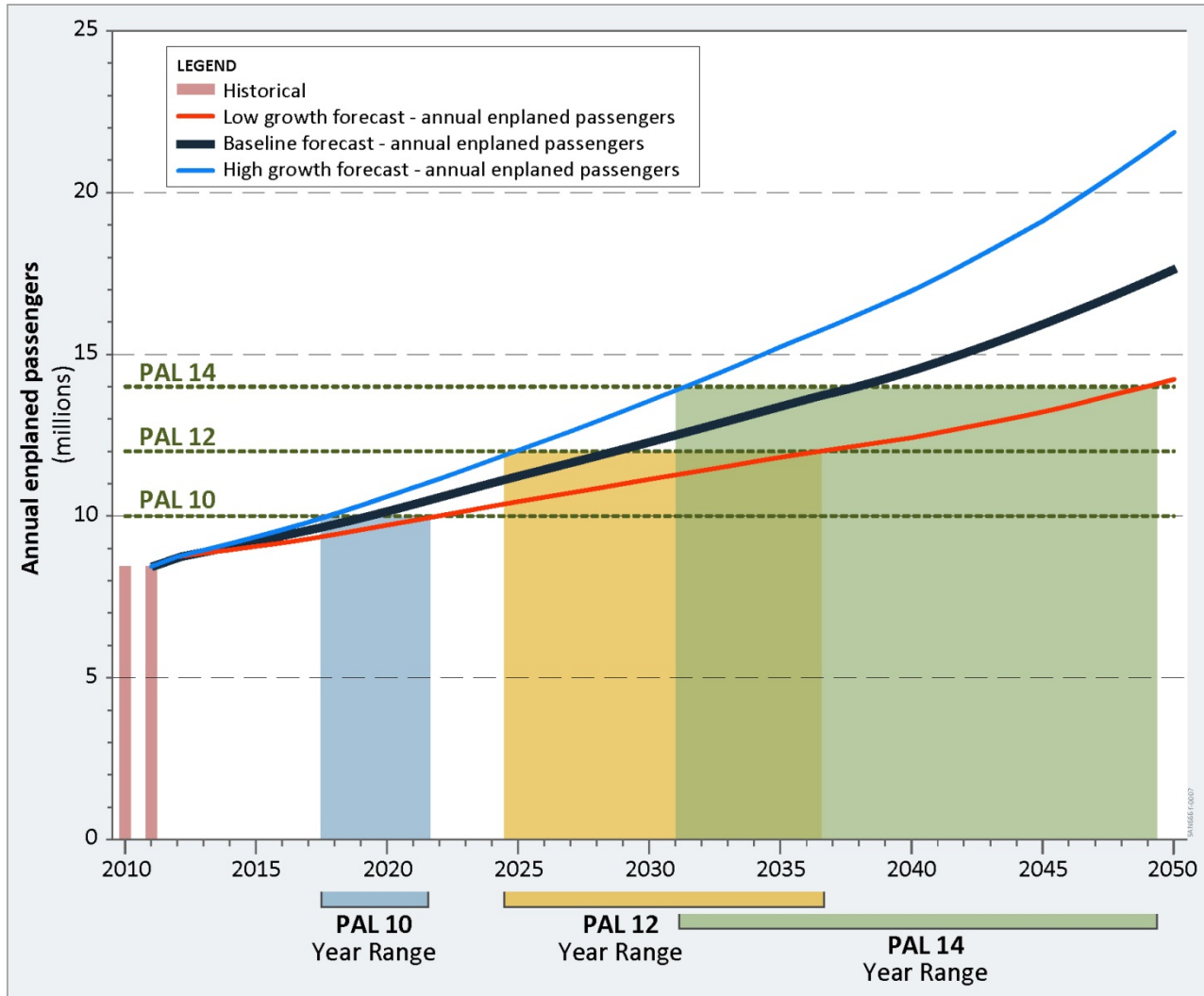


# Planning Activity Levels (1)

- **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		
	2011	PAL 10	PAL 12	PAL 14
		10 million annual enplanements	12 million annual enplanements	14 million annual enplanements
<b>Enplanements</b>				
Domestic	8,247,416	9,800,000	11,500,000	13,200,000
International	<u>195,196</u>	<u>400,000</u>	<u>600,000</u>	<u>900,000</u>
Total	8,442,612	10,200,000	12,100,000	14,100,000
<b>Cargo tonnage</b>	130,850	164,000	201,000	240,000
<b>Aircraft operations</b>	185,142	204,900	227,700	251,500

# Planning Activity Levels (2)





# Airfield Requirements

	Existing Facilities	Ultimate Requirements (PAL 14)
Runway	Runway 9-27 9,400 feet long by 200 feet wide	<ul style="list-style-type: none"><li>Runway will need to be fully 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>

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 Requirements

	Existing Facilities	Ultimate Requirements (PAL 14)
<b>Gates</b>	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	
	<i>* Includes Terminal 2 West expansion</i>	
<b>Remain Overnight Parking Positions</b>	Terminal 2 West	10
	Belly cargo area	3
	North side **	<u>9</u>
	<b>Total RON</b>	<b>22</b>
	<i>** The north side RON positions will be decommissioned when the new cargo complex is constructed</i>	
		<ul style="list-style-type: none"> <li>Between <b>53 and 62 gates</b>, to be refined based on final terminal concept, airline allocations and gate allocation rules</li> <li><b>7 international gates</b> required (vs. 3 today)</li> <li>All aircraft will be accommodated on <b>contact gates</b></li> </ul>
		<ul style="list-style-type: none"> <li>Between <b>25 and 36 RON positions</b>, depending on how many gates are constructed</li> <li>Should be <b>located south of Runway 9-27</b> if feasible, to limit runway crossings by aircraft being towed between the RON apron and the terminals</li> </ul>

# Terminal Facility Requirements

## Terminal Space



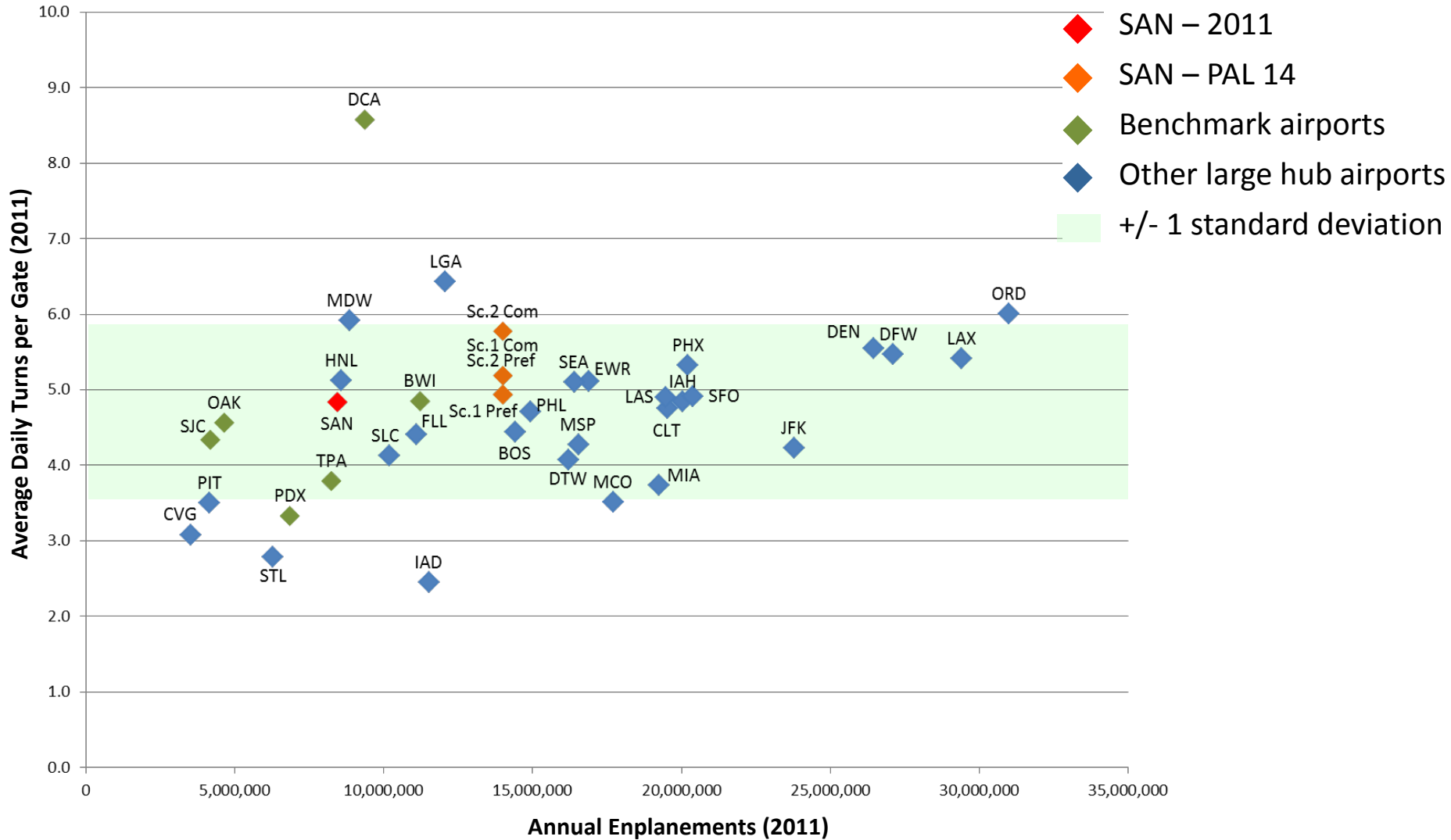
Existing Facilities	
Commuter Terminal	30,000
Terminal 1	284,000
Terminal 2 East	242,000
Terminal 2 West*	<u>582,000</u>
<b>Total space (sf)</b>	<b>1,138,000</b>

