



Infrastructure Industry Day

August 5, 2021



Infrastructure Industry Day Agenda



- Opening & Welcoming Remarks
- Upcoming Business Opportunities:
 1. Skyway Replacement RFQ/RFP (DBOM)
 2. On-Call Planning Services
 3. On-Call Asset Management Services
 4. MEP Contract Services
 5. Roadway Repair Contract Services
 6. Conveyances O&M Services
- Networking Break – 15 minutes



Industry Day Agenda



- Upcoming Business Opportunities (*continued*):
 1. Taxiway L (Design Build)
 2. T/A Arrival Doors
 3. T/A Departure Doors
 4. T/B & T/C Skyways Station Flooring
 5. Passenger Loading Bridges
 6. Terminal A Modernization Update
- Question and Answer Opportunity
- Industry Day Concludes



Introductions

Justina Mann, Director of Project Delivery

Eduardo Mejia, Office of Business Opportunity



Skyway APM Replacement RFQ/RFP

Scott Hill, Director of Maintenance

Skyway APM Replacement RFQ/RFP Introduction

Scott Hill, Director of Maintenance



- Team Introduction
 - HAS Infrastructure Division
 - Project Delivery
 - Maintenance
 - Planning Team
 - Ricondo & Associates
 - Lea + Elliott
 - VestaRea
 - Newhouse & Associates

IAH Skyway Automated People Mover (APM)

Scott Hill, Director of Maintenance



- Background
 - Formerly known as the TerminaLink
 - Provides Secure Side Conveyance
 - Inservice
 - Phase 1 – 1999
 - Phase 2 – 2005
 - Phase 3 – 2010
 - Periodic Assessments
 - Original Equipment
 - Reaching End Of Service Life
 - System Modernization



Skyway APM Replacement Approach

Scott Hill, Director of Maintenance



- Overview
 - Design Build Operate And Maintain (DBOM)
 - Full Fleet Replacement
 - Automatic Train Control (ATC)
 - Retrofit/Refurbish Of Facility Assets
 - Operations And Maintenance (O&M)
 - **25-30 Years**



Skyway APM Replacement DBOM Procurement

Scott Hill, Director of Maintenance



- DBOM Procurement
 - One Procurement And One Contract*
 - Request For Qualifications (RFQ)
 - (Target September/October 2021)
 - Request For Proposals (RFP)
 - (Target January/February 2022)
 - Desired Notice To Proceed (NTP)
 - (Target November/December 2022)
 - *Minority And Women Business Enterprises*
 - *Projected MWBE Goal 36%*
 - *9% Design, 17% Construction, 10% O&M*



