

# **SAN DIEGO**

## **International Airport**

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AIRPORT MASTER PLAN  
SAN DIEGO INTERNATIONAL AIRPORT

### **SECTION 7.2**

Terminal



## 7.2 Terminal

### 7.2.1 Program Methodology

The terminal facility requirements for the Airport Master Plan are determined by an analysis of the following: existing terminal plans, on-site observations, data from comparable airports, industry standards, and planning guidelines. To establish the existing service level baselines, existing terminal facilities were analyzed to determine the current planning factors. Planning factors are based on the design day airline schedule for July 2004. Every airport has unique operating characteristics requiring consideration when projecting future terminal requirements. A functional area may be undersized or oversized at one airport while it may operate efficiently at another. The baseline planning factors determined from the design day schedule are then compared to industry standards and other comparable airport planning factors to determine if deficiencies or excesses exist. These deficiencies or excesses are then reconciled with on-site observations to determine if they are providing acceptable Levels of Service (LOS) for the passengers and tenants of the facility. Depending on the result of this analysis, the current planning factor may be used in the projected facility requirements or may be adjusted if the LOS standards are not met.

### 7.2.2 Existing Terminal Areas and Planning Factors

At SDIA, the existing terminal buildings provide a varying range of service levels. The most recent addition, Terminal Two West, is expected to provide the highest LOS and planning factors to meet current industry standards. For this study, the existing terminal factors were determined by combining the facilities for all of the terminals to establish overall terminal factors. Future planning factors were determined by comparing the existing terminal factors to planning factors, which provide a high LOS, generally described as LOS B by the International Air Transport Association (IATA). LOS B is described as providing a high LOS, condition of stable flow with very few delays and a high level of comfort. The existing terminal factors are adjusted as required to obtain the higher service standards for both the 2015 and 2030 forecast program requirements. While the development of alternatives to meet the forecast demand, may not immediately replace older terminal facilities due to the costs, the forecast program requirements should clearly demonstrate any deficiencies existing in the current terminal facilities.

In **Table 7.2-1**, the functional components of the terminals are divided into the following categories: airline functions, concessions, federal inspection services (FIS), secure public area, non-secure public area, and non-public area. For each functional area, an "existing factor" is shown based on the existing facilities and passenger demand levels. If required, the planning factors have been modified to increase or decrease facility requirements based on the standards discussed above. These factors are shown in the Planning Factors column in **Table 7.2-1**.

