Outline

- Some facts on SFO
- Passenger and operations growth projections
- Domestic Terminal Redevelopment Plan
  - Vision
  - Planning Approach and Schedule
  - Terminal 2/Boarding Area D Renovation
  - Terminal 1 Long-Term Redevelopment
San Francisco International

- 2,383 acres on a 5,171 acre site
- 4 intersecting runways (ranging from 7,000 ft. to 11,870 ft.)
- International Terminal – 2.5 million sq. ft., 24 gates
- Domestic Terminals – 2.6 million sq. ft., 56 gates
- 81 operational gates
- 4 public parking garages
- Rental Car Center and AirTrain service
- 18.5 million enplanements in CY08 (4.8% increase from 2007; 8.3% decrease from 2000))
- 351,000 aircraft operations in CY08 (4.2% increase from 2007)
Terminal Complex

Terminal 1 built in the 1960s and renovated in the mid-80s

Boarding Area C built in 1984 – 9 gates (DL, NW, F9, HA)

Boarding Area D built in the 50s, renovated in 1981 and closed in 2000 – 10 gate international terminal

Completed in December 2000, the International Terminal includes 24 gates (B/A A and G), 2.5 million square feet of space, and connects the Airport to the BART system

Terminal 3 and B/A E and F built in the late 1970s – 31 gates (AA, AC, UA)

Boarding Area E and F built in the late 1970s – 31 gates (AA, AC, UA)

Terminal 2 built in 1951 and renovated in the 1980s

Boarding Area B built with the original terminal complex, renovated in the 1980s – 7 gates (CO, AS, US, FL, and WN)

Terminal 1 built in the 1960s and renovated in the mid-80s
ENPLANE PASSENGER FORECASTS
San Francisco International Airport

Historical
Low Growth Scenario (March 2007)
Medium Growth Scenario (March 2007)
2008 Official Statement
2007 FAA TAF

Five-year range of uncertainty:
1 to 3% decrease in FY08/09 (est.)
2 to 5% decrease in FY09/10 (est.)

Note: For Fiscal Years ended June 30, except as noted.
Sources: Historical—San Francisco International Airport records. Forecast—Jacobs Consultancy, March 2007 and U.S. Department of Transportation, Federal Aviation Administration, Terminal Area Forecasts, online database (Federal Fiscal Year ended September 30).
Departures Forecast and Estimated Runway Capacity

PASSENGER AIRLINE AIRCRAFT DEPARTURE FORECAST
San Francisco International Airport

Note: For Fiscal Years ended June 30, except as noted.
Sources: Historical--San Francisco International Airport records. Forecast--Jacobs Consultancy, March 2007 and U.S. Department of Transportation, Federal Aviation Administration, Terminal Area Forecasts, online database (Federal Fiscal Year ended September 30).
Domestic Terminal Redevelopment Plan

Develop a long-range plan for the redevelopment of Terminals 1 and 2, and Boarding Areas B, C, and D

- Maximize the available area by providing the most efficient:
  - Aircraft parking layout
  - Terminal/boarding area configuration
- Meet the Airport Vision
Vision and Concepts

VISION

- Customer service and program requirements
  - Meet or exceed all program requirements
  - Minimum lines/waiting times
  - Flow-through, self-directing design
  - Great space/comfort factor
  - Optimal space allocation
  - Intelligent use of technology
  - Just-in-time delivery of new facilities

- Constructability
  - Minimal impact to ongoing operations
  - Low construction and life-cycle costs

- Long-term planning requirements
  - Flexibility/adaptability to future requirements
  - Efficient and sustainable design
  - High facility utilization

ADDITIONAL CONCEPTS

- Just-in-time delivery of gates
- Provision of common use facilities
- Consideration of LEED certification
- Abundant concession opportunities on secure side
- Consideration of remote check-in, screening processes
- Provision of adequate terminal curb frontage
- Consideration of vertical circulations for passengers/service/deliveries
- Separation of passenger/employee screening
- Provision of secure connector between Terminals 1 and 2
Domestic Terminal Redevelopment Plan - Planning Approach