*Tentative – To Be Finalized



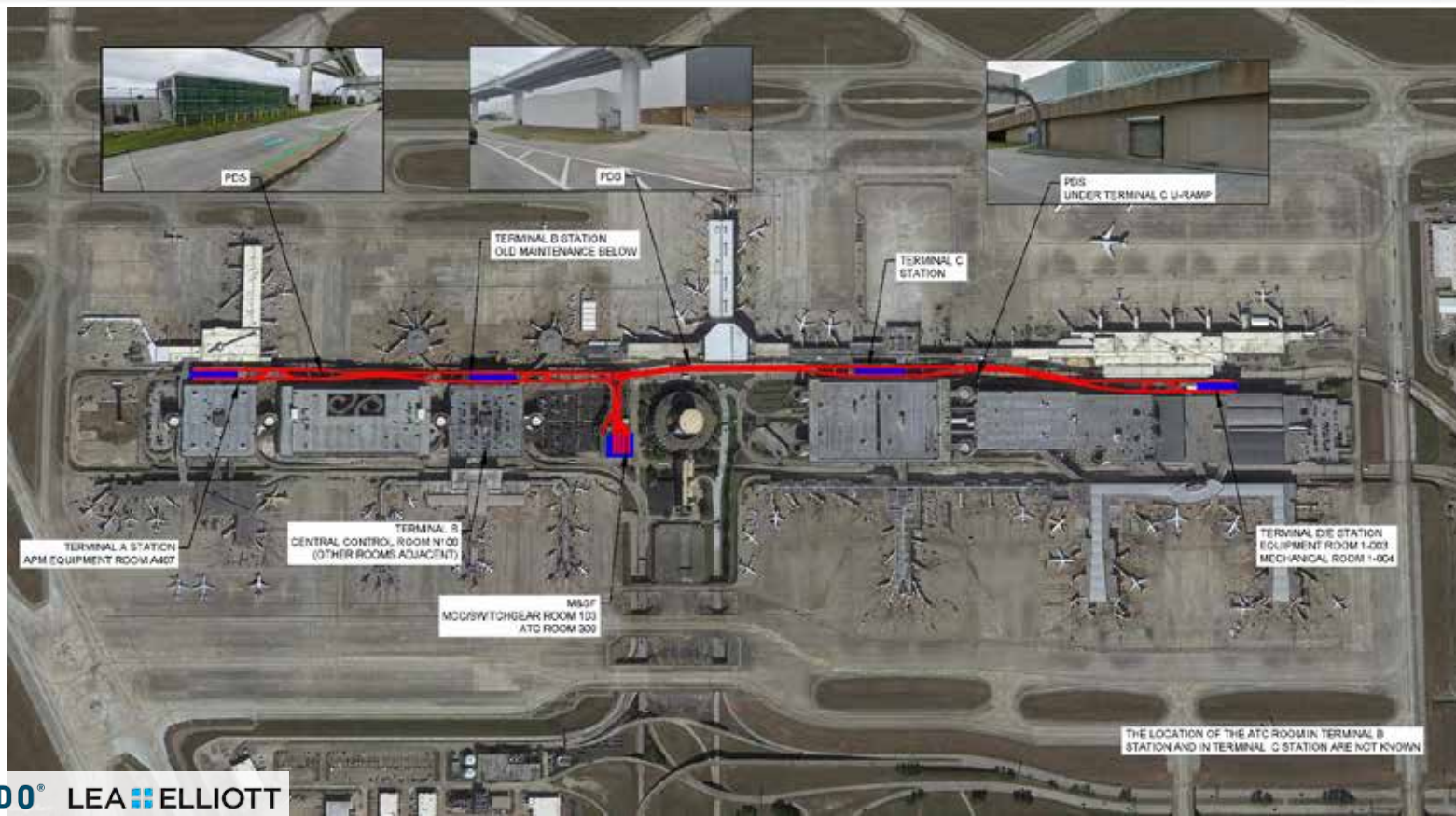
SKYWAY REPLACEMENT PROJECT



RICONDO® LEA ELLIOTT



SKYWAY SYSTEM



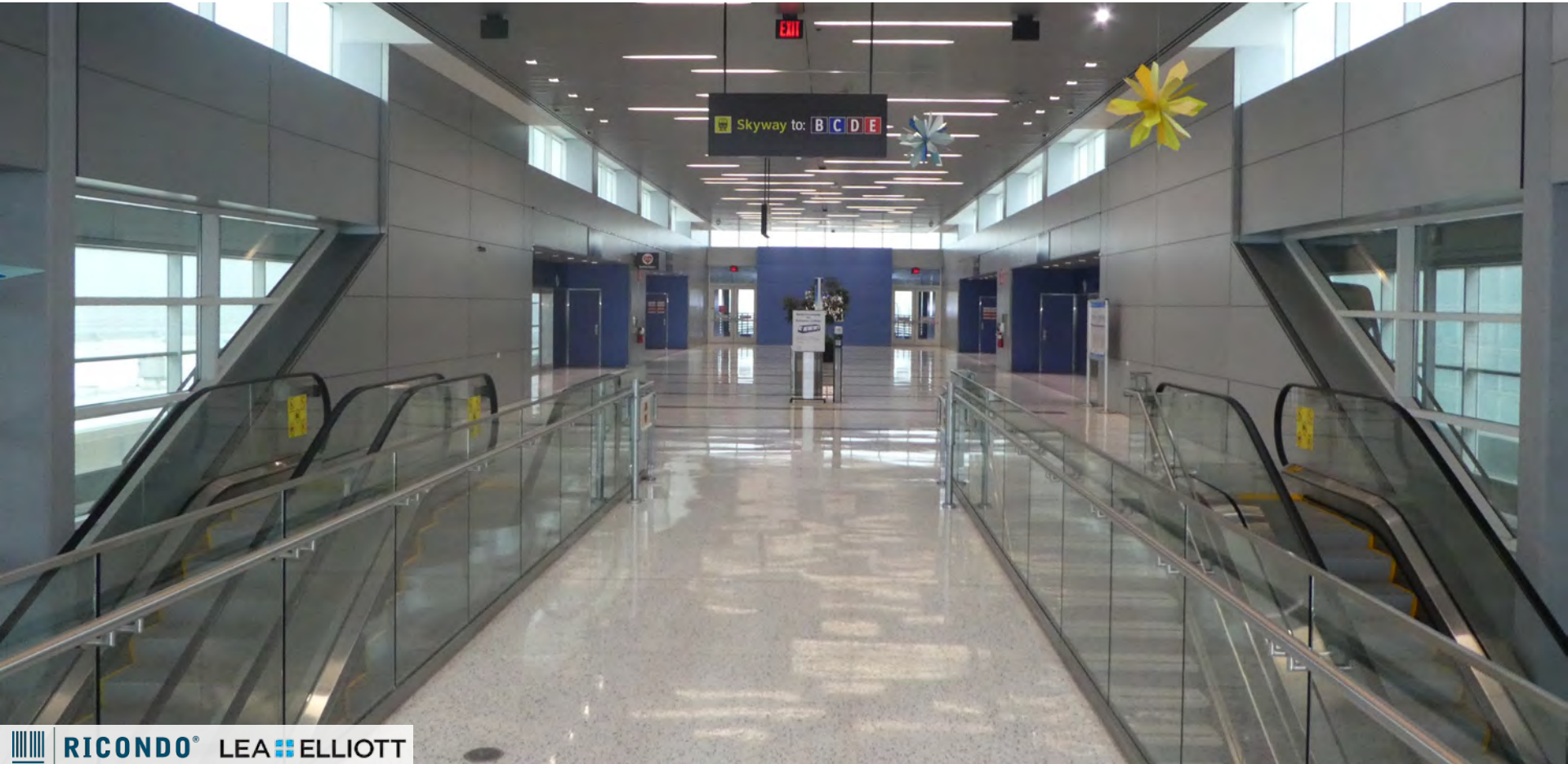


SKYWAY SYSTEM STATISTICS



System Name:	Skyway (formerly TerminaLink)
Role:	Airside conveyance (secure)
In Service Year(s):	Phase 1 - 1999, Phase 2 - 2005, Phase 3 - 2010
System Operating Configuration:	Pinched loop, elevated
Guideway Length:	1.0 miles (1.6 km) dual-lane guideway
Vehicle/Train Configuration:	2-car trains
Fleet Size:	16 vehicles (8, 2-car trains)
Propulsion:	600 Vac traction motors, guideway-mounted insulated power rail
Control System:	Fixed block, fully automated
Peak Hour Capacity:	5,000 pphpd
Headway:	1.85 mins