## 7. Facility Requirements Analysis

Table 7.2-1

Existing Baseline Factors & Future Planning Factors

Description	Demand Level	Existing Factor	LF/#	SF	Planning Factor	Comments
<b>Airline Functions</b>						
Ticket Counter Area	2,527 PHOP	2.61 SF/PHOP	N/A	6,586	3.84 SF/PHOP	11' x LF of T/C
Ticket Counter Length	2,527 PHOP	0.30 LF/PHOP	765	N/A	0.35 LF/PHOP	Comparable Airports
Ticket Counter Queuing	2,527 PHOP	3.73 SF/PHOP	N/A	9,426	7.00 SF/PHOP	20' x LF T/C
Airline Ticket Office	2,527 PHOP	11.28 SF/PHOP	N/A	28,495	11.28 SF/PHOP	30' x LF of T/C
Baggage Claim Area	2,336 PHTP	21.85 SF/PHTP	N/A	51,040	19.00 SF/PHTP	Comparable Airports
Baggage Claim Frontage	2,336 PHTP	0.50 LF/PHTP	1,177	N/A	0.60 LF/PHTP	Comparable Airports
Baggage Claim Devices	2,336 PHTP	130.78 LF/Device	9	N/A	130 LF/Device	Comparable Airports
Baggage Service Office	2,336 PHTP	1.97 SF/PHTP	N/A	4,597	1.97 SF/PHTP	Existing Factor
Outbound Baggage	2,527 PHOP	19.79 SF/PHOP	N/A	50,010	19.79 SF/PHOP	65' x LF of T/C
Inbound Baggage	2,336 PHTP	11.68 SF/PHTP	N/A	27,278	11.68 SF/PHTP	50% of OB Baggage
Airline Operations	7,637,193 ANNEP	0.008 SF/ANNEP	N/A	61,035	0.008 SF/ANNEP	Existing Factor
Departures Lounges (Holdrooms)	39 Gates	2,636 SF/Gate	N/A	102,788	(See Forecast Requirements)	Existing Factor
Clubrooms	7,637,193 ANNEP	0.0014 SF/ANNEP	N/A	10,957	0.0014 SF/ANNEP	Existing Factor
<b>Concessions</b>						
Concessions (Includes Storage)	7,637,193 ANNEP	0.0090 SF/ANNEP	N/A	68,914	0.0120 SF/ANNEP	Comparable Airports
<b>Federal Inspection Services</b>						
FIS (CIS, Claim, CBP, USDA)	125 PHTP-I	56.00 SF/ANNEP	N/A	7,000	85 SF/ANNEP	Existing Factor
<b>Secure Public Area</b>						
Passenger Screening Checkpoint	2,527 PHOP	140 PHOP/Lane	18	N/A	160 PHOP/Lane	Existing Factor
Passenger Screening Area	18 Lanes	567 SF/Lane	N/A	10,203	1,300 SF/Lane	Comparable Airports
Concourse Circulation	39 Gates	2,329 SF/Gate	N/A	90,825	3,000 SF/Gate	Comparable Airports
<b>Non-Secure Public Area</b>						
Circulation - Ticketing	2,527 PHOP	6.54 SF/PHOP	N/A	16,526	10.50 SF/PHOP	30' x LF T/C
Circulation - Baggage Claim	2,336 PHTP	3.16 SF/PHTP	N/A	7,380	5.00 SF/PHTP	Comparable Airports
Circulation - General	7,637,193 ANNEP	0.007 SF/ANNEP	N/A	52,940	0.015 SF/ANNEP	Comparable Airports
USO			N/A	6,520	(See Forecast Requirements)	

Table 7.2-1

Existing Baseline Factors & Future Planning Factors

Description	Demand Level	Existing Factor	LF/#	SF	Planning Factor	Comments
<b>Non-Public Area</b>						
TSA	2,527 PHOP	1.85 SF/PHOP	N/A	4,676	1.85 SF/PHOP	Existing Factor
SDCRAA	7,637,193 ANNEP	0.0009 SF/ANNEP	N/A	7,163	0.0009 SF/ANNEP	Existing Factor
Mech./Elec./Maint./Storage		7% % of T. Area	N/A	58,000	12% % of T. Area	Comparable Airports

N/A = Not Applicable  
 SF = Square Feet; LF = Linear Feet  
 PHOP = Peak Hour Originating Passengers (July 2004)  
 PHTP = Peak Hour Terminating Passengers (July 2004)  
 PHTP-I = Peak Hour Terminating International Passengers (July 2004)  
 PHP = Peak Hour Passengers (July 2004)  
 ANNEP = Annual Enplaning Passengers (2003)

Source: HNTB analysis

## **7. Facility Requirements Analysis**

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### **Airline Functions**

Airline functions include those areas directly related to airline operations and passenger processing, such as ticketing, departure lounges, baggage services, airline operations, and airline clubrooms.

The current ticketing areas for the terminals provide a total of 765 linear feet of ticket counter frontage, including counter area used for both agent positions and automated check-in machines. The ticket counter areas in Terminal One and Terminal Two East (the distance from the back wall to the face of the ticket counter) do not meet the current standard used in most domestic O/D facilities of 11 feet. For Terminal Two West and for all programmed requirements, 11 feet is designated. The Terminal Two West standard of 3.5 square feet per peak hour originating passenger (SF/PHOP) will also be used for future requirements. Similarly, the existing ticket counter queuing area is less than optimal due to the Terminal One and Terminal Two East conditions. To provide a high LOS standard, a 20-foot queuing depth should be planned to achieve a planning factor of 7.0 SF/PHOP. The current airline ticket office (ATO) area is an above-standard area based on the length of the ticket counter and a 30-foot-deep ATO. The current 11.28 SF/PHOP would be retained to reflect local conditions. Airline clubrooms are projected to increase at the current level of 0.0014 square feet per annual enplaning passenger (SF/ANNEP).