DEMAND FORECAST

AIRFIELD CAPACITY/DELAY ASSESSMENT

TERMINAL GATE UTILIZATION

PROGRAM REQUIREMENTS

PLANNING TEAM

PEER WORKING GROUP

Senior Staff/ Stakeholders

Planning Advisory Committee

PREFERRED SCHEME

ALTERNATIVES DEFINITION/EVALUATION
Alternatives Development Process

Planning Team: Technical Analysis and Alternatives Development

- Define planning parameters
- Further develop alternatives
- Refine alternatives

Stakeholders: Review, Input, and Concurrence

- Workshop 1: Develop alternatives
- Workshop 2: Review alternatives
- Workshops 3 and 4: Evaluate alternatives

Peer Working Group: Review and Oversight
Domestic Terminal Redevelopment Plan Phase I Schedule

2007

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sept

Oct

Air Traffic Forecasts

Aircraft Parking Layout Optimization

Airfield Delay/Capacity Assessment

Gate Utilization Analysis

Program Requirements

Long-Term Alternatives Development

Visioning Workshops

Preliminary Phasing

Terminal Alternatives Evaluation

Cost Estimating

Airfield Simulation

2008

Oct

Nov

Preferred Alternative

Peer Working Group Workshops

Senior Staff Meetings

Commissioner Briefings
Terminal 2/Boarding Area D Renovation Project

Gensler
The Experience Principles

**Comfort and Control**
- Self-directed
- Spaces to suit your needs
- Relaxing, inviting, and informal

**Sense of Purpose**
- Sustainable
- Intuitive wayfinding
- Tech Enabled

**Delight**
- Hospitality influence
- Element of learning and discovery
- Friendly tone

**Bridge to the City**
- Diversity with an “in-it-together” mentality
- Showcase local art, culture, and cuisine
- Emphasize experience over branding

Gensler
Terminal 2 and Boarding Area D Renovation

- Renovate Boarding Area D to provide for a renewed 40-year useful life, including:
  - Increase gate capacity from 10 widebody gates to 14 narrow/widebody gates
  - Replace exterior cladding, roofing and interior services
  - Seismically upgrade facility
  - Install jet bridges central preconditioned air/400 hz aircraft systems
  - Replace MEP systems and conveyances
  - Upgrade infrastructure
  - Install full in-line EDS BHS
  - Infill the center areas of boarding area and concourse
  - Bump out facility to accommodate concessions
  - Build out concession space
Near-Term Terminal 2 and Boarding Area D Renovation (cont’d)

- Refresh Terminal 2 facility to improve passenger flow, operational efficiency and aesthetics, including:
  - Convert SFO’s old International Terminal to domestic use
  - Reconfigure lobby space to provide for sufficient check-in capacity and queuing
  - Reconfigure checkpoint to provide for sufficient lanes
- Replace and relocate bag belts and carousels
- Renew interior surfaces
- Replace MEP systems and conveyances
- Relocate infrastructure to Boarding Area D
- Install AirTrain Mezzanine
- Replace exterior cladding where necessary
Terminal 2/Boarding Area D Renovation – Schematic Plans
Design Overview – Floor Plans

- Departure Lounge
- Retail Avenue
- Retail Marketplace
- Meet & Greet
- Bag Claim

Food and Beverage
Retail
Ticketing Lobby – Service and Hospitality
Ticketing Lobby – Efficient Passenger Movement
Security Checkpoint – Safe and Friendly
Passenger Simulation of the Departures Level
Recompose – Refocus, Reconnect, Relax
Boarding Area – Central Park Community
Boarding Area - Seating
Boarding Area – Children Playarea

Gensler
Passenger Simulation of Boarding Area D
The “stress grid” path analysis results show the passengers are channeled into specific corridors in the boarding area.
Baggage Claim
Passenger Simulation of the Arrivals Level
Terminal 2/Boarding Area D Renovation – Summary

- Project need:
  - Terminal 2 gates are fully subscribed
  - Boarding Area A will not be able to support added growth of domestic flights
  - Boarding Area B must be replaced
  - Terminal 2 will provide flexibility in future airline relocations

- Estimated total project cost: $383 million ($300 million construction)

- Method of procurement: fast-track design-build (bid packages before design is completed)

- Status (to be updated):
  - Design Development phase complete
  - Demolition about 80% complete
  - 100% Construction Documents by April 09
  - Awarded about $127 million in subtrade packages, remaining packages to be awarded by end of Summer 09 to pre-qualified subcontractors
  - Overall project substantial completion by January 2011
Terminal 1 Long-Term Redevelopment
Three Finalist Airside Schemes