Terminal A Station



SYSTEM/STATION INTERFACES

Camera

Dynamic Displays

Station PA

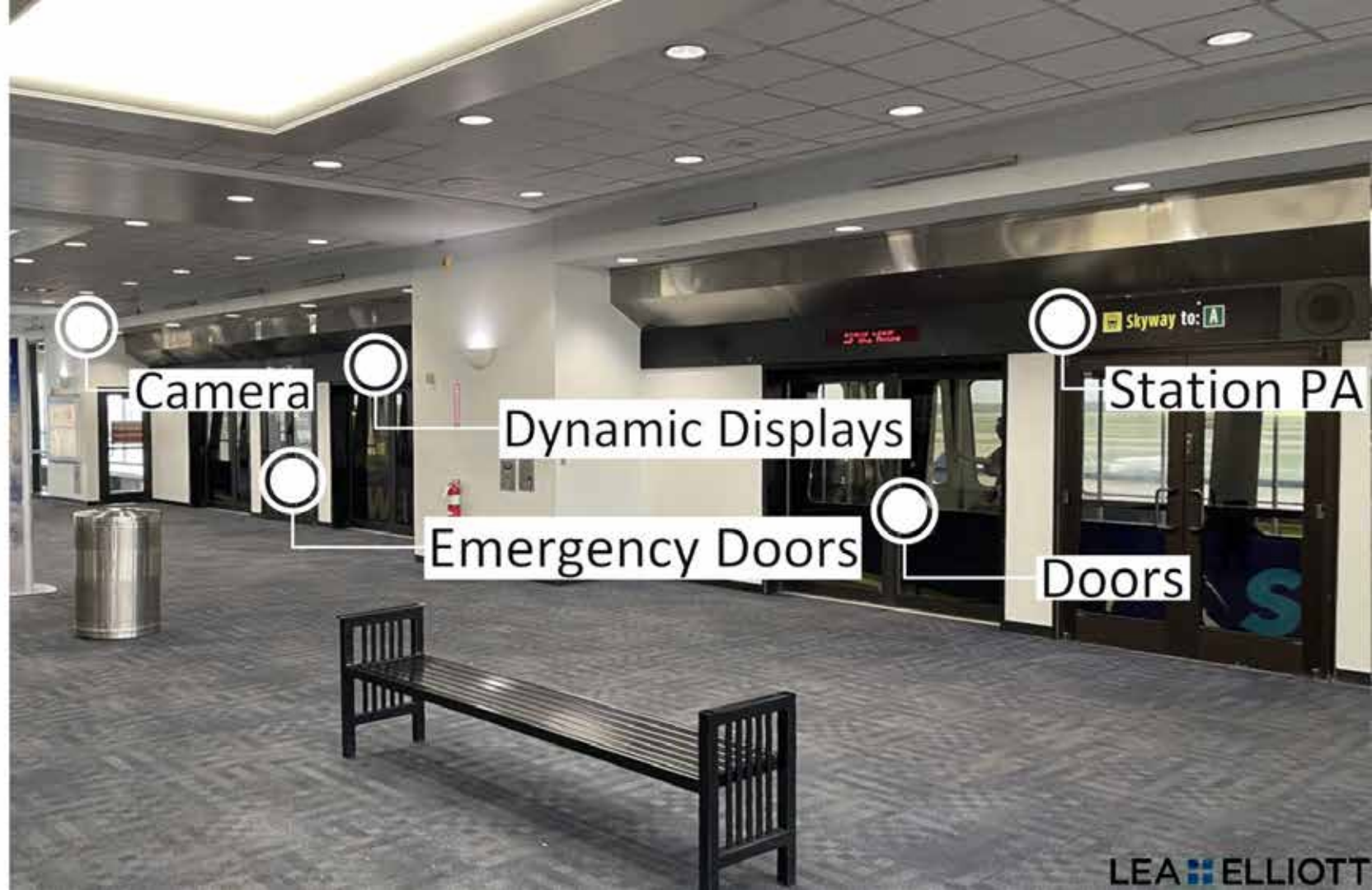
Doors

Emergency Doors



TERMINAL STATION B

SYSTEM/STATION INTERFACES



OFF-LINE MAINTENANCE AND STORAGE FACILITY



RICONDO®

LEA ELLIOTT

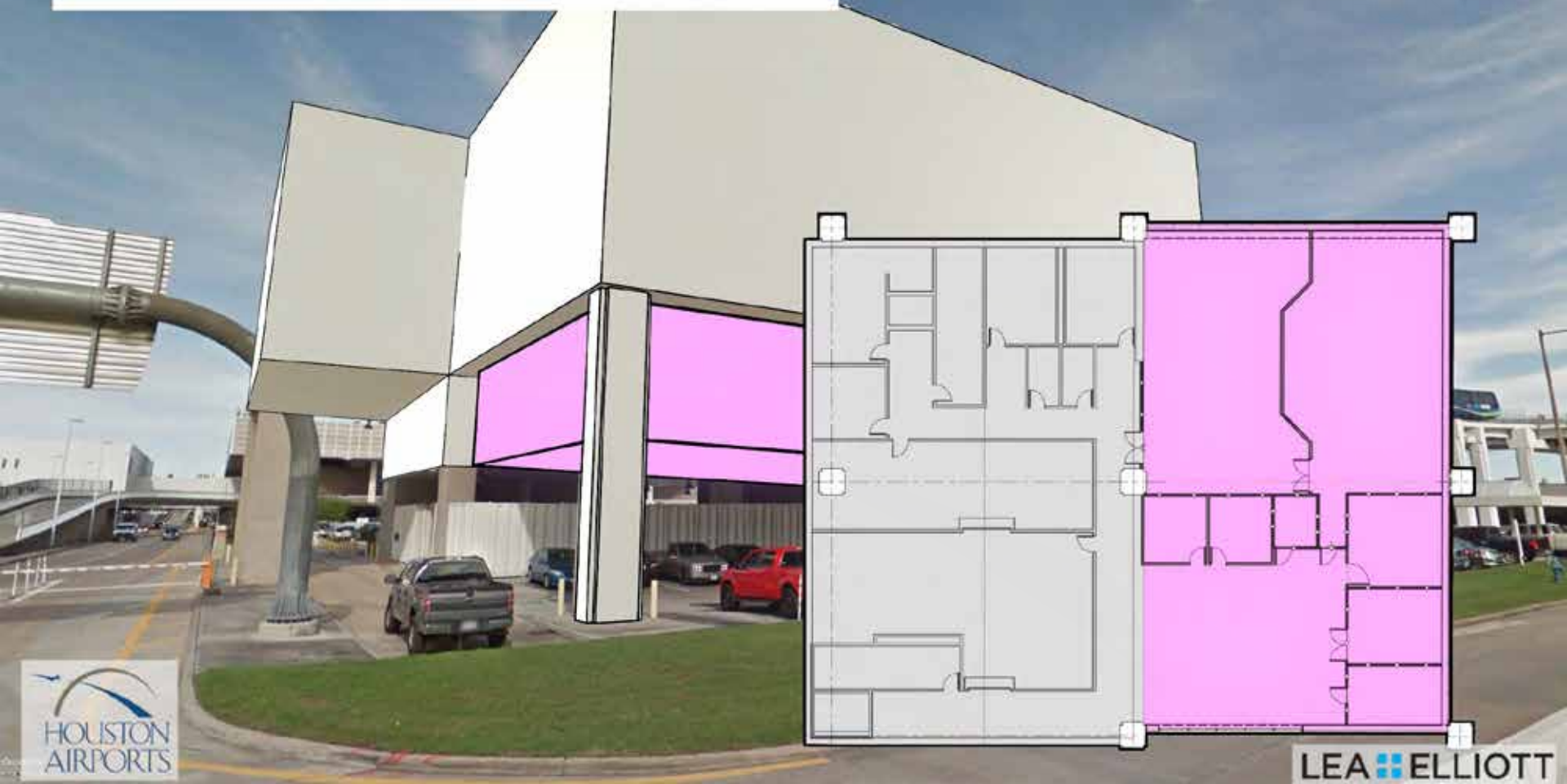
OFF-LINE MAINTENANCE AND STORAGE FACILITY