The baggage claim area for the terminals is currently larger than required since the area was provided in Terminal Two West for an additional two claim devices. The existing planning factor of 21.85 square feet per peak hour terminating passenger (SF/PHTP) has been reduced to 19.0 SF/PHTP (IATA LOS B) to reflect this provision. The existing nine claim devices provide an average of 130 linear feet per device. This maintained for future claim devices. The current 1.97 SF/PHTP factor for baggage service offices is also maintained for future facilities. The existing planning factors for outbound and inbound baggage are also maintained for future facilities.

The existing airline operations area planning factor of 0.008 SF/ANNEP is maintained for future requirements. Currently, the 41 operating gates at SDIA provide an average of 2,636 square feet per gate. Future requirements are based on the projected fleet mix to determine boarding gate requirements.

### **Concessions**

Determination of the size of concessions is influenced by a variety of specific factors at airports. For this study, the standard of using a specific square footage per enplaned passenger consistent with larger origin/destination (O/D) markets such as San Diego.

Further analysis is warranted as part of these requirements and will be developed based on current data and study of concessions recently prepared by the Authority.

The current planning factor of 0.009 SF/ANNEP is increased to 0.012 to reflect standards for comparable airports and the general increase in the area requirements for concessions at passenger terminals.

Market analysis has not been done specific to San Diego in the development of overall concession requirements for the facilities. It is recommended that specific alternatives proposed for meeting demand consider concessions that respond to a wide demographic of income level and passenger profiles.

In general, SDIA is well below the industry standard for acceptable levels of concessions per enplaned passenger.

### **Federal Inspection Services (FIS)**

The facilities provided for the federal inspection of arriving international passengers include: Customs and Immigration Services (CIS), baggage claim, Customs and Border Patrol (CBP), United States Department of Agriculture (USDA). Currently, the FIS facilities at SDIA process a peak hour passenger level of 125 passengers. The existing 7,000 square feet for the FIS facility is smaller than comparable airports.

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## 7. Facility Requirements Analysis

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Future requirements will be based on 85 square feet per peak hour international terminating passenger. This provides comparable airport standards.

### **Secure Public Area**

Secured public areas include the security screening checkpoints (SSCP), secure circulation, and public restrooms. Currently, the 18 SSCP lanes at SDIA process approximately 140 passengers per hour based on peak hour demand. Since four SSCP locations are provided in the terminals and the peak demand is not spread evenly through the terminals, the SSCP throughput is increased to 160 passengers per hour for the future requirements. This level is similar to comparable airports. The security area is insufficient by TSA standards. This is expected since SDIA, like most other airports, have been required to squeeze greater SSCP requirements into limited terminal area. The future requirements will reflect a larger 1,300 square feet per security lane. Currently, concourse circulation is inadequate at both Terminal One and Terminal Two East, and the current factor of 2,329 square feet per gate has been increased to 3,000 square feet per gate to reflect improvements in passenger circulation.

### **Non-Secure Public Area**

The non-secured public areas include circulation in the ticketing lobby and baggage claim lobby as well as general circulation such as entrance lobbies, fire stairs, vestibules, escalators, and elevators. The United Services Organization (USO) is also included in the non-secure public area. The existing planning factors for circulation at ticketing, baggage claim and for general circulation are increased to reflect new facilities that meet the standards of Terminal Two West. The USO is assumed to remain the same size throughout the forecast years.

### **Non-Public Area**

Non-public areas include private office space for the Authority, the TSA and building support spaces such as mechanical rooms, loading docks, maintenance, and storage. For both the TSA and the Authority offices, the current planning factors based on passenger demand will be used to program these areas for the forecast requirements. Currently, mechanical, electrical, maintenance and storage facilities comprise about seven percent of the total terminal area. Typically, these areas are programmed at 12 percent of the terminal area. Future facilities will be programmed at 12 percent to allow for unidentified support areas.

### **7.2.3 Existing Level of Service (LOS)**

**Table 7.2-2** provides an analysis of the excesses and deficiencies of the current overall terminal facilities if high LOS factors were applied to the existing demand levels. The applied factors are the same as the planning factors for the 2015 and 2030 facility program requirements. Most existing passenger processing facilities currently are deficient when these standards are applied. Overall, the SDIA terminals are approximately 165,500 square feet deficient in area to provide a high LOS.

