Definition of Massport

- Massport is an independent authority governed by a board of directors, appointed by the state’s governor.
- Massport owns and operates:
  - Boston-Logan International Airport
  - Hanscom Field, Bedford, MA
  - Worcester Airport
  - Conley Container Terminal
  - Black Falcon Cruiseport
  - Various real estate assets
Capital Program Structure

Facility

Aviation
- Logan Airport
- Hanscom Field
- Worcester Airport
Maritime
Agency Wide

Program

Aviation
- Logan Airside
- Logan Intermodal
- Logan Landside
- Logan Mitigation
- Hanscom Airside
- Hanscom Landside
- Worcester Airside
- Worcester Landside
Maritime
- Black Falcon
- Conley Terminal
- Dredging
- Fish Pier
- Hoosac Pier
- Maritime Other
- Moran Terminal
- Other Development
- WTC/S. Boston
Agency Wide/IT
- Administration
- Capital Programs
- Data Storage
- FARS
- Information Systems
- Network Operations
- System Operations
- Systems Security
- Telecommunications

Project Status

Funded | Not Funded | Contingent on Funding Source | Unfunded

Complete | Ongoing | Proposed | Private

massachusetts port authority
Rolling 5-Year Program
Program Evaluation

**Project Evaluation Criteria**
- Safety and Security
- Asset Maintenance
- Operational Efficiencies
- System Enhancement/Customer Service
- HOV/Ground Access Improvements
- Commitment to Surrounding Communities

**Financial Evaluation Criteria**
- Grants and Outside Funding
- PFC Eligibility
- Cost Recovery
- Rates and Charges Impact
- Credit Rating Impact
Proposed FY15 – FY19 Capital Program

<table>
<thead>
<tr>
<th>Element</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Projects</td>
<td>349</td>
</tr>
<tr>
<td>Total Program</td>
<td>$1,375M</td>
</tr>
<tr>
<td>Private Funds</td>
<td>$1,330M</td>
</tr>
<tr>
<td>Total and Private Funds</td>
<td>$2,705M</td>
</tr>
<tr>
<td>Contingent on Funding Source (CFS)</td>
<td>$239M</td>
</tr>
<tr>
<td>Unfunded</td>
<td>$611M</td>
</tr>
</tbody>
</table>
Capital Investments by Year

Capital Program
Private Investments

FY15
FY16
FY17
FY18
FY19
Economic Impact by Year

Estimated Job Creation (FTEs): Total 19,214

- **FY15**: 4,160 (Private: 2,800, Indirect: 1,360, Direct: 1,779)
- **FY16**: 5,345 (Private: 3,160, Indirect: 1,985, Direct: 1,200)
- **FY17**: 4,924 (Private: 2,550, Indirect: 1,684, Direct: 1,719)
- **FY18**: 3,006 (Private: 1,950, Indirect: 944, Direct: 1,112)
- **FY19**: 1,779 (Private: 1,029, Indirect: 511, Direct: 239)
## Capital Program by Facility

<table>
<thead>
<tr>
<th>Project</th>
<th>FY15-19</th>
<th>Current Program %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logan Airport Total</td>
<td>$967,550</td>
<td>70.38%</td>
</tr>
<tr>
<td>Hanscom Project Total</td>
<td>$29,963</td>
<td>2.18%</td>
</tr>
<tr>
<td>Worcester Project Total</td>
<td>$53,586</td>
<td>3.90%</td>
</tr>
<tr>
<td>Maritime Project Total</td>
<td>$253,694</td>
<td>18.45%</td>
</tr>
<tr>
<td>Agency Wide Project Total</td>
<td>$69,969</td>
<td>5.09%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>$1,374,762</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

![Pie chart showing the distribution of the capital program by facility.](chart.png)
Consultant Selection Process

In-house Designer Selection Panel

- Horizontal projects
- Feasibility studies
- Non-building projects

Panel Composition

- Director of Capital Programs and Environmental Affairs, Chair
- Deputy Director of Capital Programs and Environmental Affairs
- Project Manager
- Facility representative
- IT Department representative
- A&F representative
- A/E Services representative
Consultant Selection Process (cont.)