OFF-LINE MAINTENANCE AND STORAGE FACILITY



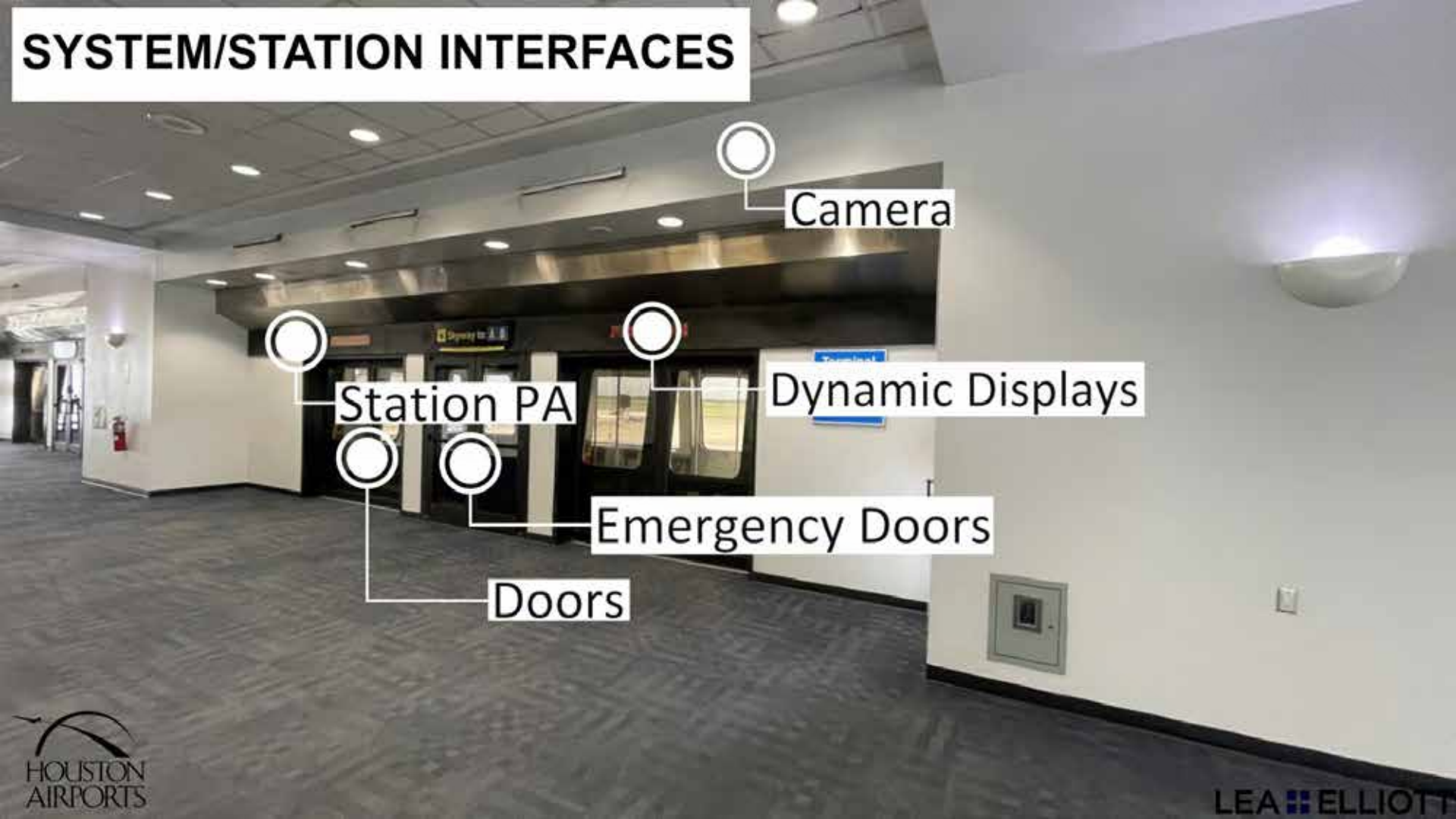
MSF - New Central Control Room





TERMINAL C STATION

SYSTEM/STATION INTERFACES



Camera

Station PA

Dynamic Displays

Emergency Doors

Doors



TERMINAL D AND E STATION



RICONDO® LEA ELLIOTT

SYSTEM/STATION INTERFACES



SYSTEM/STATION INTERFACES





SCOPE OF WORK



Full Turnkey System Replacement Including:

