## Program Structure

### Facilities

<table>
<thead>
<tr>
<th>Logan Airport</th>
<th>Maritime</th>
<th>Worcester Airport</th>
<th>Hanscom Field</th>
<th>Agency Wide</th>
</tr>
</thead>
</table>

### Programs

|---------------|---------------|------------------|-----------------|---------------|----------------|----------|----------|------------|----------------|---------------|-----------------------|------|------------------|------------------|----------------|----------------|---------------|-----------------|-------------|-------|------------------|-----------------|-----------------|-----------------|-----------------|----------------|
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

• Complement and Support Strategic Plan
## Proposed FY18 – FY22 Capital Program

<table>
<thead>
<tr>
<th></th>
<th>As of FY17</th>
<th>FY18</th>
<th>FY19</th>
<th>FY20</th>
<th>FY21</th>
<th>FY22</th>
<th>FY18-22</th>
<th>FY23+</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grand Total</strong></td>
<td>$798,925</td>
<td>$503,651</td>
<td>$479,621</td>
<td>$534,040</td>
<td>$625,563</td>
<td>$286,813</td>
<td>$2,429,688</td>
<td>$248,249</td>
<td>$3,476,862</td>
</tr>
</tbody>
</table>

- Contingent on Funding Source (CFS): $343,750M
- Unfunded Projects: $862,574M
- Total: $1,206,324M

FY17-FY21 Total: $2,047,483  
An Increase of 19%
## Capital Program by Facility

<table>
<thead>
<tr>
<th>Project</th>
<th>FY18-22</th>
<th>Current Program %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logan Airport Total</td>
<td>$1,683,531</td>
<td>69.29%</td>
</tr>
<tr>
<td>Hanscom/Worcester Airports Total</td>
<td>$105,740</td>
<td>4.35%</td>
</tr>
<tr>
<td>Maritime Total</td>
<td>$408,672</td>
<td>16.82%</td>
</tr>
<tr>
<td>Real Estate Total</td>
<td>$68,187</td>
<td>2.80%</td>
</tr>
<tr>
<td>Dredging (State Portion)</td>
<td>$75,000</td>
<td>3.09%</td>
</tr>
<tr>
<td>Agency-wide Total</td>
<td>$88,558</td>
<td>3.65%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>$2,429,688</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

- **Logan Airport** 69%
- **Hanscom/Worcester Airports** 4%
- **Maritime** 17%
- **Real Estate** 3%
- **Dredging (State)** 3%
- **Agency Wide** 4%
Capital Program Composition

Airport Assets

- Current Replacement Value (CRV)

Renewal (State of Good Repairs) Projects (2.5% of CRV)

- Prevents accumulation of deferred maintenance backlog and maintains a Facility Condition Index (FCI) of 0.05 (Source: IFMA; Tradeline; APPA; Life Cycle Calculations)
- Typically Constitutes 40 to 50% of size of Capital Program (Source: IFMA; APPA; Ivy League Plus)

Improvements / New Construction

- Typically Constitutes 50 to 60% of Capital Program
# Capital Metrics

## Capital Program Allocation

<table>
<thead>
<tr>
<th>Element</th>
<th>Cost</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Replacement Value (CRV)</td>
<td>$5.75B</td>
<td>• 2017 Values</td>
</tr>
</tbody>
</table>
| Target Annual Renewal (State of Good Repairs) Expenditures    | $144M/yr*    | • 2.5% of CRV  
• 40% of Total Capital Program                               |
| Target Annual Improvements / New                              | $216M        | • 60% of Total Capital Program                                              |
| Target Annual Capital Expenditures                            | $360M        |                                                                             |
| Average Annual Actual Expenditures (2015-2017)                | $339M        | • Avg. of $283M over the last 10 years                                       |
| Average FY18-FY22 Capital Program                             | $486M        | • FY18: $504M  
• FY19: $480M                                                  |

* FY18-FY22 Capital Program Includes an Average of $140M/Per Year in Renewal Expenditures
Capital Investments by Year