*\* Includes Terminal 2 West expansion*

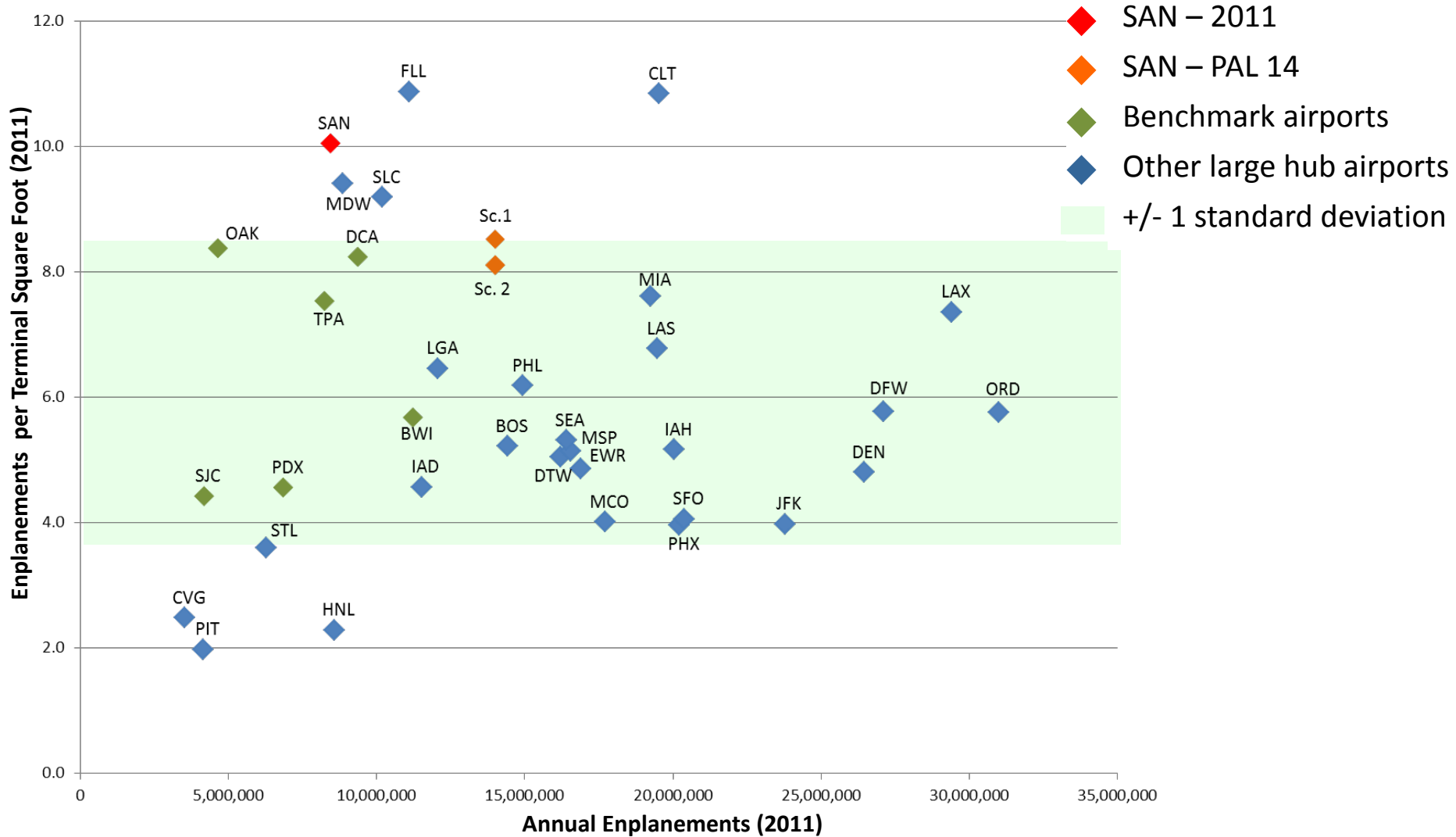
## Ultimate Requirements (PAL 14)