- Full Fleet Replacement
- Automatic Train Control(ATC) Replacement
- Retrofit and Refurbish all existing
 - APM facilities
 - Stations
 - Guideway
 - MSF
 - Central Control Facility (CCF)
 - Power Distribution Subsystem





SCOPE OF WORK



- Communication System Replacement
 - Telephone
 - Emergency Telephone
 - Dynamic Displays
 - Public Address
 - CCTV
- Remove and Replace Guideway Running Surface, Guidance Equipment and Power Rail
- Remove and Replace Existing Power Distribution Equipment including new wiring and cabling
- Remove the Existing Central Control located in Terminal B
- Expand the Existing MSF Support Level to allow new Central Control and Support Rooms
- System Operation and Maintenance Contract
 - 1 x Ten (10) Year Initial Term
 - 1 x Ten (10) Year 1st Renewal Option
 - 1 x Five (5) Year 2nd Renewal Option





PERFORMANCE REQUIREMENTS



- Fit within the Existing Fixed Facilities Constraints
- Fully Automated Trains, without need of Drivers/Attendants
 - Operate Primarily as a Pinched Loop
 - Bi-directional Operations on Single Guideway sections for Maintenance/Failure Management
 - Vehicle Capacity
 - Seating Capacity: Minimum 10% - Maximum 15 % of Normal Vehicle Capacity
 - Standing Design Capacity: One passenger for each 2.7 ft² of standee floor area
 - Standing Normal Capacity: One passenger for each 3.5 ft² of standee floor area
- Passenger Service Characteristics
 - Minimum Capacity: 4800 pphpd
 - Maximum Headway: 180 seconds
 - Maximum Station Dwell: 60 Seconds





DESIGN LIFE



50 Years - Fixed Facility Structures

- Guideways, Stations, MSF, and All Other Fixed Facility System Related Structures

30 Years – Guideway Equipment

- Running Surfaces
- Guidance Equipment, including Guideway Switches

30 Years - Power Distribution System Substations and All Wiring and Cabling

15 Years - ATC , Communication Equipment and All Other Major System Equipment

Vehicle Design Life

- At Least 30 years or 3,000,000 miles
- Full Rehabilitation of the Vehicle will be permitted at 15 years or 1,500,000 miles





PROCUREMENT AND IMPLEMENTATION SCHEDULE



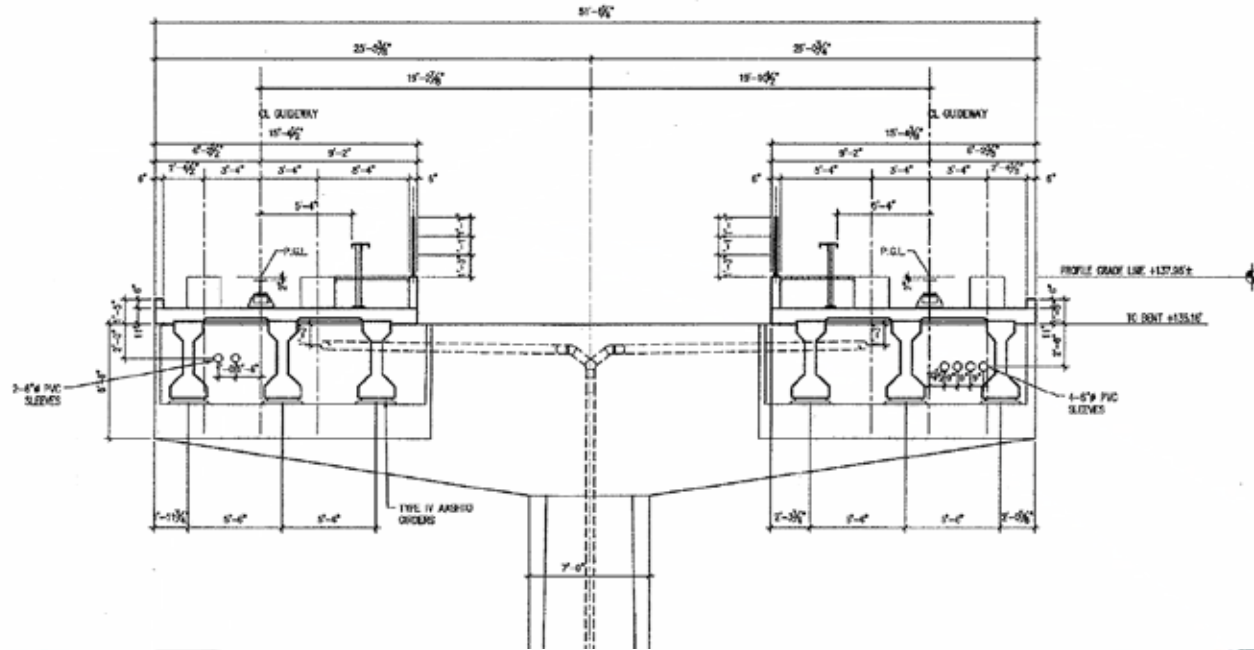
**Preliminary*

	2021				2022				2023				2024				2025				2026				2027				2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Procurement Documents																																
RFQ and RFP																																
System Implementation																																
Design and Engineering																																
Manufacturing																																
Construction																																
Installation and Integration																																
Testing and Acceptance																																