<table>
<thead>
<tr>
<th></th>
<th>FY18</th>
<th>FY19</th>
<th>FY20</th>
<th>FY21</th>
<th>FY22</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$200M</td>
<td>$400M</td>
<td>$600M</td>
<td>$800M</td>
<td>$1B</td>
</tr>
<tr>
<td></td>
<td>$1B</td>
<td>$1.2B</td>
<td></td>
<td>$1.2B</td>
<td>$0.6B</td>
</tr>
</tbody>
</table>

Capital Program | Private Investments

FY18: $200,000,000
FY19: $400,000,000
FY20: $600,000,000
FY21:  $800,000,000
FY22:  $1,000,000,000
Economic Impact by Year
Estimated Job Creation (FTEs): Total 47,083

FY18 FY19 FY20 FY21 FY22

Private Indirect/Induced Direct

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Aviation Strategic Plan FY18-22

Short-Term Objectives:

- Support domestic airline operations, growth, and need for additional gates
- Provide additional gates & facilities for international market growth
- Reconfigure landside roadways to alleviate congestion
- Reconfigure terminal curbs to support traffic growth
- Provide adequate parking to allow for better operations & customer service
- Maintain & increase HOV utilization
- Reduce GHG emissions and improve overall sustainability and resiliency
- Support growth of airline service at Worcester
- Support growth of corporate aviation at Hanscom

Mid to Long-Term Objectives:

- Prepare terminal facilities & landside operation for 45M+ passengers per year

massachusetts port authority
Initiatives for Strategic Planning - Logan

<table>
<thead>
<tr>
<th>Project</th>
<th>Funded Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal E Modernization – Phase 1</td>
<td>$400M</td>
</tr>
<tr>
<td>Terminal C Optimization &amp; B to C Connector</td>
<td>$175M</td>
</tr>
<tr>
<td>Terminal B to C Roadway Improvements</td>
<td>$150M</td>
</tr>
<tr>
<td>2,000 Space Garage (partial funding)</td>
<td>$100M</td>
</tr>
<tr>
<td>Terminal C Canopy &amp; Upper Deck</td>
<td>$50M</td>
</tr>
<tr>
<td>Ground Transportation Initiatives</td>
<td>$30M</td>
</tr>
<tr>
<td>People Mover Programming &amp; Concept Design</td>
<td>$15M</td>
</tr>
<tr>
<td>Mitigation – Piers Park Phase II</td>
<td>$15M</td>
</tr>
<tr>
<td>Mitigation – GSE Electrification for all Terminals (partial funding)</td>
<td>$13.5M</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$948.5M</strong></td>
</tr>
</tbody>
</table>
Logan Strategic Plan Projects
Total: $948.5M

Pier Park Phase II
Schedule: FY18-FY22
Project Cost: $15,000,000

Terminal C Optimization & B to C Connector
Schedule: FY18 – FY21
Project Cost: $175,000,000

Terminal C Canopy & Upper Deck
Schedule: FY18 – FY22
Project Cost: $50,000,000

2000 Parking Spaces, Terminal E
Schedule: FY18 – FY22
Project Cost: $100,000,000

Terminal B to C Roadway Improvements
Schedule: FY17 – FY22
Project Cost: $150,000,000

Terminal E Modernization – Phase 1
Schedule: FY17 – FY22
Project Cost: $400,000,000

People Mover Programming & Concept Design
Schedule: FY18 – FY21
Project Cost: $15,000,000

GSE Electrification for all Terminals
Schedule: FY18 – FY22
Project Cost: $13,500,000

Terminal E Modernization – Phase 1
Schedule: FY18 – FY22
Project Cost: $400,000,000

Terminal C Canopy & Upper Deck
Schedule: FY18 – FY22
Project Cost: $50,000,000

Terminal B to C Roadway Improvements
Schedule: FY17 – FY22
Project Cost: $150,000,000

Terminal E Modernization – Phase 1
Schedule: FY17 – FY22
Project Cost: $400,000,000

People Mover Programming & Concept Design
Schedule: FY18 – FY21
Project Cost: $15,000,000

GSE Electrification for all Terminals
Schedule: FY18 – FY22
Project Cost: $13,500,000
Maritime Strategic Plan FY18-22