### **7.2.4 Passenger Terminal Facility Requirements - 2015 High Constrained Forecast**

The passenger terminal facility requirements projected for the 2015 high constrained forecast are shown in **Table 7.2-3**. The requirements are based on the planning factors discussed in Section 7.2.2, Existing Terminal Areas and Planning Factors.

## 7. Facility Requirements Analysis

**Table 7.2-2**  
**Existing Level of Service**

Description	Demand Level	Existing Factor		LF/#	SF	Planning Factor		Required 2004	Existing Excess/(Deficiency)	
									Units	%
<b>Airline Functions</b>										
Ticket Counter Area	2,527 PHOP	2.61	SF/PHOP	N/A	6,586	3.84	SF/PHOP	9,704	(3,118)	68%
Ticket Counter Length	2,527 PHOP	0.30	LF/PHOP	765	N/A	0.35	LF/PHOP	884	(119)	0%
Ticket Counter Queuing	2,527 PHOP	3.73	SF/PHOP	N/A	9,426	7.00	SF/PHOP	17,689	(8,263)	53%
Airline Ticket Office	2,527 PHOP	11.28	SF/PHOP	N/A	28,495	11.28	SF/PHOP	28,495	0	100%
Baggage Claim Area	2,336 PHTP	21.85	SF/PHTP	N/A	51,040	19.00	SF/PHTP	44,384	6,656	115%
Baggage Claim Frontage	2,336 PHTP	0.50	LF/PHTP	1,177	N/A	0.60	LF/PHTP	1,402	(225)	0%
Baggage Claim Devices	2,336 PHTP	130.78	LF/Device	9	N/A	130	LF/Device	156	(25)	0%
Baggage Service Office	2,336 PHTP	1.97	SF/PHTP	N/A	4,597	1.97	SF/PHTP	4,597	0	100%
Outbound Baggage	2,527 PHOP	19.79	SF/PHOP	N/A	50,010	19.79	SF/PHOP	50,010	0	100%
Inbound Baggage	2,336 PHTP	11.68	SF/PHTP	N/A	27,278	11.68	SF/PHTP	27,278	0	100%
Airline Operations	7,637,193 ANNEP	0.008	SF/ANNEP	N/A	61,035	0.01	SF/ANNEP	61,035	0	100%
Departures Lounges (Holdrooms)	39 Gates	2,636	SF/Gate	N/A	102,788	2,190	SF/Gate	89,700	13,088	115%
Clubrooms	7,637,193 ANNEP	0.0014	SF/ANNEP	N/A	10,957	0.0014	SF/ANNEP	10,957	0	100%
<b>Concessions</b>										
Concessions (Includes Storage)	7,637,193 ANNEP	0.0090	SF/ANNEP	N/A	68,914	0.0120	SF/ANNEP	91,646	(22,732)	75%
<b>Federal Inspection Services</b>										
FIS (CIS, Claim, CBP, USDA)	125 PHTP-I	56.00	SF/ANNEP	N/A	7,000	80.00	SF/ANNEP	10,000	(3,000)	70%
<b>Secure Public Area</b>										
Passenger Screening Checkpoint	2,527 PHOP	140	PHOP/Lane	18	N/A	140	PHOP/Lane	18	(0)	0%
Passenger Screening Area	18 Lanes	567	SF/Lane	N/A	10,203	1,300	SF/Lane	23,465	(13,262)	43%
Concourse Circulation	39 Gates	2,329	SF/Gate	N/A	90,825	3,000	SF/Gate	117,000	(26,175)	78%
<b>Non-Secure Public Area</b>										
Circulation - Ticketing	2,527 PHOP	6.54	SF/PHOP	N/A	16,526	10.50	SF/PHOP	26,534	(10,008)	62%
Circulation - Baggage Claim	2,336 PHTP	3.16	SF/PHTP	N/A	7,380	5.00	SF/PHTP	11,680	(4,300)	63%
Circulation - General	7,637,193 ANNEP	0.007	SF/ANNEP	N/A	52,940	0.015	SF/ANNEP	114,558	(61,618)	46%
USO				N/A	6,520			6,520	0	100%