- 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

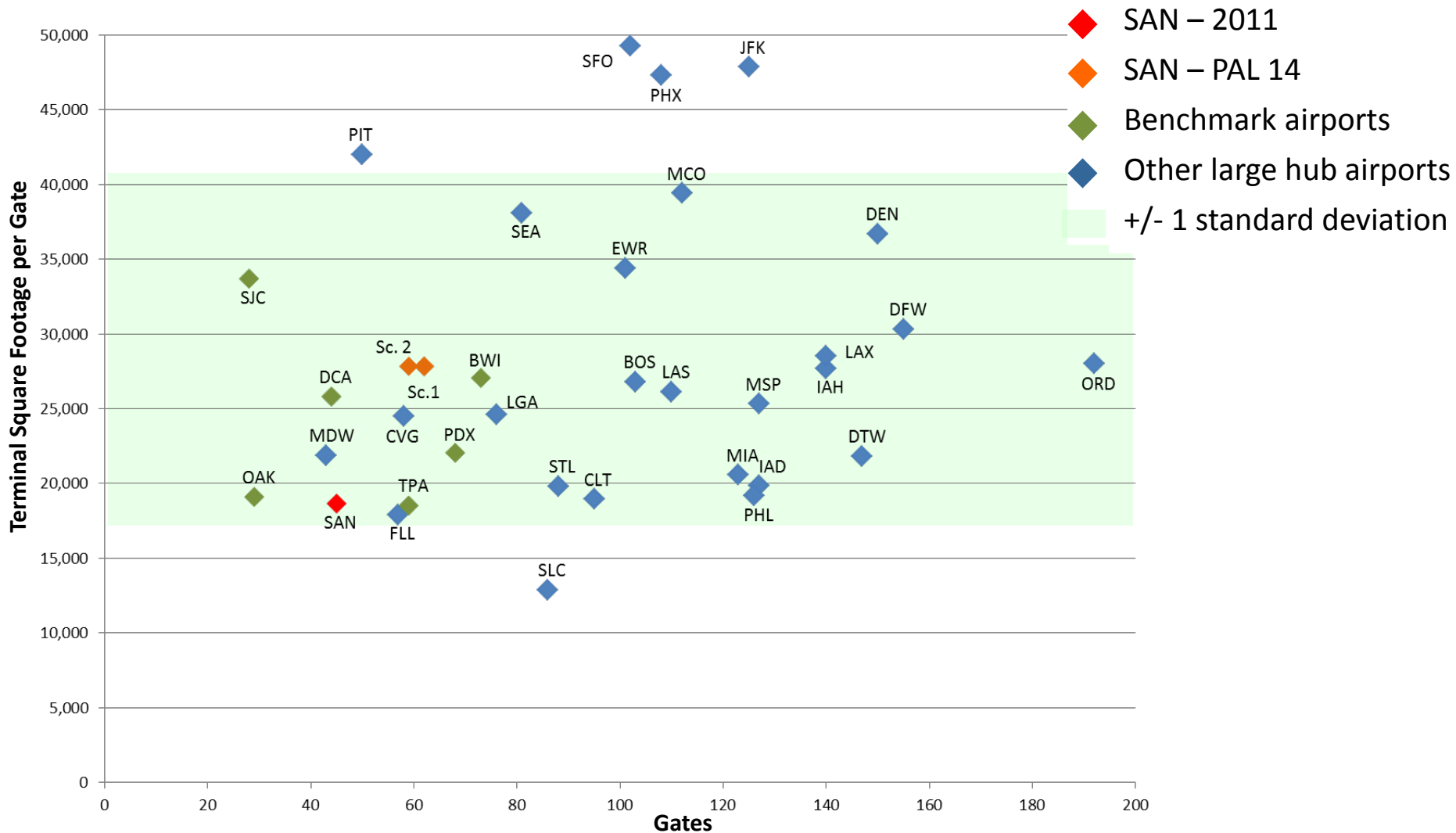
# Benchmarking - Gate Utilization



# Benchmarking - Enplanements per Terminal Square Foot



# Benchmarking - Terminal Square Footage per Gate



# Ground Transportation Requirements

	Existing Facilities		Ultimate Requirements (PAL 14)	
Public Parking	Close-in parking *	2,666	Close-in parking	7,300
	Remote parking	<u>3,685</u>	Remote parking	<u>3,800</u>
	<b>Total spaces</b>	<b>6,351</b>	<b>Total spaces</b>	<b>11,100</b>
	<i>* Following completion of the Green Build</i>			
Employee Parking	<b>905 spaces</b>		<b>2,000 spaces</b>	
Curbsides	Terminal 1	1,000	Between <b>3,300 and 3,900 feet</b> , to be refined based on final terminal configuration	
	Terminal 2	<u>1,150</u>		
	<b>Total (feet)</b>	<b>2,150</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 passenger demand beyond PAL 14</li> </ul>			

# Support Facility Requirements

	Existing Facilities	Ultimate Requirements (PAL 14)						
Air Cargo	Belly cargo	2.4						
	All-cargo	<u>17.7</u>						
	<b>Total (acres)</b>	<b>20.1</b>						
		<table border="1"> <tr> <td>Belly cargo</td> <td>4.1</td> </tr> <tr> <td>All-cargo</td> <td><u>38.5</u></td> </tr> <tr> <td><b>Total (acres)</b></td> <td><b>42.6</b></td> </tr> </table>	Belly cargo	4.1	All-cargo	<u>38.5</u>	<b>Total (acres)</b>	<b>42.6</b>
Belly cargo	4.1							
All-cargo	<u>38.5</u>							
<b>Total (acres)</b>	<b>42.6</b>							
General Aviation	12.4 acres	12.9 acres						
Airline Support	<ul style="list-style-type: none"> <li>Fuel storage</li> <li>Ground support equipment maintenance and storage</li> </ul>							
Airport Support	<ul style="list-style-type: none"> <li>Airport maintenance</li> </ul>							
Office Space	<ul style="list-style-type: none"> <li>Authority office space is split between the Commuter Terminal, the West Wing, Truxton site etc.</li> </ul>	<ul style="list-style-type: none"> <li>Recommends that Authority offices be consolidated in a single facility</li> </ul>						



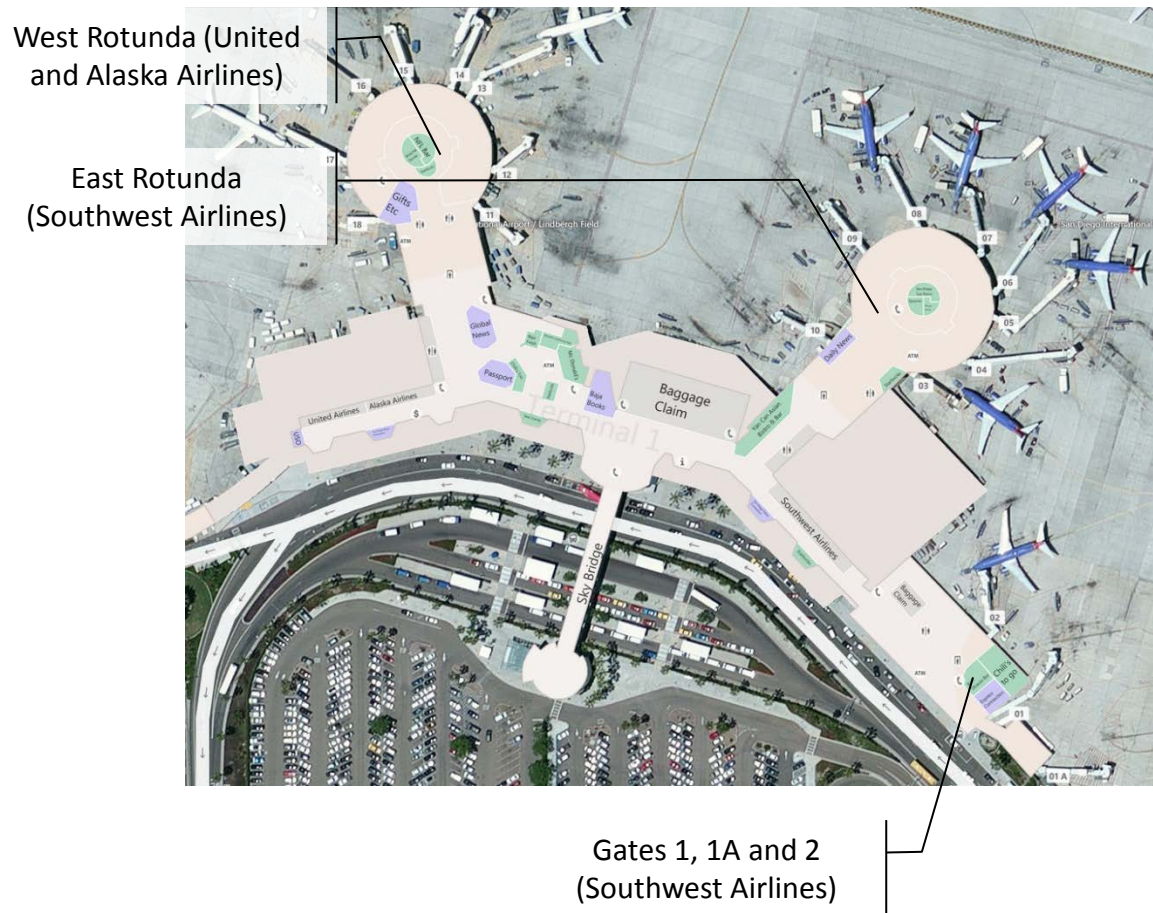
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## Terminal 1 Existing Conditions Assessment