- Provide adequate harbor depth to serve next-generation container ships
- Modernize & upgrade existing container terminal facilities to better serve current needs
- Develop facilities & equipment to serve next-generation container ships
- Support the growth of the seafood processing business
- Provide efficient operation for the growing cruise terminal business
## Initiatives for Strategic Planning - Maritime

<table>
<thead>
<tr>
<th>Project</th>
<th>Funded Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Berth 10 &amp; Cranes at Coastal</td>
<td>$215M</td>
</tr>
<tr>
<td>Harbor Dredging</td>
<td>$107M</td>
</tr>
<tr>
<td>Fast Lane Projects</td>
<td>$103M</td>
</tr>
<tr>
<td>Cruise Terminal (New Automatic Gangway &amp; Structural Rehab, Others)</td>
<td>$15M</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$440M</strong></td>
</tr>
</tbody>
</table>
Maritime Strategic Plan Projects

Total Program: $440M
FY18-FY22 – Program Composition

Logan Airport
$1,683,531

- Airside - New/Improvement: 9%
- Airside - State of Good Repairs: 7%
- Landside - New/Improvement: 58%
- Landside - State of Good Repairs: 26%

Hanscom Field
$55,582

- Airside - State of Good Repairs: 71%
- Landside - New/Improvement: 23%
- Landside - State of Good Repairs: 4%
FY18-FY22 – Program Composition

Worcester
$50,180

- Landside - New/Improvement: 2%
- Landside - State of Good Repairs: 6%

Airside - State of Good Repairs: 49%
- Airside - New/Improvement: 43%

Maritime
$551,828

- State of Good Repair: 14%
- New/Improvement: 86%
Salt Storage Enclosure
Schedule: FY18 – FY19
Project Cost: $1,250,000

ARFF/CBP Facility
Schedule: FY17 – FY20
Project Cost: $12,000,000

Runway 11/29 Rehabilitation
Schedule: FY17 – FY18
Project Cost: $12,250,000

Replace Old T-Hangars Rows A, B, & C
Schedule: FY18 – FY19
Project Cost: $3,800,000

Rehabilitation of Taxiway R
Schedule: FY19 – FY21
Project Cost: $3,700,000

Rehab and Light November Taxiway
Schedule: FY21 – FY22
Project Cost: $1,500,000

East Ramp Joint Repair
Schedule: FY18 – FY20
Project Cost: $2,500,000

Civil Air Terminal Drainage Improvements
Schedule: FY18 – FY19
Project Cost: $1,000,000

ARFF/CBP Facility
Schedule: FY17 – FY20
Project Cost: $12,000,000

Salt Storage Enclosure
Schedule: FY18 – FY19
Project Cost: $1,250,000

Total Program: $55.6M

Rehab and Light November Taxiway
Schedule: FY21 – FY22
Project Cost: $1,500,000

Runway 11/29 Rehabilitation
Schedule: FY17 – FY18
Project Cost: $12,250,000

East Ramp Joint Repair
Schedule: FY18 – FY20
Project Cost: $2,500,000

Civil Air Terminal Drainage Improvements
Schedule: FY18 – FY19
Project Cost: $1,000,000

ARFF/CBP Facility
Schedule: FY17 – FY20
Project Cost: $12,000,000

Salt Storage Enclosure
Schedule: FY18 – FY19
Project Cost: $1,250,000

Total Program: $55.6M
Worcester Capital Program
Total Program: $50.1M

- Runway 11 and 29 EMAS Replacement
  - Schedule: FY20-FY22
  - Project Cost: $5,000,000

- CAT III ILS and Taxiway Improvements
  - Schedule: FY13-FY18
  - Project Cost: $32,000,000

- Runway 11 Rehab
  - Schedule: FY21-FY22
  - Project Cost: $4,000,000

- R/W 15-33 Rehabilitation
  - Schedule: FY19-FY20
  - Project Cost: $4,500,000

- Rehabilitation East Taxi Lane and Transient Ramp
  - Schedule: FY18-FY20
  - Project Cost: $2,400,000

- Ground Power/Preconditioned Air
  - Schedule: FY18-FY19
  - Project Cost: $1,100,000

- Worcester HVAC Distribution
  - Schedule: FY17-FY19
  - Project Cost: $1,500,000

- Worcester HVAC Distribution
  - Schedule: FY17-FY19
  - Project Cost: $1,100,000