- Finger Pier
- Modified Linear with B/A C
- Modified Linear without B/A C
Common Features to Three Airside Schemes

- **Realignment of McDonnell Road to gain 4 new RON parking positions**
- **Demolition of TWA Building and relocation of 3 RON parking positions, Aircraft Rescue and Fire Fighting, and Checkpoint**
- **Replacement of Boarding Area B**
- **New FAA Airport Traffic Control Tower**
FAA Airport Traffic Control Tower (ATCT)

New ATCT Location

Existing ATCT

Terminal 1

Terminal 2
View from Relocated ATCT – Finger Pier Scheme
View from Relocated ATCT – Modified Linear Scheme
## Fact Sheet

### Number of Gates by ADG

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirements</th>
<th>Finger Pier</th>
<th>Modified Linear with B/A C</th>
<th>Modified Linear without B/A C</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADG III (737-900 with winglets)</td>
<td>25 - 27</td>
<td>18</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>ADG IV (757-200 with winglets)</td>
<td>10 - 11</td>
<td>18</td>
<td>23</td>
<td>18</td>
</tr>
<tr>
<td>ADG IV (767-400ER)</td>
<td>3 - 5</td>
<td>5</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>ADG V (747-400; 787-900; 777-200)</td>
<td>2 - 1</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirements</th>
<th>Finger Pier</th>
<th>Modified Linear with B/A C</th>
<th>Modified Linear without B/A C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal Frontage (feet)</td>
<td>6,250 - 6,850</td>
<td>7,390</td>
<td>7,265</td>
<td>6,470</td>
</tr>
<tr>
<td>Walking Distance (feet)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>1,700</td>
<td>1,200</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>301</td>
<td>101</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>1,031</td>
<td>797</td>
<td>660</td>
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</tr>
<tr>
<td>Travel Time (min:sec)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>8:30</td>
<td>6:00</td>
<td>6:00</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>1:30</td>
<td>0:30</td>
<td>0:30</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>5:09</td>
<td>3:39</td>
<td>3:18</td>
<td></td>
</tr>
</tbody>
</table>

Note: Gate Requirements and Gates Provided includes Boarding Area D gates.

(a) Airplane Design Group (ADG)

(b) The existing maximum walking distance is approximately 1,200 feet from B/A F security checkpoint to Gate 90.

(c) The maximum walking distance for the Finger Pier scheme is more than 40% higher than the existing maximum walking distance.

(d) The maximum walking distance for the Modified Linear with B/A C scheme is approximately the same as the existing maximum walking distance.

(e) The maximum walking distance for the Modified Linear without B/A C scheme is approximately the same as the existing maximum walking distance.

Sources: Gate requirements based on "Draft Technical Memorandum, Gate Modeling, San Francisco International Airport", Jacobs Consultancy, July 2007;
## Airside Schemes Evaluation Matrix

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>Finger Pier</th>
<th>Modified Linear with B/A C</th>
<th>Modified Linear without B/A C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate Requirements</td>
<td></td>
<td></td>
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<tr>
<td>Terminal Frontage Requirements</td>
<td></td>
<td></td>
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<td>Passenger Level of Service</td>
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<td>Walking Distance and Travel Time</td>
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<tr>
<td>Passenger Wayfinding</td>
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<tr>
<td>Operations</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Facilities Utilization/Sharing, Airline Operational Efficiency (Staffing and Equipment)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aircraft Ground Delays</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apron Circulation, Ability to Accommodate High-Turn Operations, Tower Flexibility to Handle Aircraft Movements, Access to Taxiway/Runway System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility to Accommodate Existing and Future Mix of Airlines and Aircrafts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Gates with Pushbacks and Towing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Service Equipment Staging/Storage Area</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Swing Gates (Domestic or International) | | | *

### Implementation

| Incremental Expansion (Just-in-Time Delivery of Gates/Facilities) | | | |
| Complexity of Phasing | | | |
| Relative Construction Cost | | | *

### Other

| Security Considerations (e.g., Breaches and Quarantine) | | | ** |
| Vendor Deliveries/Garbage Disposal | | | ** |