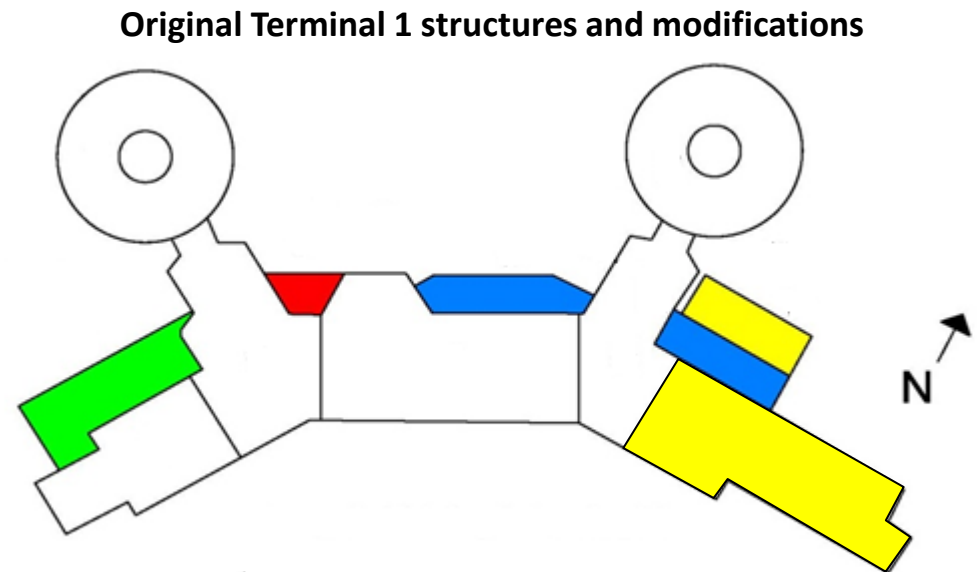
# Terminal 1 Facility Overview

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



# 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
- Building does not meet requirements of the current building code for structures in seismic zone

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



# Functional Assessment – Airfield Interface

- **Location of the two rotundas is providing an obstruction to needed improvements for airfield operations**
- **Configuration causes aircraft pushback constraints from some gates on to the existing active taxiway**

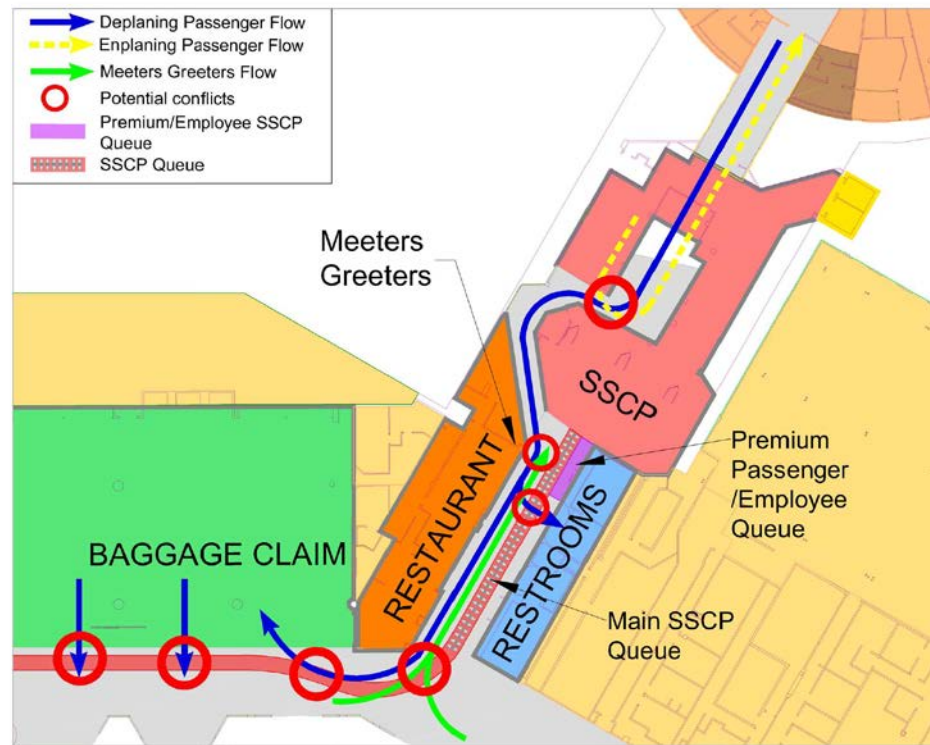


# Functional Assessment - Security Screening

- Lack of space for security screening operations prevents the introduction of appropriate security technologies with greater space requirements and the expansion of the current checkpoints, limiting throughput



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-aeronautical revenues



*Limited concessions offerings*



*Limited food offerings*



# Functional Assessment

- **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 addressed due to the overall lack of an appropriate building envelope**