- Reconstruct TW B between RW 29 and TW F
  - Schedule: FY17-FY18
  - Project Cost: $3,800,000

- Runway 11 and 29 EMAS Replacement
  - Schedule: FY17-FY22
  - Project Cost: $5,000,000

- CAT III ILS and Taxiway Improvements
  - Schedule: FY13-FY18
  - Project Cost: $32,000,000

- Worcester HVAC Distribution
  - Schedule: FY17-FY19
  - Project Cost: $1,500,000

- Runway 11 and 29 EMAS Replacement
  - Schedule: FY17-FY22
  - Project Cost: $5,000,000

- Runway 11 Rehab
  - Schedule: FY21-FY22
  - Project Cost: $4,000,000

- R/W 15-33 Rehabilitation
  - Schedule: FY19-FY20
  - Project Cost: $4,500,000

- Rehabilitation East Taxi Lane and Transient Ramp
  - Schedule: FY18-FY20
  - Project Cost: $2,400,000

- Ground Power/Preconditioned Air
  - Schedule: FY18-FY19
  - Project Cost: $1,100,000
# Technology Initiatives

<table>
<thead>
<tr>
<th>STRATEGIC BUSINESS INITIATIVES</th>
<th>SPECIFIC EXAMPLES</th>
</tr>
</thead>
</table>
| Improving the Passenger Experience | • Social Communication (new responsive, mobile websites and integration with social media)  
• Evolution of Wayfinding in Terminals (FIDS to DPIP to Interactive Info Bars to Beacon (future))  
• Implementing and supporting advances in Common Use Terminal Equipment and Automated Passenger Kiosks  
• Improved Wi-Fi (speed and bandwidth) in Terminals  
• Improved Cell Phone coverage in Terminals  
• Better Parking system with Valet Options (PARCS) |
| Leveraging the Authority’s Intelligence and Operational Expertise | • Migration to PMWeb for managing projects and contracts  
• Maritime ITOS upgrades  
• Utilizing Maximo for Asset Management |
| Improving Security | • Advancing Disaster Recovery (DR) and Business Continuity (BC)  
• Airfield Mesh Network Improve Communications & Airfield Safety  
• Improved system for badging all employees, tenants, business partners  
• Enhancement and upgrades to Cyber Security |
| Supporting Transportation Industry Innovation | • Introduction of TNCs and managing software  
• Digital Signage |
| Technical Infrastructure | • Underpinning of all construction projects  
• Air Blown Fiber infrastructure to support growth and resiliency |
# Boston Area Construction Market Challenges

## Boston-Major Private Projects Pipeline

(Projects for which budget is known)