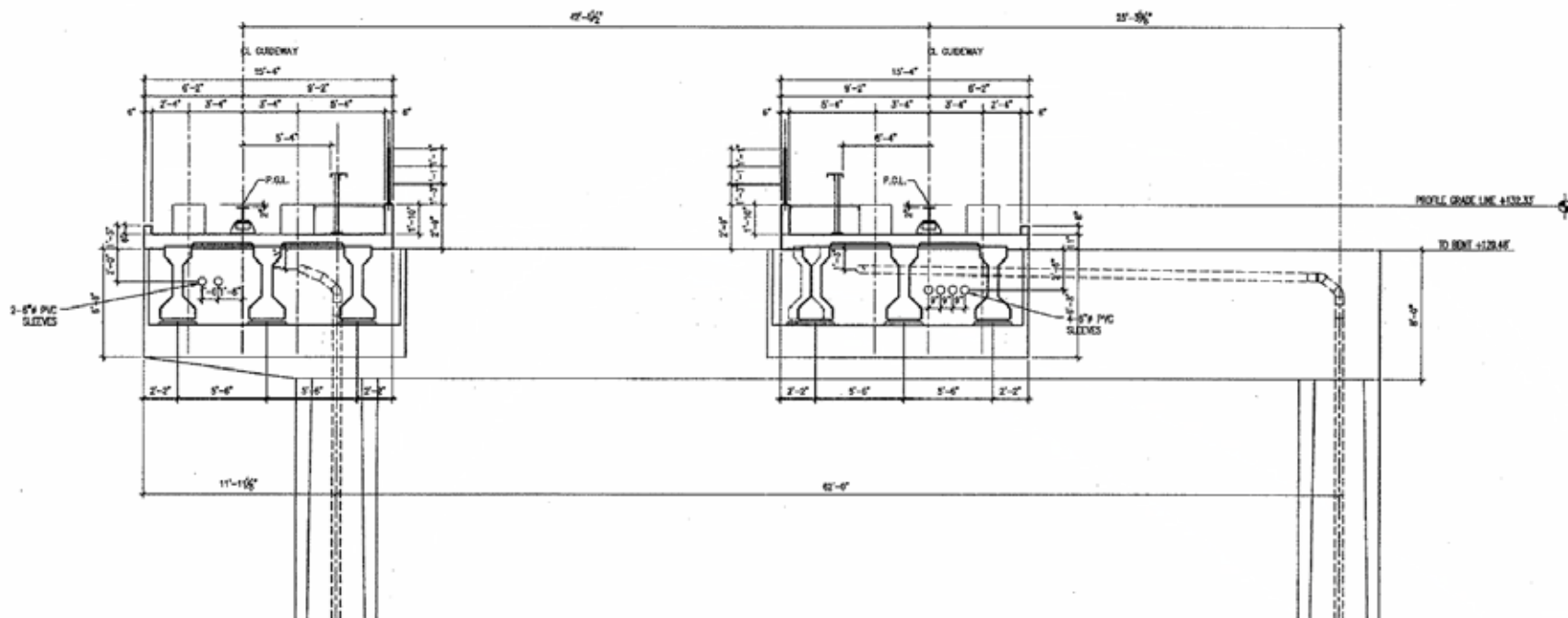


GUIDEWAY SECTION





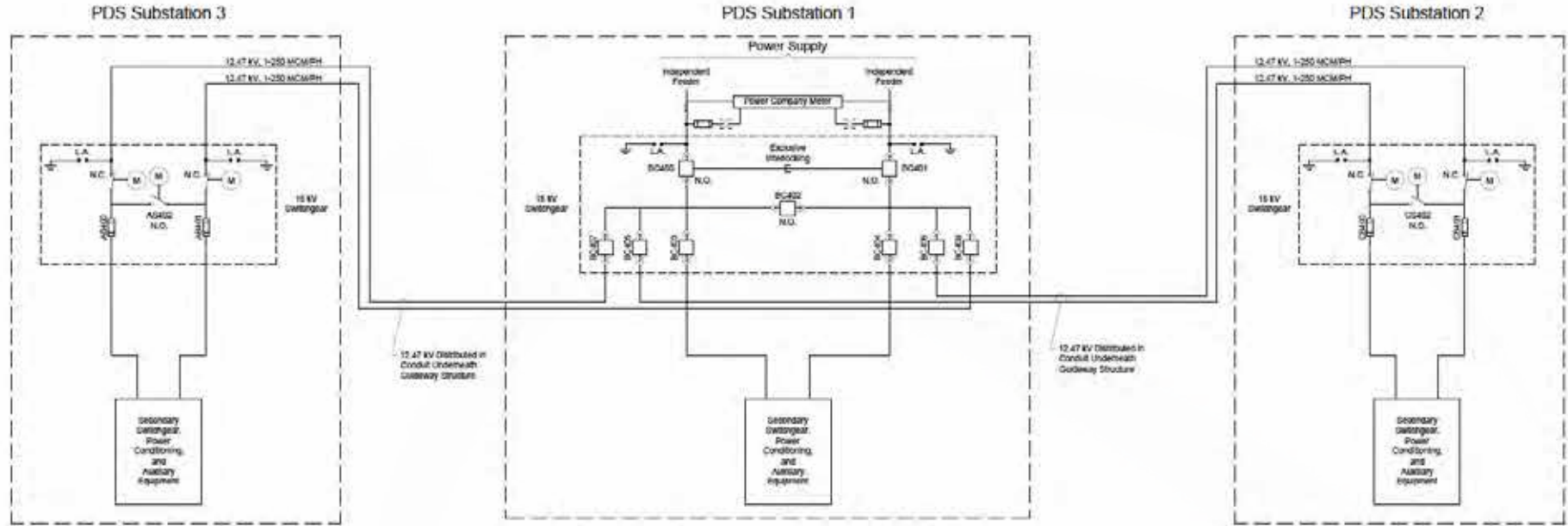
GUIDEWAY SECTION





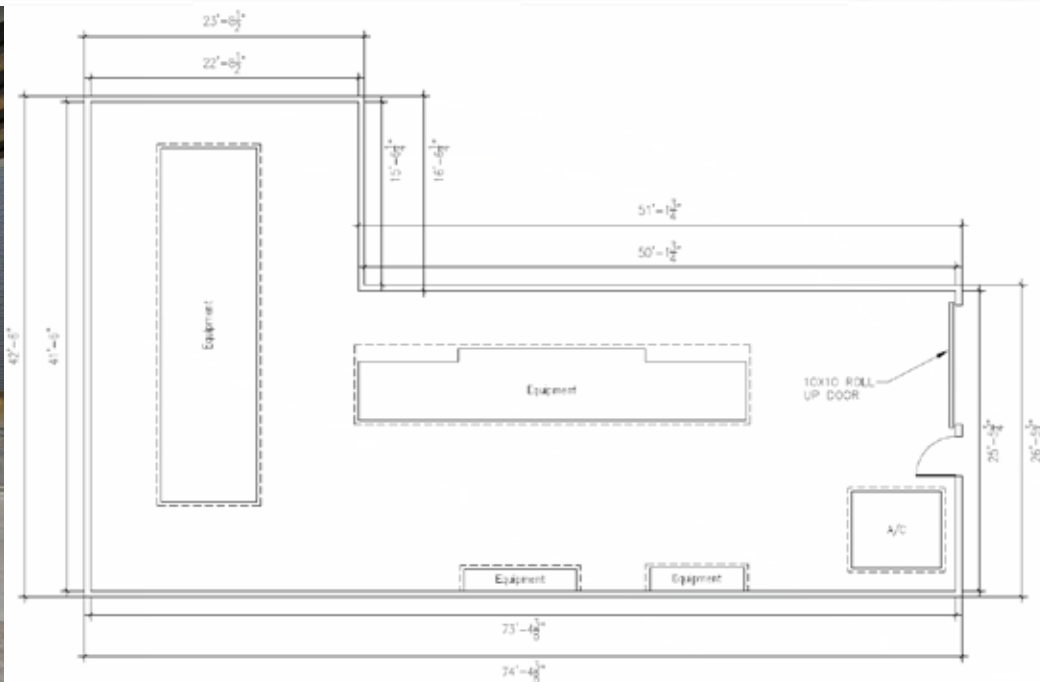


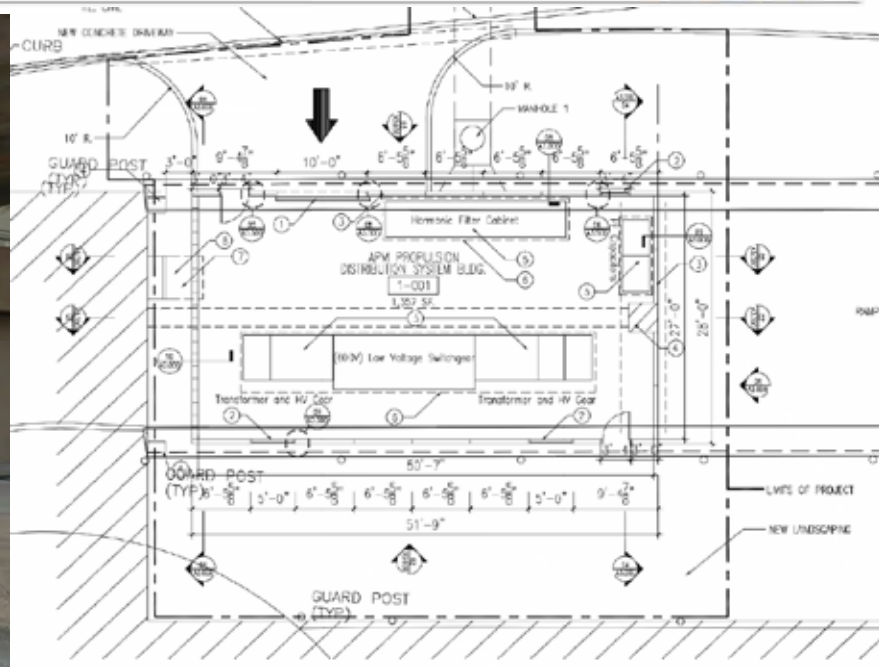
POWER DISTRIBUTION SYSTEM (PDS)





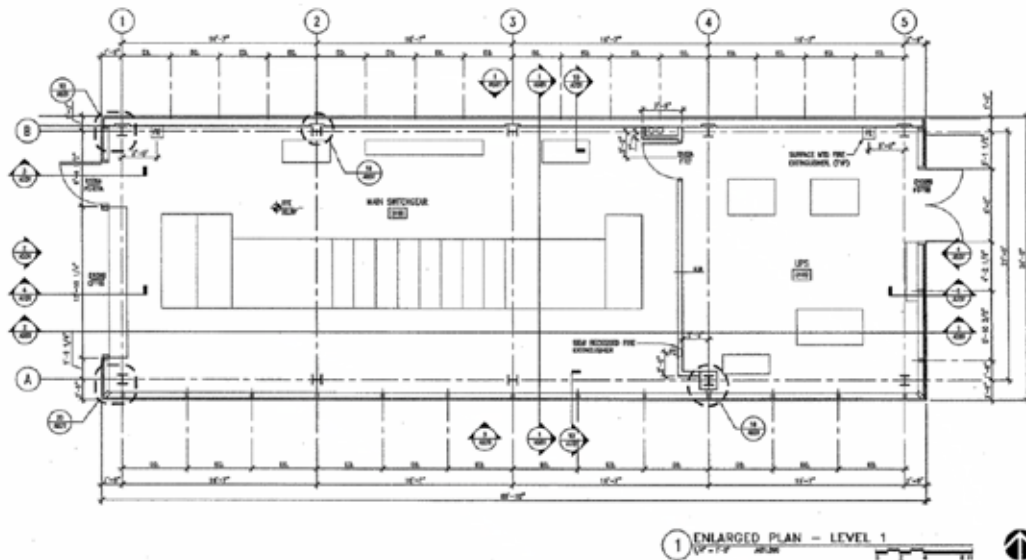
PDS SUBSTATION 1







PDS SUBSTATION 3





On-Call Planning Professional Services

Karen Korir, Chief Aviation Planner



On-Call Planning Professional Services





■ Project Objectives

- On-Call **Planning** Professional Services
- Three (3) Year Term with Two, One (1) Year Optional Extensions*
- Select 3 Teams*
- Airports – George Bush Intercontinental Airport, William P. Hobby Airport, Ellington Airport,
- Administration – Houston Airport System wide