Full Designer Selection Panel
  – Vertical projects

Panel Composition
  – In-house panel members
  – Six (6) outside members representing:
    • The architectural and engineering communities
    • The construction management industry
    • Academia
Delivery Methods
Massachusetts General Laws

- Traditional Design-Bid-Build
- Construction Manager at Risk for Vertical Construction with value > $5 Million
- Chapter 149A allows Design-Build on Horizontal Projects with value > $5 Million
FY15 – FY19 Capital Program Challenges

Capital Project Cost Increases

• Construction costs trended approximately 25 to 30% higher than what was estimated in the FY14-FY18 Capital Program:
  – These cost increases can be attributed to the overall strength of the construction industry nationwide and specifically in this State
  – Construction unemployment dropped from 17.2% to 7.5% nationwide and to below 5% in Massachusetts within the last two years. This has resulted in a higher bidding environment.
  – The ENR Construction Cost Index has increased by approximately 5% annually nationwide and approximately 7% in Massachusetts within the last two years.
FY15 – FY19 Capital Program Challenges

Market Conditions

• New Projects Job Starts
  – Growth in Construction Starts in the Boston area is estimated at 14% for 2015 and 11% for 2016 as compared to 2014
  – Growth in Construction Starts Nationally is estimated at 6.7% for 2015

• Escalation
  – Escalation is trending at an average between 4.75% and 5.25%

• American Institute of Architects (AIA) Billings
  – AIA is reporting increased billings by approximately 5% during the last 6 month of 2014
FY15 – FY19 Capital Program Challenges

New Job Starts- Greater Boston (Turner Study)

- C: Likely to go
- B: Highly likely to go
- A: Going to go (hasn’t started yet)
- A*: Started

**Volume ($M)**

- 2007: $3,500
- 2008: $2,000
- 2009: $1,500
- 2010: $2,500
- 2011: $3,000
- 2012: $3,500
- 2013: $4,000
- 2014: $A
- 2015: $B
- 2016: $C

*Includes two regional casinos*
The Effects of Growth

• Contractors gain more ability to pass along costs and increase margins as spending continues to increase. Selling prices for 2013 and 2014 show contractors’ as built price both years is above labor and material cost inflation. **Margins are increasing.**

• Since the low point in January 2011, spending has increased 25%. Construction labor effort has increased by 18%. However, spending corrected for inflation shows construction volume has increased by only 10%. **Productivity is declining.**

• Growth in nonresidential buildings and residential construction in 2014 and 2015 will lead to more significant labor demand. This may lead to labor shortages and productivity losses.

• Margins regained a positive footing in 2012 and extended those gains in 2013. Margins increased in 2014 and margins are expected to grow even stronger in 2015.

• When activity picks up in all sectors, escalation will begin to advance rapidly.
Airline Relocation Options

BOS Logan International Airport

Massachusetts Port Authority
What Triggers all This?

The Terminal E Story...

- **New International Services...**
  - 17 new destinations in the past 7 years
  - 7 new services between 2014 and 2015

- **Size of Aircraft is Getting Larger...**
  - British Airways is moving to the A380
  - Emirates is moving to the A380
  - Lufthansa is moving to the B747-800

- **Increase in the International Fleet Size over the past 7 years...**
  - More B747s, B777s and B787s

- **Special Security Requirements for Some of the Airlines**
The Terminal E Story... continued

Key Challenges...