<table>
<thead>
<tr>
<th>Project</th>
<th>Project Cost US$, million</th>
<th>Start Date</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wynn Boston Harbor</td>
<td>$2,400</td>
<td>4-Aug-16</td>
<td>24-Jun-19</td>
</tr>
<tr>
<td>Bulfinch Crossing</td>
<td>$2,000</td>
<td>1-Sep-16</td>
<td>1-Sep-20</td>
</tr>
<tr>
<td>MIT Kendall Square</td>
<td>$1,200</td>
<td>1-Feb-17</td>
<td>1-Feb-21</td>
</tr>
<tr>
<td>115 Winthrop Square</td>
<td>$1,020</td>
<td>1-Jun-18</td>
<td>1-Jun-21</td>
</tr>
<tr>
<td>Boston Children’s Clinical Bldg.</td>
<td>$1,000</td>
<td>1-Oct-17</td>
<td>30-Sep-21</td>
</tr>
<tr>
<td>Harvard Allston Expansion</td>
<td>$1,000</td>
<td>1-Feb-17</td>
<td>1-Feb-20</td>
</tr>
<tr>
<td>Hub on Causeway</td>
<td>$950</td>
<td>1-Nov-15</td>
<td>1-Nov-20</td>
</tr>
<tr>
<td>Echelon Seaport</td>
<td>$900</td>
<td>1-Mar-17</td>
<td>1-Jan-20</td>
</tr>
<tr>
<td>One Dalton</td>
<td>$750</td>
<td>14-Jan-15</td>
<td>31-Dec-18</td>
</tr>
<tr>
<td>Exchange South End</td>
<td>$600</td>
<td>30-Sep-18</td>
<td>30-Sep-20</td>
</tr>
<tr>
<td>Fenway Center</td>
<td>$580</td>
<td>30-Sep-17</td>
<td>30-Sep-19</td>
</tr>
<tr>
<td>Omni Seaport Hotel</td>
<td>$550</td>
<td>30-Sep-18</td>
<td>31-Mar-21</td>
</tr>
<tr>
<td>Pier 4</td>
<td>$500</td>
<td>1-Feb-16</td>
<td>1-Sep-18</td>
</tr>
<tr>
<td>New John Hancock Tower</td>
<td>$350</td>
<td>1-Sep-16</td>
<td>1-Mar-19</td>
</tr>
<tr>
<td>121 Seaport</td>
<td>$300</td>
<td>9-Jul-15</td>
<td>31-Mar-18</td>
</tr>
<tr>
<td>Garden Garage</td>
<td>$300</td>
<td>1-Jun-16</td>
<td>1-Jun-19</td>
</tr>
<tr>
<td>399 Congress</td>
<td>$200</td>
<td>1-Jul-17</td>
<td>1-Jul-20</td>
</tr>
<tr>
<td>Marine Wharf Hotel</td>
<td>$156,</td>
<td>1-Mar-18</td>
<td>1-Mar-20</td>
</tr>
<tr>
<td>Parcel Q1</td>
<td>$120</td>
<td>1-Aug-17</td>
<td>1-Aug-19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$14,876</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: BPDA, BLDUP
Boston Area Construction Market Challenges

TRADE RESOURCE OUTLOOK/DEMAND

<table>
<thead>
<tr>
<th>Trade Resource</th>
<th>Peak Demand (20 major projects)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Site Concrete</td>
<td>Dec-2017</td>
</tr>
<tr>
<td>Peak Steel</td>
<td>Apr-2018</td>
</tr>
<tr>
<td>Peak MEPS/Enclosure</td>
<td>Jan-2019</td>
</tr>
<tr>
<td>Peak FITOUT</td>
<td>Oct-2019</td>
</tr>
</tbody>
</table>

Source: Dharam Consulting

Source: BPDA, BLDUP, Dharam Consulting
Boston Area Construction Market Challenges

LOCAL MARKET RESOURCE SUPPLY AND DEMAND

- Materials
- Plant + Equipment
- Labor Main Contractors
- Labor Sub Contractors Trades
- Labor Consultants

Oversupply

Balanced demand/supply

Undersupply

Source: Dharam Industry Survey
Professional Services

- Design Services:
  - Building
  - Non-Building
- Term Consultants
- Environmental Services

Construction Services

- MGL c.149: Building Construction Contracts (ECC < $5 MIL)
- MGL c.149A: CMR (Construction Management at Risk) (ECC > $5 MIL)
- MGL c.30: Public Works (Non-Building)
- MGL c.149A s.14-21: Design-Build Public Works (ECC > $5 MIL)

Term Construction Contracts
Professional Services

- Design Services:
  - Building (MGL c.7C s.44)
  - Non-Building
- Term Consultants
- Environmental Services

The process is similar, but the Selection Panel changes by project type

RFQ - Advertised
- MPA website
- CommBUYS
- Central Register
- Newspapers

Consultants Briefing
- Supplemental Information
- Presentation
- Opportunity to be part of a team

Designer Selection Panel
- Full Panel (MGL c.7C s.44)
- In-House Panel
- Environmental In-House Panel

Selection
- Qualification based by criteria in RFQ
- Interview, discretionary
Consultants Selection Criteria

- Experience of the team and communication skills of the PM
- Minimal disruption to airport operations
- Familiarity with Ch. 149, Ch. 149 A, Ch. 30
- Experience in using and managing BIM
- Experience in Lean Design & Construction
- Cost and Schedule management
- M/WBE proposed percentage
- Current and Past work with the Authority
- Experience with Sustainability and Resiliency
- Design Approach ... “Design Excellence”
Opportunities - 2018