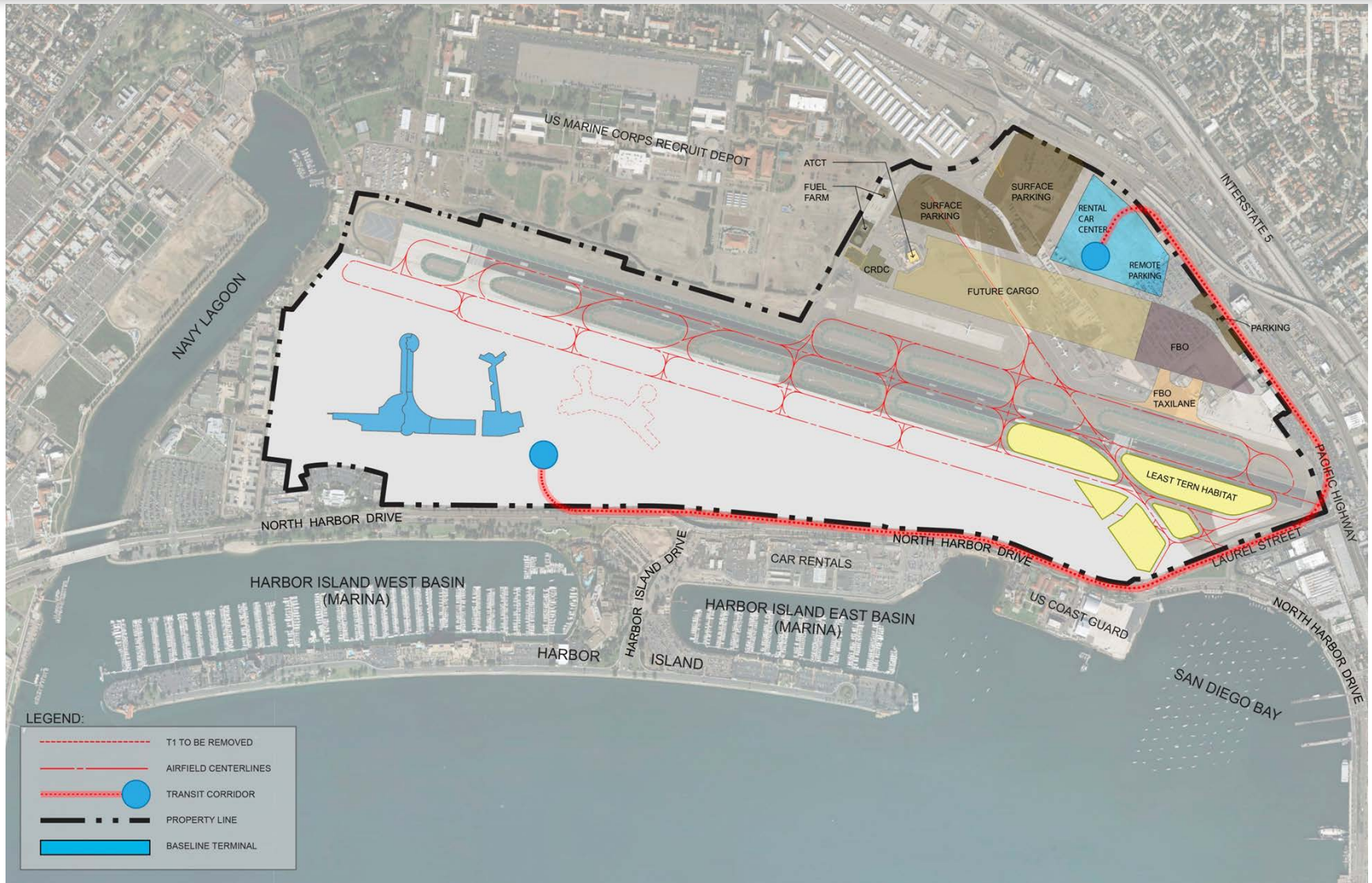


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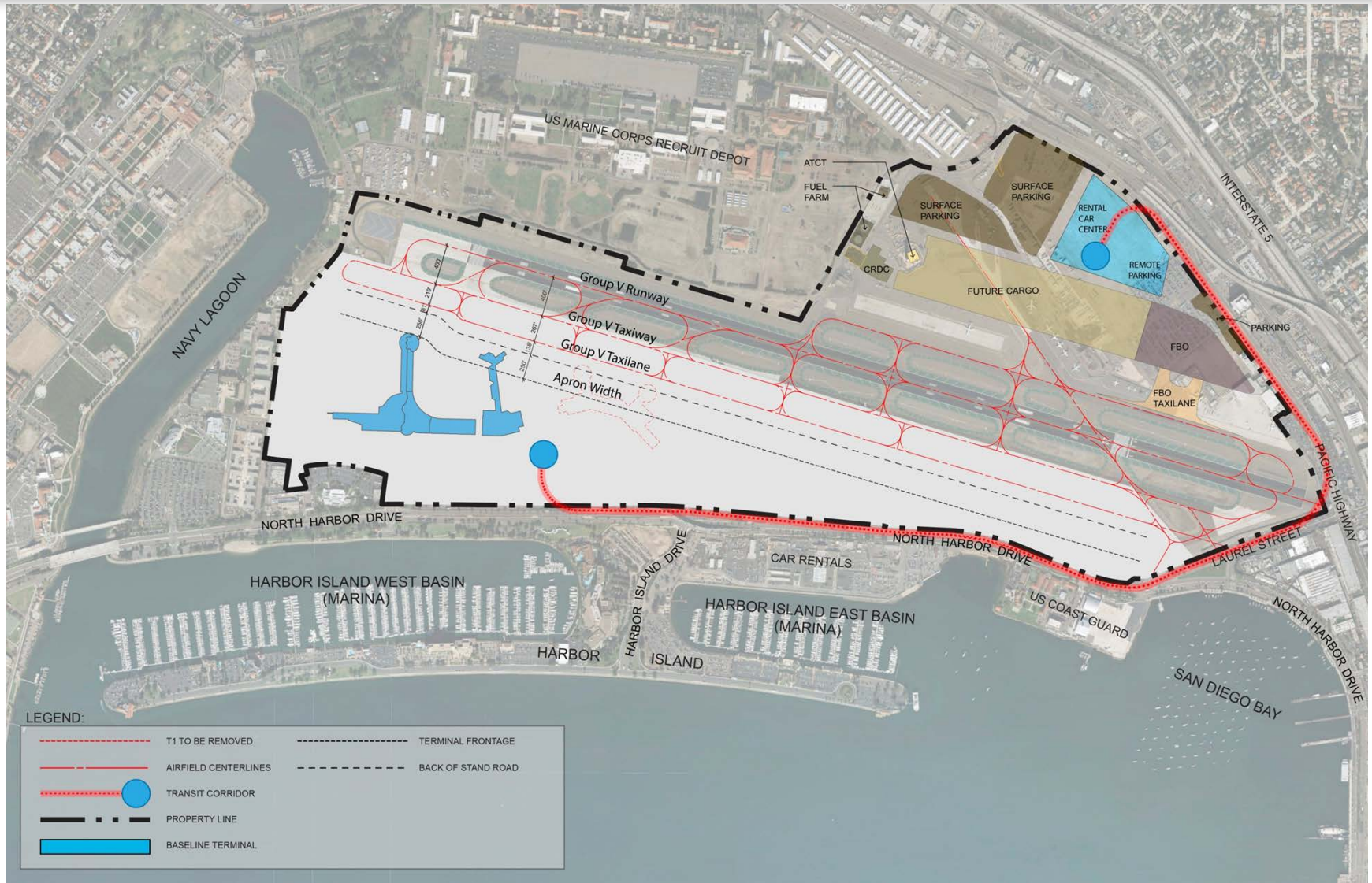
## Terminal Redevelopment Site