## 7. Facility Requirements Analysis

**Table 7.2-2  
Existing Level of Service**

Description	Demand Level	Existing Factor	LF/#	SF	Planning Factor	Required 2004	Existing Excess/(Deficiency)				
							Units	%			
<b>Non-Public Area</b>											
TSA	2,527	PHOP	1.85	SF/PHOP	N/A	4,676	1.85	SF/PHOP	4,676	0	100%
SDCRAA	7,637,193	ANNPEP	0.0009	SF/ANNPEP	N/A	7,163	0.0009	SF/ANNPEP	7,163	0	100%
Mech./Elec./Maint./Storage			7%	% of T. Area	N/A	58,000	12%	% of T. Area	90,851	(32,851)	64%
<b>Total</b>						<b>682,359</b>			<b>847,941</b>	<b>(165,582)</b>	<b>80%</b>

N/A = Not Applicable

SF = Square Feet; LF = Linear Feet

PHOP = Peak Hour Originating Passengers (July 2004)

PHTP = Peak Hour Terminating Passengers (July 2004)

PHTP-I = Peak Hour Terminating International Passengers (July 2004)

PHP = Peak Hour Passengers (July 2004)

ANNPEP = Annual Enplaning Passengers (2003)

Source: HNTB analysis

## 7. Facility Requirements Analysis

Table 7.2-3

### 2015 High Constrained Forecast

Description	Demand Level	Planning Factor	LF/#	SF
<b>Airline Functions</b>				
Ticket Counter Area	2,931 PHOP	11.00 SF/LF T/C	N/A	11,284
Ticket Counter Length	2,931 PHOP	0.35 LF/PHOP	1,026	N/A
Ticket Counter Queuing	2,931 PHOP	7.00 SF/PHOP	N/A	20,517
Airline Ticket Office	2,931 PHOP	11.28 SF/PHOP	N/A	33,062
Baggage Claim Area	3,158 PHTP	19.00 SF/PHTP	N/A	60,002
Baggage Claim Frontage	3,158 PHTP	0.60 LF/PHTP	1,579	N/A
Baggage Claim Devices	3,158 PHTP	130 LF/Device	12	N/A
Baggage Service Office	3,158 PHTP	1.97 SF/PHTP	N/A	6,221
Outbound Baggage	2,931 PHOP	19.79 SF/PHOP	N/A	58,004
EDS In-Line Screening Area	2,931 PHOP	9.90 SF/PHOP	N/A	29,002
Inbound Baggage	3,158 PHTP	11.68 SF/PHTP	N/A	36,885
Airline Operations	11,403,004 ANNEP	0.008 SF/ANNEP	N/A	91,224
Departures Lounges (Holdrooms)	53 Gates		N/A	122,650
Wide-body	10 Gates	3,500 SF/gate	N/A	35,000
B757-200	5 Gates	2,250 SF/gate	N/A	11,250
Narrow-body	33 Gates	2,050 SF/gate	N/A	67,650
Regional	5 Gates	1,750 SF/gate	N/A	8,750
Turboprop	0 Gates	950 SF/gate	N/A	0
Clubrooms	11,403,004 ANNEP	0.0014 SF/ANNEP	N/A	15,964
<b>Subtotal Airline Functions</b>				<b>484,817</b>
<b>Concessions</b>				
Concessions (Includes Storage)	11,403,004 ANNEP	0.0120 SF/ANNEP	N/A	136,836
<b>Subtotal Concessions</b>				<b>136,836</b>
<b>Federal Inspection Services</b>				
FIS (CIS, Claim, CBP, USDA)	520 PHTP-I	80.00 SF/PHOPI	N/A	41,600
<b>Subtotal FIS</b>				<b>41,600</b>
<b>Secure Public Area</b>				
Passenger Screening Checkpoints	2,931 PHOP	160 PHOP/Lane	20	N/A
Passenger Screening Area	19 Lanes	1,300 SF/Lane	N/A	24,700
Concourse Circulation	53 Gates	3,000 SF/Gate	N/A	159,000
Restrooms	6,635 PHP	3.00 SF/PHP	N/A	19,905
Other	11,403,004 ANNEP	0.0010 SF/ANNEP	N/A	11,403
<b>Subtotal Secure Public Area</b>				<b>215,008</b>
<b>Non-Secure Public Area</b>				
Circulation - Ticketing	2,931 PHOP	10.50 SF/PHOP	N/A	30,776
Circulation - Baggage Claim	3,158 PHTP	5.00 SF/PHTP	N/A	15,790
Circulation - General	11,403,004 ANNEP	0.015 Of Total SF	N/A	171,045
Restrooms	6,635 PHP	2.00 SF/PHP	N/A	13,270
USO			N/A	6,520
Other	11,403,004 ANNEP	0.0010 SF/ANNEP	N/A	11,403
<b>Subtotal Non-Secure Public Area</b>				<b>248,804</b>