– People Mover Programming & Concept Design
– Oversight / Integrator for Interrelated Projects (Terminals B and C Projects)
– Berths 14-17 Backland Area Reconstruction
– Rehabilitate North Cargo Apron
– Second Airfield Lighting Vault
– Terminal C – Piers B &C Hammerhead Window Replacement
Ongoing Initiatives

- PMWeb Implementation
- CPM – P6 Schedule Toolkits / Updates
- CPM Schedules and Pull Plan Integrations
- Data Warehouse / Dashboard
- Cost Estimating Guidelines
- Earned Value Guidelines
- Lean Implementation Guidelines
- Revised Manuals / Process Enhancements
- Online Bidding
What is PMWeb?

• **PMWeb** is a web and cloud based Project Management Information System
• **PMWeb** stores electronic forms, documents, reports, contracts, invoices, requisitions, budget information, drawings, submittals, and so much more, all in one central location!
• **PMWeb** indicates when scope, schedule and financial decisions need to be made to help us mitigate potential risks and better manage our Capital Program
What will PMWeb do?

- **PMWeb** will allow users to access project and contractual information 24/7 using a computer, laptop, tablet, phone or any other device connected to the internet
- **PMWeb** will create interactive dashboards for projects and programs
- **PMWeb** will integrate with MassPort Financial Systems for Funding and Payments
Access to the PMWeb System is granted by Capital Programs based on pre-determined detailed security rights.
### Schedule Toolkit

<table>
<thead>
<tr>
<th>Type: Vertical</th>
<th>Type: Horizontal</th>
<th>Type: Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MPA Template (v03) - Vertical</strong>&lt;br&gt;MPA Cost &amp; Resource Management&lt;br&gt;MPA Resource Management&lt;br&gt;MPA Cost Summary&lt;br&gt;Construction Cost Summary&lt;br&gt;MPA Project Start-Up&lt;br&gt;Design&lt;br&gt;Construction&lt;br&gt;MPA Project Close-Out</td>
<td><strong>MPA Template (v03) - Horizontal</strong>&lt;br&gt;MPA Cost &amp; Resource Management&lt;br&gt;MPA Resource Management&lt;br&gt;MPA Cost Summary&lt;br&gt;Construction Cost Summary&lt;br&gt;MPA Project Start-Up&lt;br&gt;Design&lt;br&gt;Construction&lt;br&gt;MPA Project Close-Out</td>
<td><strong>MPA Template (v03) - Other</strong>&lt;br&gt;MPA Cost &amp; Resource Management&lt;br&gt;MPA Resource Management&lt;br&gt;MPA Cost Summary&lt;br&gt;Design Cost Summary&lt;br&gt;Construction Cost Summary&lt;br&gt;MPA Project Start-Up&lt;br&gt;Construction</td>
</tr>
</tbody>
</table>

**Type: Vertical**
- Often Vertical Construction
- Can be >4 Design Stages
- Architect Often Leads Design Team
- CM/GC Generally responsible for maintaining GMP
- Can be CM@Risk Delivery Method

**Type: Horizontal**
- Often Horizontal/Civil Construction
- Commonly 30%, 60%, 90%, 100% Design Stages
- Engineer (Civil or Structural) Often Leads Design Team
- Almost Always Design-Bid-Build Delivery Method
- Construction Contract Usually Unit Price or Lump Sum

**Type: Other**
- Consisting of Two Project Phases: Professional Services and Implementation
- One Entity for Life of Project
- Project can be Summarized as Procurement of Service/Device & Implementation of Service/Device

---

**massachusetts port authority**
Indicates your Project ID and Project Name. For example: M495-MPA is the Project ID and Reefer Racks is the Project Name.

Indicates your Activity ID and Activity Name. For example: MPA5050 is the Activity ID and Bid Opening is the Activity Name.

Indicates your activity location with the schedule’s WBS Node. For example: Activity MPA5050 is located in the Construction node of the Work Breakdown Structure (WBS).
Other Technologies

Laser Scanning

- Contractual requirement to document existing conditions

Energy Models

- Conformance to Guidelines is a Contractual Requirement Exhibit

RFID

- Contractual requirement to utilize for Safety and Security

4D

- Utilization of 4D for logistics planning and executive presentations
Thank You

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