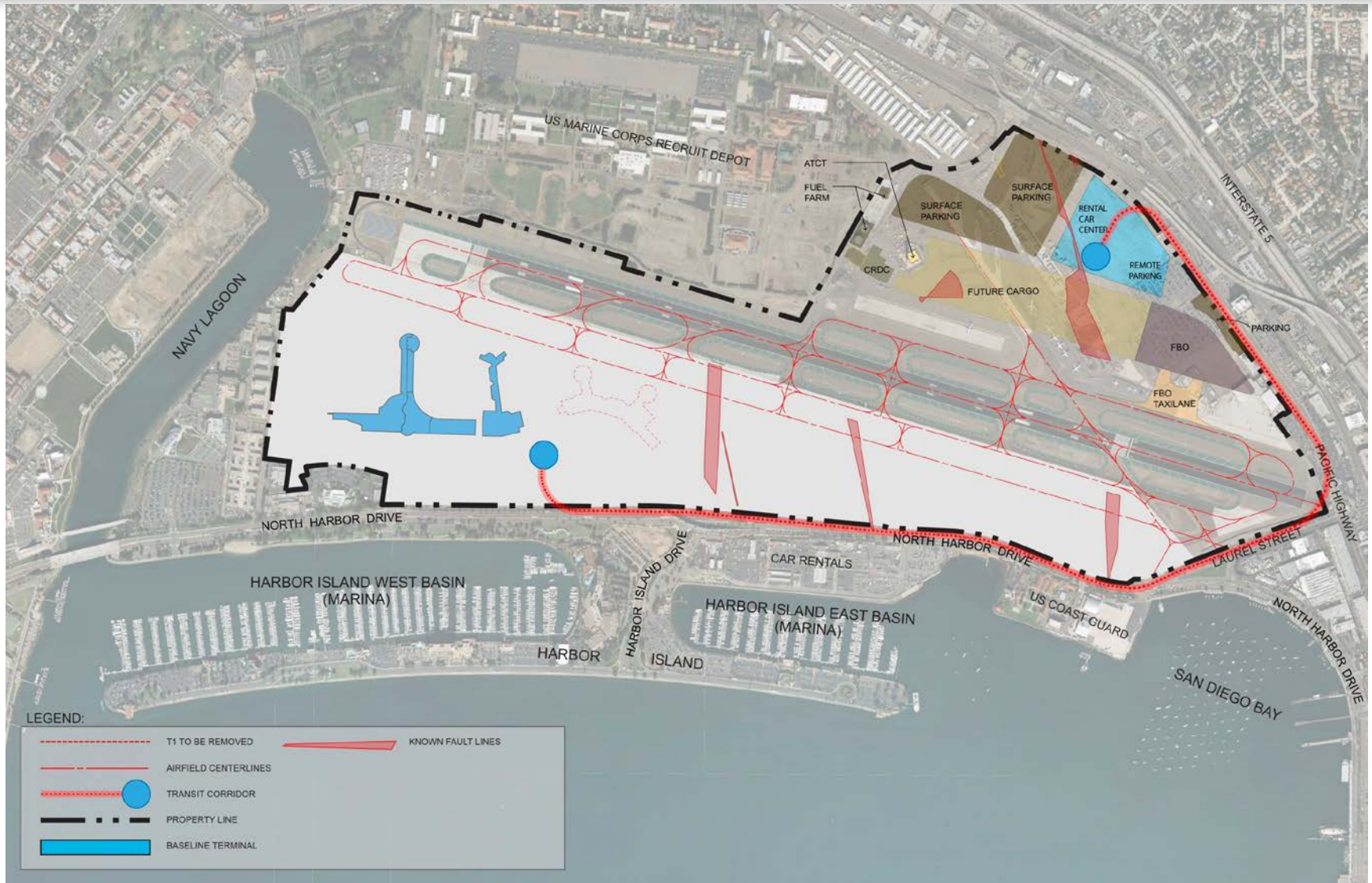
# Constraints: Land



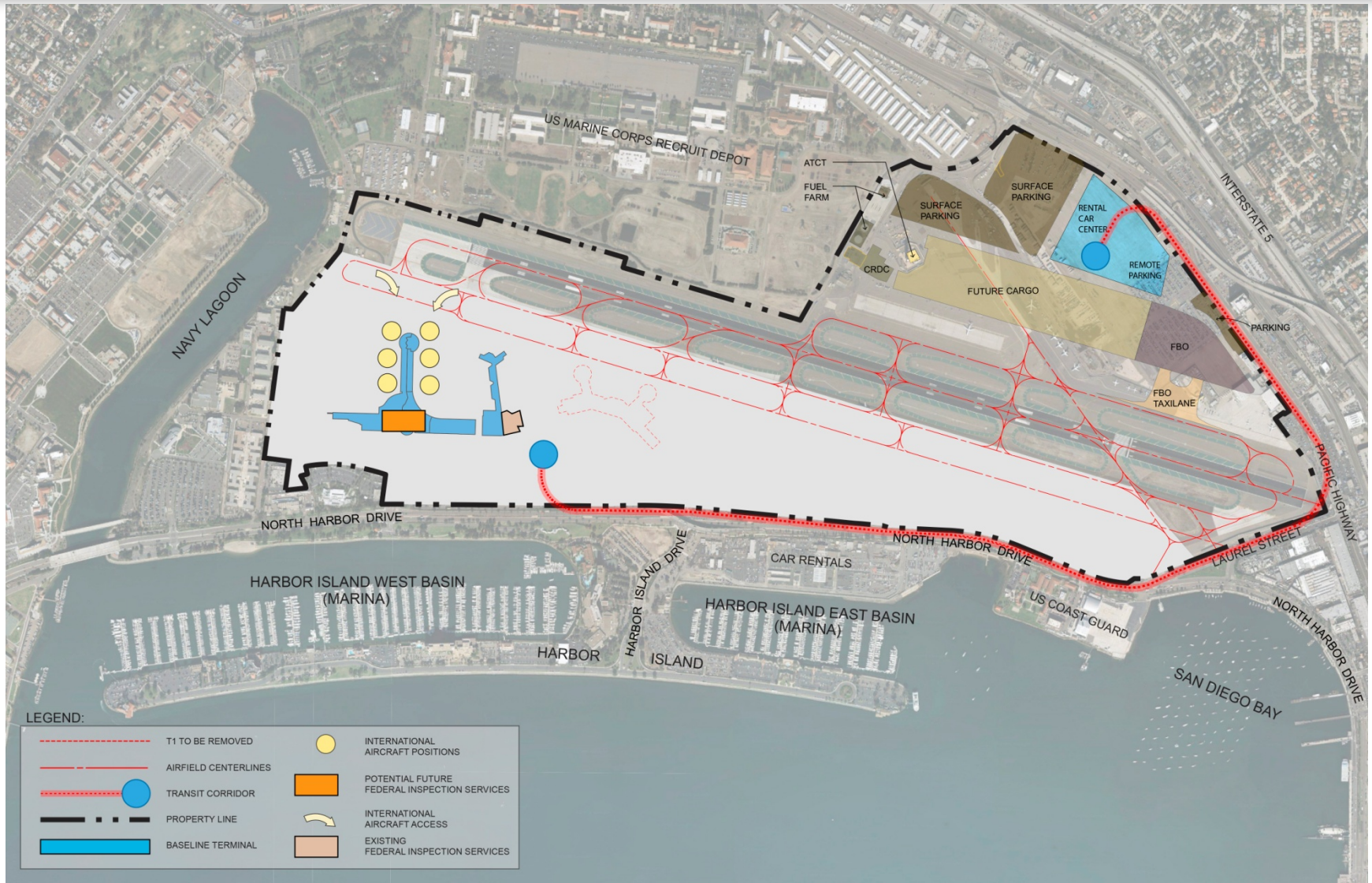
# Constraints: Airfield



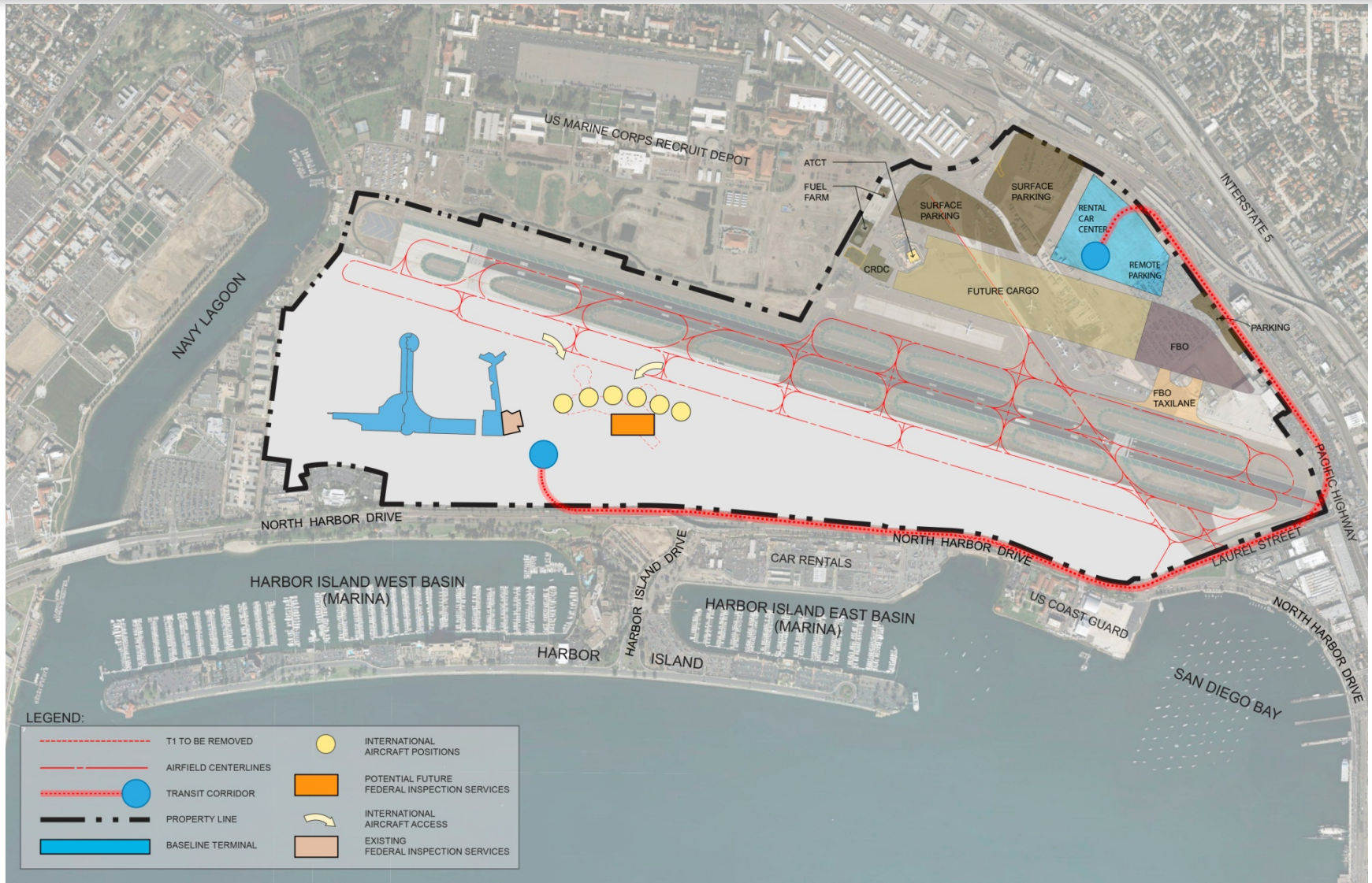
# Constraints: Fault Lines (Known)