## 7. Facility Requirements Analysis

**Table 7.2-3**

**2015 High Constrained Forecast**

Description	Demand Level	Planning Factor	LF/#	SF
<b>Non-Public Area</b>				
TSA	2,931 PHOP	1.85 SF/PHOP	N/A	5,422
SDCRAA	11,403,004 ANNEP	0.0009 SF/ANNEP	N/A	10,263
Circulation		4.0% Of Total SF	N/A	45,156
Maintenance and Storage		2.0% Of Total SF	N/A	23,481
Mechanical/ Electrical		10.0% Of Total SF	N/A	119,755
Other		6.0% Of Total SF	N/A	79,038
<b>Subtotal Non-Public Area</b>				<b>283,116</b>
<b>Total Functional Area Required 2015</b>				<b>1,410,180</b>

SF = Square Feet; LF = Linear Feet  
 PHOP = Peak Hour Originating Passengers  
 PHTP = Peak Hour Terminating Passengers  
 PHTP-I = Peak Hour Terminating International Passengers  
 PHP = Peak Hour Passengers  
 ANNEP = Annual Enplaning Passengers  
 Totals may not add up precisely due to rounding

Source: HNTB analysis

### **Airline Functions**

Airline functions utilize the planning factors discussed above. Ticket counter frontage is programmed at 1,105 linear feet, and an increase in ticket counter areas, queuing, and ATO will support the additional counters required. Three additional claim devices are required with proportional increases in the baggage claim area, baggage service offices, and inbound baggage area. Improvements to the baggage inspection assume an in-line Explosives Detection System (EDS) programmed at 50 percent of the total outbound baggage area. The airline operations area is increased using the existing planning factor and the forecast annual passenger enplanements. Departure lounges are programmed by the forecast aircraft mix and the departure lounge area requirement for the specific aircraft. Airline clubrooms are increased proportionally to the forecast annual passenger enplanements.

The total programmed area requirement for airline functions for the 2015 high constrained forecast is 484,817 square feet.

### **Concessions**

Applying a planning factor of 0.012 square feet per annual enplaning passenger, the 2015 high constrained forecast requirement for all concession facilities is 136,836 square feet. This represents an almost doubling of the existing concession space that exists today within the airport.

### **Federal Inspection Services (FIS)**

The FIS requirement is based on a 2015 peak hour arrival of 520 international terminating passengers and utilizes a planning factor of 80 square feet per passenger based on data from comparable airports. The total programmed FIS area requirement for the 2015 high constrained forecast is 41,600 square feet. This requirement is much higher than what currently exists today for international arrivals in part because of an increase in overall space per passenger than what is currently provided. The increase assumes a return of International widebody activity to SDIA and the simultaneous arrival of widebody and narrowbody international flights. (This could be represented by a combination European, Asia/Pacific, and Mexico flights.)

## 7. Facility Requirements Analysis

### Secure Public Area

Increased demand will require a total of 20 SSCP lanes, and the area requirement has been increased to reflect lanes that meet TSA planning standards. Concourse circulation is increased to reflect an average of 3,000 square feet per gate. Restroom requirements are based on peak hour numbers of passengers.

The total programmed area requirement for the secure public area for the 2015 high constrained forecast is 215,008 square feet.

### Non-Secure Public Area

Circulations at ticketing and baggage claim as well as general circulation are increased to reflect new facilities meeting Terminal Two West standards and additional passenger demand. Restroom requirements are based on peak hour numbers of passengers. The USO is assumed to remain the same size throughout the forecast years.

The total programmed area requirement for the non-secure public area for the 2015 high constrained forecast is 248,804 square feet.

### Non-Public Area

For both the TSA and the Authority offices, the area requirement is based on the forecast passenger demand using the current planning factors. Circulation, maintenance and storage, mechanical and electrical and other requirements (structure, walls, etc.) are programmed as percentages of the terminal area.