---

* Revised based on input from Peer Working Group, October 16, 2008.
** Added based on input from Peer Working Group, October 16, 2008.
### Preferred Long-Term Terminal 1 Redevelopment Scheme

#### Number of Gates by ADG (a)

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<tr>
<td></td>
<td><strong>40 - 44</strong></td>
<td><strong>46</strong></td>
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#### Terminal Frontage (feet)

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New FAA ATCT and Terminal 1 Redevelopment

New ATCT within Terminal 1 Redevelopment

View from new ATCT towards the redeveloped Boarding Area B
Terminal 1 Redevelopment – Summary

- Project need:
  - Address existing operational deficiencies of airside, terminal, and curbside components
  - Improve passenger level of service
  - Provide international swing gates to accommodate international growth and sterile and secure connectors to International Terminal
  - Replace a facility with structural and life safety deficiencies with a maximum useful life of 5 to 8 years

- Status:
  - Detail Planning and Programming Project Definition Phase
    - RFP Summer 2009
    - Completion by 2011
  - Design and construction
    - Schedule and procurement method to be determined
Thank you!

Anna Fantoni

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San Francisco International Airport

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anna.fantoni@flysfo.com
Passenger Growth Scenarios

COMPARISON OF BASE AND LOW ENPLANED PASSENGER PROJECTIONS
San Francisco International Airport
(for fiscal years ended June 30)

Notes: The projections presented in this table incorporate assumptions related to recent announcements of airline service adjustments, and were prepared to assist with near-term financial planning. Inevitably, some of the assumptions used to develop the projections will not be realized and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between the projected and actual results, and these differences may be material.

Sources: For actual traffic: San Francisco Airport Commission.
For projected traffic: Jacobs Consultancy, February 2009.
Five-Year Look Ahead: Key Takeaways

- In FY2008, SFO passenger traffic and airline capacity growth exceeded that for other Bay Area airports and all U.S. airports, notwithstanding rising oil prices and a slowing economy.
- As the primary gateway to the Bay Area, SFO is likely to be less affected by the consolidation of airline operations and closing of airline stations.
- A large share of business travelers, a strong technology sector, and increasing share of low-cost carriers will help SFO weather weak global economy.
- High per capita incomes in the Bay Area (34% higher than that for California and 38% higher than that for the nation) lessen the impact of airfare increases.
- SFO international activity is likely to benefit from the rising value of foreign currencies against the dollar and a renewed interest in the U.S. as a destination.
- SFO is poised for continued growth to support Bay Area passenger demand at rates similar to or greater than the national average.
- The weak economy has caused passenger enplanements to decline from a 7.8% increase in FY07/08 to an expected decrease if 5.4% in FY08/09.
- Variation in annual passenger traffic is secondary to market and peak hour considerations in planning facility requirements.
Initial Family of Schemes

- Linear
- Modified Linear
- Modified Linear with Anchors
- Modified Master Plan and T1 Remodel
- Finger Piers
- Replace B/A B and D
- Satellite
- Integrated Domestic Terminal
DTRP Long-Term Alternatives Development

- Eight schemes were initially identified during PWG Workshop 1
- The eight schemes were further developed and then evaluated during PWG Workshop 2
- The PWG determined that the existing Terminal 2 Boarding Area D geometry and aircraft gate layout maximizes the site
  - SFO initiated pre-design activities to redevelop Terminal 2 in its current configuration
- Terminal 1 long-term redevelopment schemes were further developed and the preferred scheme was selected by the PWG and Senior Staff
Just-in-Time Delivery of Gates

San Francisco International Airport
Airport-wide Aircraft Gate Demand 2007-2026

No. of Gates

Year


Provided
Medium Growth Scenario
Terminal 1 Redevelopment

Reconfiguration of airfield to accommodate:
• New Taxilane AA parallel to Taxiway A
• Single ADG VI/Dual ADG IV taxilanes between Boarding Areas A and the new B

Realignment of McDonnell Road to gain 4 new RON parking positions

New FAA Airport Traffic Control Tower

Retention of existing Boarding Area C

Replacement of Terminal 1 and Boarding Area B with new double loaded concourse

Demolition of TWA Building and relocation of 3 RON parking positions, Aircraft Rescue and Fire Fighting, and Checkpoint