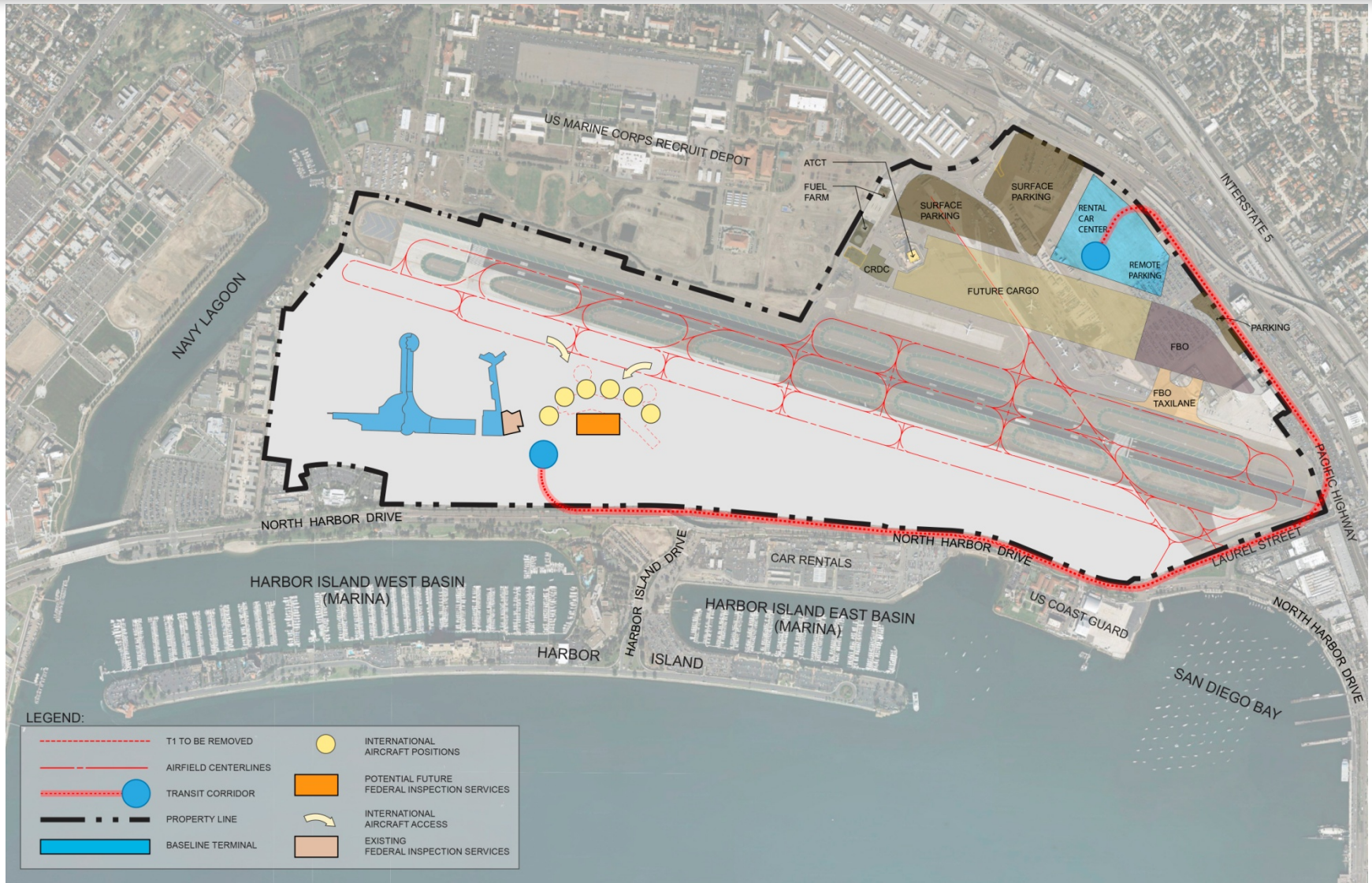
# Constraints: T2 FIS



# Constraints: T1 East FIS



# Constraints: Central FIS





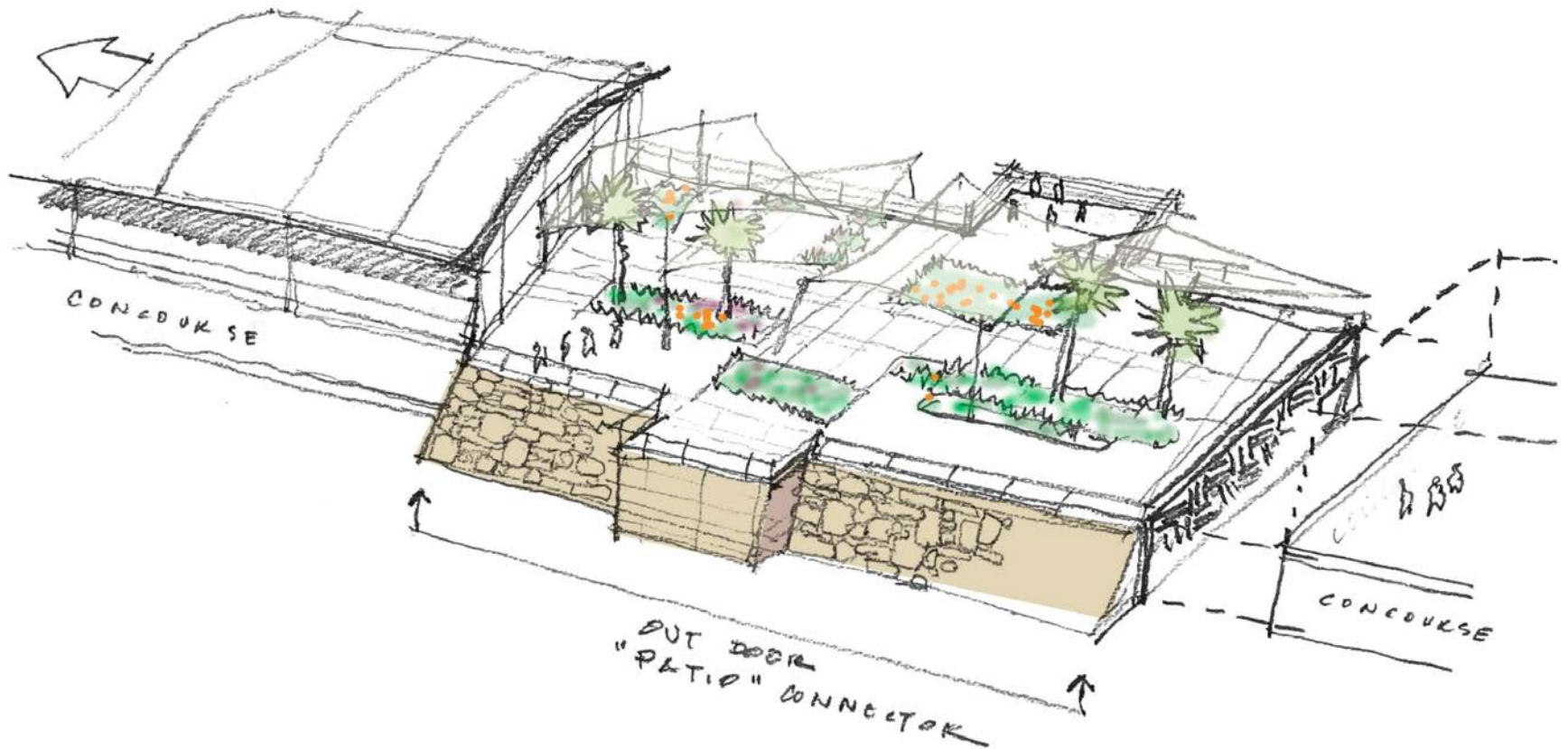
# Opportunities



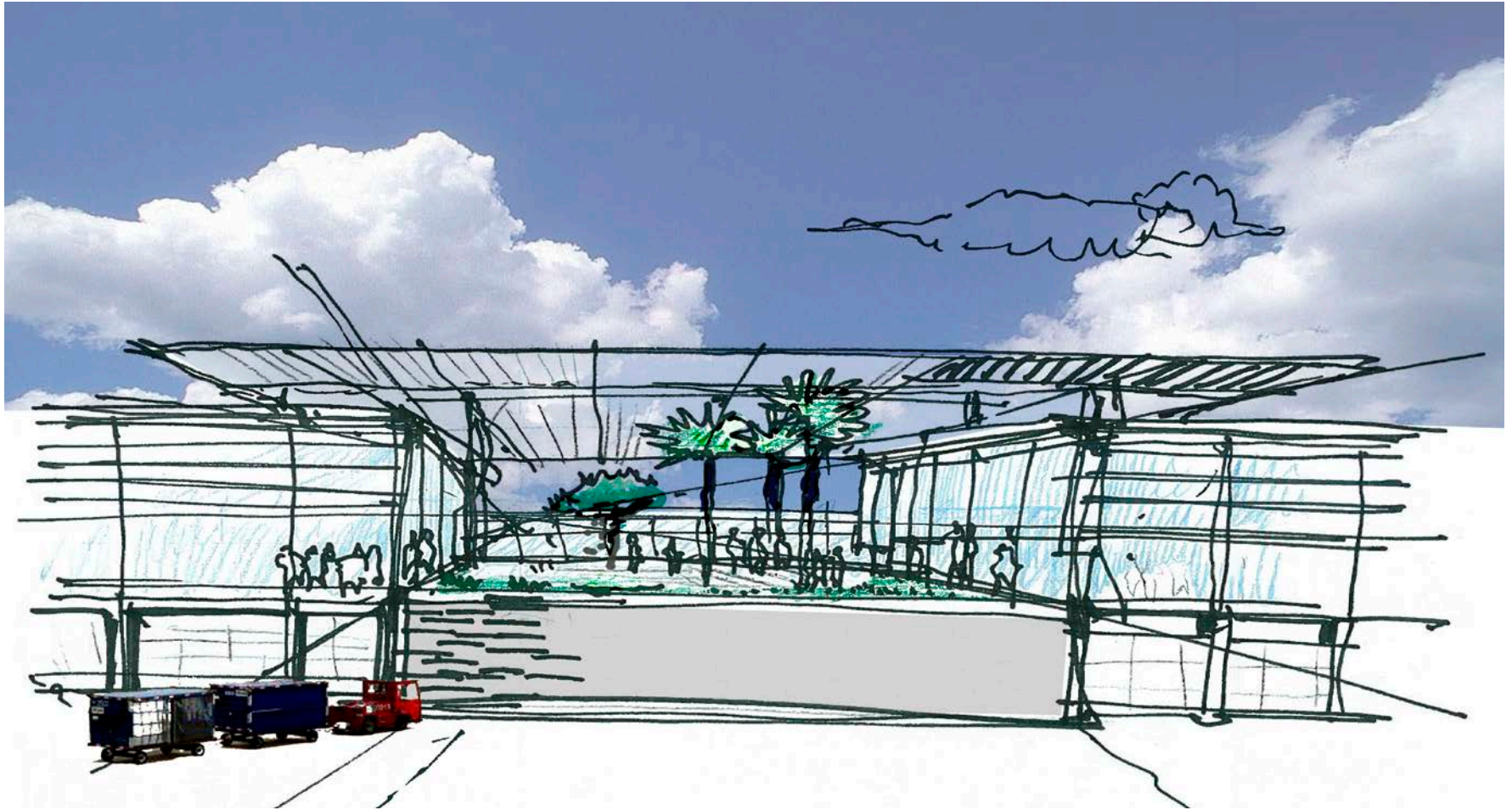
## What unique assets can we leverage?

- Connectivity and visibility to the region, the city, and to the “Airport Neighborhood”: Compactness
- Proximity to Marina, Point Loma, Hotels, Cruise ship and waterfront activities
- Unique weather, flora and vibrant local culture