The total programmed area requirement for the non-public areas for the 2015 high constrained forecast is 283,116 square feet.

### Total Functional Area Required 2015

The total terminal facility required for the 2015 high constrained forecast is 1,410,180 square feet. This is 622,755 square feet larger than the existing Terminal One and Terminal Two area.

## 7.2.5 Passenger Terminal Facility Requirements - 2030 High Constrained Forecast

The passenger terminal facility requirements projected for the 2030 high constrained forecast are shown in **Table 7.2-4**. The requirements are based on the planning factors discussed in Section 7.2.2.

**Table 7.2-4**

### **2030 High Constrained Forecast**

<u>Description</u>	<u>Demand Level</u>	<u>Planning Factor</u>	<u>LF/#</u>	<u>SF</u>
<b>Airline Functions</b>				
Ticket Counter Area	3,461 PHOP	3.84 SF/PHOP		13,290
Ticket Counter Length	3,461 PHOP	0.35 LF/PHOP	1,211	
Ticket Counter Queuing	3,461 PHOP	7.00 SF/PHOP		24,227
Airline Ticket Office	3,461 PHOP	11.28 SF/PHOP		39,040
Baggage Claim Area	4,007 PHTP	19.00 SF/PHTP		76,133
Baggage Claim Frontage	4,007 PHTP	0.60 LF/PHTP	2,004	
Baggage Claim Devices	4,007 PHTP	130.00 LF/Device	15	
Baggage Service Office	4,007 PHTP	1.97 SF/PHTP		7,894
Outbound Baggage	3,461 PHOP	19.79 SF/PHOP		68,493
EDS In-Line Screening Area	3,461 PHOP	9.90 SF/PHOP		34,247

## 7. Facility Requirements Analysis

Table 7.2-4

**2030 High Constrained Forecast**

Description	Demand Level	Planning Factor	LF/#	SF
Inbound Baggage	4,007 PHTP	11.68 SF/PHTP		46,802
Airline Operations	14,120,000 ANNEP	0.008 SF/ANNEP		112,960
Departures Lounges (Holdrooms)	60 Gates			141,950
Wide-body	13 Gates	3,500 SF/gate		45,500
B757-200	5 Gates	2,250 SF/gate		11,250
Narrow-body	39 Gates	2,050 SF/gate		79,950
Regional	3 Gates	1,750 SF/gate		5,250
Turboprop	0 Gates	950 SF/gate		0
Clubrooms	14,120,000 ANNEP	0.0014 SF/ANNEP		19,768
<b>Subtotal Airline Functions</b>				<b>584,804</b>
<b>Concessions</b>				
Concessions (Includes Storage)	14,120,000 ANNEP	0.0120 SF/ANNEP		169,440
<b>Subtotal Concessions</b>				<b>169,440</b>
<b>Federal Inspection Services</b>				
FIS (CIS, Claim, CBP, USDA)	643 PHTP-I	80.00 SF/ANNEP		51,440
<b>Subtotal FIS</b>				<b>51,440</b>
<b>Secure Public Area</b>				
Passenger Screening Checkpoints	3,461 PHOP	160 PHOP/Lanes	22	
Passenger Screening Area	22 Lanes	1,300 SF/Lane		28,600
Concourse Circulation	60 Gates	3,000 SF/Gate		180,000
Restrooms	7,216 PHP	3.00 SF/PHP		21,648
Other	14,120,000 ANNEP	0.0010 SF/ANNEP		14,120
<b>Subtotal Secure Public Area</b>				<b>244,368</b>
<b>Non-Secure Public Area</b>				
Circulation - Ticketing	3,461 PHOP	10.50 SF/PHOP		36,341
Circulation - Baggage Claim	4,007 PHTP	5.00 SF/PHTP		20,035
Circulation - General	14,120,000 ANNEP	0.015 Of Total SF		211,800
Restrooms	7,216 PHP	2.00 SF/PHP		14,432
USO				6,520
Other	14,120,000 ANNEP	0.0010 SF/ANNEP		14,120
<b>Subtotal Non-Secure Public Area</b>				<b>303,248</b>
<b>Non-Public Area</b>				
EDS/ TSA	3,461 PHOP	1.85 SF/PHOP		6,403
SDCRAA	14,120,000 ANNEP	0.0009 Of Total SF		12,708
Circulation		4.0% Of Total SF		53,949
Maintenance and Storage		2.0% Of Total SF		28,054
Mechanical/ Electrical		10.0% Of Total SF		143,073
Other		6.0% Of Total SF		94,428
<b>Subtotal Non-Public Area</b>				<b>338,615</b>
<b>Total Functional Area 2030</b>				<b>1,697,524</b>