- **Inadequate Holdrooms**
  - Summer of 2014 | Terminal was 1,100 Seats Short
  - Summer of 2015 | Terminal will be 1,300 Seats Short
  - Summer of 2016 – 2017 | Terminal will *not* be Short Seats! (2,200 provided)

- **Inadequate Gate Facilities to Handle Large Aircraft**
  - A380s and B747-800s need Two or Three Loading Bridges

- **Inadequate Concessions for International Customers**

- **Inadequate Club to Serve Higher End Carriers & Higher % of Premium Passengers**
  - A380s has about 25% Premium Passengers

- **Outdated Terminal Technology and Systems**

- **Baggage Handling Systems are Over Capacity**

- **Shortage of International Ticket Counters and Ticketing Space**

- **CBP Needs Improvements to Accommodate New Technology and Processing**
Terminal E Program Requirements

- Renovate and Expand 3 Gates to Accommodate Large Aircraft
- Right Size the Holdrooms for Current and Future Demand
- Expand the Security Checkpoint to Meet Peak Demand
- Expand the Club Offerings to Meet the Air Carrier Product Requirements
- Renovate and Enhance the Concessions Offerings | Generate More Revenue
- Modify Terminal Ops to Free Up Additional Ticket Counters, BHS Systems and Gates
- Install State of the Art Technology and Amenities for Improved Customer Service
- Accommodate New CBP Processing and Equipment
- Deploy Terminal Renovations and Enhancements

SMART | INNOVATIVE | MODERN
Terminal E Program

- Renovate Gates for Larger Aircraft
- Improve Ticketing
- Renovate Gates for New Carriers
- Enhance Concessions and Holdrooms
- Three New Clubs Above
- Improve the Checkpoint
- Improve Ticketing
Enabling Steps Required for Implementation

1. SHORT TERM
Free Up Gates and Ticketing During Construction

ACTION TAKEN:
- Moved Emirates Departures to Terminal C

2. SHORT and LONG-TERM
Free Up Gates, Ticketing and Baggage Systems During Construction and Long Term

ACTION REQUIRED:
- Move SWA (domestic carrier) out of E to A
- Move Aer Lingus (pre-cleared) out of E to C
Move 1
Relocate Southwest Airlines

Move Southwest to Terminal A Satellite for 5 Gate Operation
Move 2
Move Delta, Alaska and Sun Country

Move Delta from Satellite to Main Terminal

Build 3 Gates to Accommodate Delta

Move Alaska and Sun Country to Terminal C
Move 3
Move Alaska and Sun Country then Emirates and Aer Lingus

Move Alaska and Sun Country to Terminal C | Gates 40-41-42

Move Aer Lingus, Emirates to Terminal C and jetBlue within Terminal C
Airline Relocation logic and descriptions

JetBlue moves 1/15/15
within Terminal C to Pier B
frees up space to allow Alaska and Sun Country to move into Terminal C

Alaska Airlines and Sun Country move 3/1/15
from Terminal A to Terminal C
move to space formerly occupied by Jet Blue

Southwest moves 4/1/15
from Terminal E to Terminal A annex
will take over space vacated by Alaska, Sun Country, and Delta; space vacated is available for El Al construction

Delta moves 3/1/15
from Terminal A annex to Terminal A main building
no restrictions on movement; destination gates are available

El Al operates 6/28/15
Terminal E
takes over space vacated by Southwest
What Do We Look Like Next Summer 2015?

- El Al is Operating
- Checkpoint Construction Underway
- Early Action Elements are Done – One-Stop, New Claim and Zones 5 & 6 | CBP is Enhanced
- Sterile Corridor is Done
- Bus Ops at 6 Continue
- Old E2 is Closed
- East End is Under Construction
- SWA Checkpoint is Still Open
- EI Al is Operating at E
- Making Ready for West End Improvements
Building on the Terminal B Success and Vision...

The Terminal E Vision
...A Sneak Preview

SMART | INNOVATIVE | MODERN
Accommodating Future Growth:
Accommodating Future Growth:
Final Note
Steps for Success

1. Train, Implement and Truly Embrace the Lean Methodology as an Essential Way to do Business
2. Train, Implement and Truly Embrace BIM Technology Throughout ALL Projects
3. Train and Encourage PMs to Become CCMs

Massport Now Has 11 Certified Construction Managers