- Variety of carriers: international and local

# Opportunities: Fault Line Outdoor space



# Opportunities: Fault Line Outdoor space





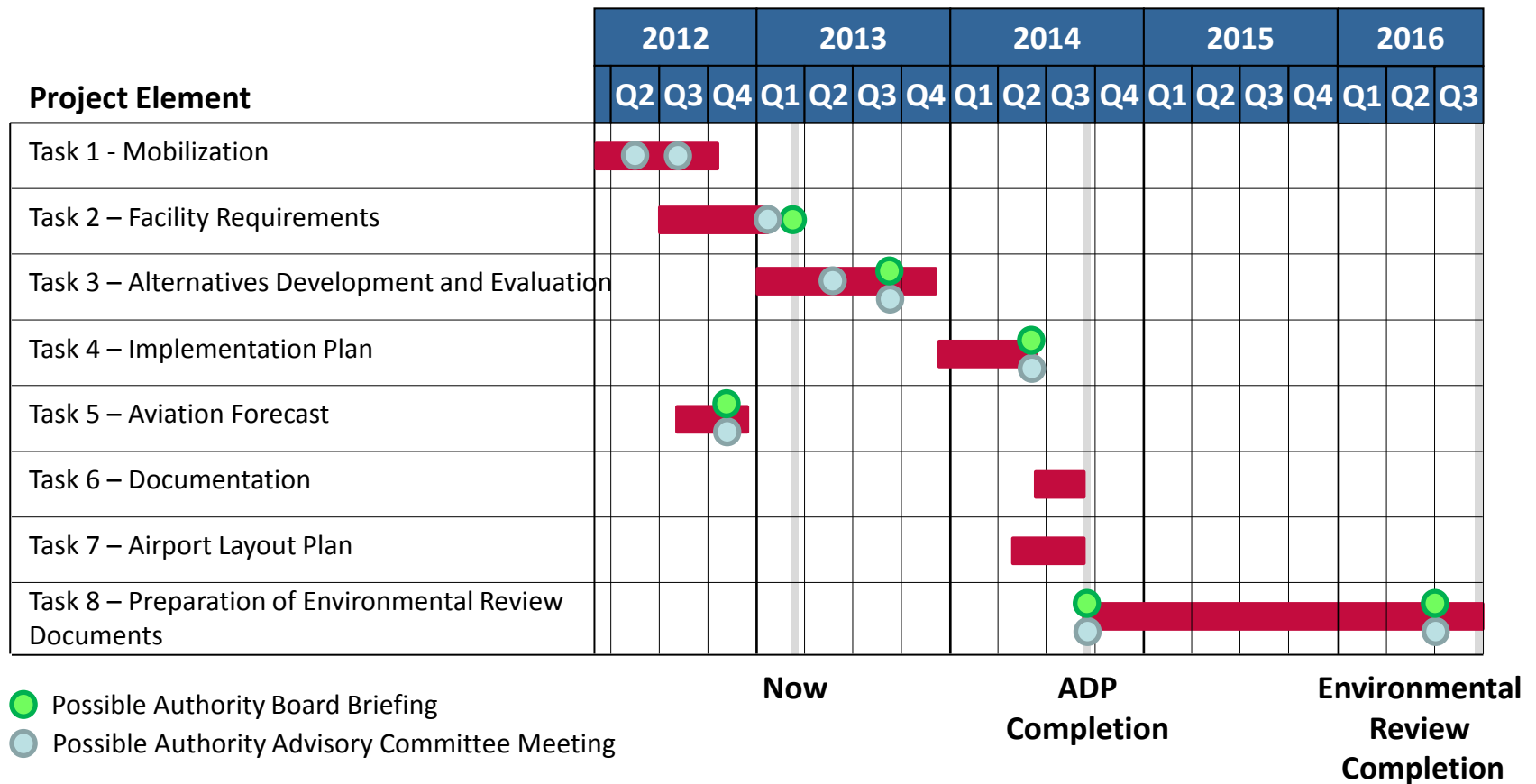
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Next Steps



# Next Steps

- Next meeting to be scheduled for May to start discussing development concepts



**THANK YOU**



**Leigh | Fisher**  
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SDIA AIRPORT DEVELOPMENT PLAN



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7, 2013