SF = Square Feet; LF = Linear Feet  
 PHOP = Peak Hour Originating Passengers  
 PHTP = Peak Hour Terminating Passengers  
 PHTP-I = Peak Hour Terminating International Passengers  
 PHP = Peak Hour Passengers  
 ANNEP = Annual Enplaning Passengers  
 Totals may not add up precisely due to rounding

Source: HNTB analysis

## **7. Facility Requirements Analysis**

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### **Airline Functions**

Airline functions utilize the planning factors discussed above. Ticket counter frontage is programmed at 1,211 linear feet. An increase of ticket counter areas, queuing, and ATO will support the additional counters required. Six additional baggage claim devices are required with proportional increases in the baggage claim area, baggage service offices, and inbound baggage area. Improvements to the baggage inspection assume implementation of an in-line EDS programmed at 50 percent of the total outbound baggage area. The airline operations area will be increased as a result of the existing planning factors and the forecast annual passenger enplanements. Departure lounges are programmed by the forecast aircraft mix and the departure lounge areas are estimated area requirement for a specific aircraft. Demand for Airline clubrooms is expected to increase proportionally to the forecast annual passenger enplanements.

The total programmed area requirement for airline functions for the 2030 high constrained forecast is 584,804 square feet.

### **Concessions**

Applying a planning factor of 0.012 SF/ANNEP, the 2030 high constrained forecast requirement for all concession facilities is 169,440 square feet.

### **Federal Inspection Services (FIS)**

The FIS requirement is based on the 2030 peak hour arrival of 643 international terminating passengers and utilizes a planning factor of 80 square feet per passenger based on data from comparable airports. The total programmed FIS area requirement for the 2030 high constrained forecast is 51,440 square feet. This requirement is much higher than what currently exists today for international arrivals in part because of an increase in overall space per passenger than what is currently provided.

### **Secure Public Area**

Increased demand will require a total of 22 SSCP lanes, and the area requirement will be increased to reflect lanes meeting TSA planning standards. Concourse circulation is increased to reflect an average of 3,000 square feet per gate, and restroom requirements are based on peak hour number of passengers.

The total programmed area requirement for the secure public area for the 2030 high constrained forecast is 244,368 square feet.

### **Non-Secure Public Area**

Circulation area requirements at ticketing and baggage claim, as well as general circulation, will increase reflecting additional passenger demand and the LOS standards of Terminal Two West and. Other non-secure areas including restroom requirements are based on peak hour passengers. Another non-secure area, the USO, is assumed to remain the same size throughout the forecast years.

The total programmed area requirement for the non-secure public area for the 2030 high constrained forecast is 303,248 square feet.

### **Non-Public Area**

The non-public areas of the TSA and the Authority offices have area requirements based on the forecast passenger demand using the current planning factors. Circulation, maintenance and storage, mechanical and electrical and other requirements (structure, walls, etc.) are programmed as percentages of the terminal area.

The total programmed area requirement for the non-public areas for the 2030 high constrained forecast is 338,615 square feet.

**Total Functional Area Required 2030**

The total terminal facility required for the 2030 high constrained forecast is 1,697,524 square feet. This is 910,099 square feet larger than the existing terminal facilities.

**7.2.6 Area Comparison**

**Table 7.2-5** provides an area comparison between the existing terminal facilities and the 2015 and 2030 forecast program requirements.

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**Table 7.2-5**  
**Existing and Future Total Terminal Area Comparison**

<b>Description</b>	<b>% Increase</b>	<b>SF</b>
2004 Terminal 1 and 2 Area		787,425
Total Functional Area 2015		1,410,180
Area Increase 2004 to 2015	79%	622,755
Total Functional Area 2030		1,697,524
Area Increase 2004 to 2030	116%	910,099

Source: HNTB analysis, 2005.

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## ***7. Facility Requirements Analysis***

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