*Tentative/Projected – To Be Finalized



On-Call Planning Professional Services

- Procurement:
 - Request For Qualifications (RFQ)
 - Advertise Fall 2021
 - Minority And Women Business Enterprises
 - Projected DBE Goal 25%*



On-Call Planning Professional Services



- Technical Planning – Airfield, Terminal, Landside, Support Facilities
- Airport master plan implementation support
- Support to the capital improvement program and Airport Improvement Program (AIP) for grants
- Support to the Individual aviation planning project studies
- Support to Airport Spatial Information Services (ASIS/GIS)
- Environmental activities related to development, demographics, economic impacts, management of aviation planning data
- Aviation planning support to airport management





Examples of Tasks



- Developing Project Definition Manuals (PDM)/Project Definition Documents (PDD)
- Aviation activity forecasting
- Modeling airfield and airspace movements, runway, taxiway, taxilane reconfigurations, greenfield site development, extensions
- Studies for terminal expansions, renovations, as well support facilities.
- Modeling terminal passenger movements
- Modeling vehicle and roadway activities and preparing access studies
- Developing Airport Layout Plan updates, Safety Risk Assessments, support in processing approval of plans by FAA
- Part 150 study tasks including mapping. Environmental issues relating to specific construction projects encompassing issues relating to air quality, wetlands, historic preservation, noise, water quality, or other categories covered under the National Environmental Protection Act or other applicable state and federal regulations.





Examples of Tasks



- Assisting in the preparation of requests and/or responses for qualifications/proposals on other aviation planning projects as needed
- Providing technical support to Airside Operations interpreting FAA requirements, including coordination of Modification of Standard waivers. Supporting HAS Infrastructure and other Divisions in its interaction with federal, state, local, public, and private agencies and groups
- Conducting plan reviews including construction drawings/reports as needed
- Preparing conceptual construction phasing plans, and project schedules for airfield, terminal, landside, and support facilities
- Cost estimating, feasibility analysis and various economic analyses
- Conducting peak week surveys. Researching trends in the aviation industry
- Providing CAD, 3D Modeling, Rendering, presentation graphics support as needed
- Facilitating technical public review sessions



On-Call Asset Management

Scott Hill, Director of Maintenance

On-Call Asset Management

Scott Hill, Director of Maintenance



■ Overview

- Three (3) Year Term
 - One (1) Two (2) Year Option
- Multiple Professional Services Firms
- Asset Management Deliverable:
 - Condition Assessment
 - Commissioning
 - Retro-Commissioning
 - Asset Inventory
 - Enterprise Asset Management System (EAMS)

Condition assessments, commissioning, retro-commissioning, asset inventory, assessment of risk and vulnerability of assets, and Enterprise Asset Management Systems (EAMS) management

- | | | | |
|---|--|---|---|
| • Building Plumbing | • Security Systems | • Conveyances | • Deicing System (aircraft) |
| • Domestic Water | • Building Envelope (including window wall and roofing) | • Automated People Mover/Train Systems | • Interior and Exterior Lighting |
| • Sanitary Sewer | • Parking Garages | • Airfield Lighting | • ADA and other Code Compliance |
| • Storm Water/Drainage | • Building Emergency Systems | • Airfield Pavement | • Federal, State, and Local Regulations |
| • Building HVAC (including control systems) | • Landscaping Systems | • Airfield FAR 139 | • Various buildings/facilities such as, commercial warehouses, aircraft hangars, underground utilities, habitable tunnel facilities |
| • Building Electrical | • Automated Access Control Systems | • Certificated Pavements | • Site MEP |
| • Fire/Life Safety (including all applicable codes) | • Automated Baggage Systems (including controls systems) | • Roadway Pavement (Public and Service) | |



■ Standard Assessment Deliverables

- Narrative Report Of The Asset Condition, Providing Prioritized Recommended Repairs, Rehabilitation, Upgrade And/Or Replacement. Recommendations Grouped Into Standard Categories:
 - Priority: Completion Recommended In 0-3 Years
 - Near Term: Completion Recommended In 4-7 Years
 - Long Term: Completion Recommended In 8+ Years
- A Determination Of The Estimated Value Of Deferred Maintenance, And Current Replacement Value, Of Each System
- Assignment Of Objective Actual Condition Index (ACI) At Systems Level
- Calculated Financial Condition Index (FCI) At Systems Level
- Completed Asset Information Template And Installed Bar Code, Providing Inventory And Condition Data, To Facilitate EAMS Population

On-Call Asset Management

Scott Hill, Director of Maintenance



- Procurement:
 - Request For Qualifications (RFQ)*
 - Advertise October 2021*
 - *Minority And Women Business Enterprises*
 - *Projected MWBE Goal 25%*

*Tentative/Projected – To Be Finalized



MEP Contract Services

Scott Hill, Director of Maintenance
Angel Santos, Deputy Assistant Director



MEP Contract Services

Angel Santos, Deputy Assistant Director

- Overview:
 - Three (3) Year Term
 - Multiple Firms
 - Minor Repair, Rehabilitation, Construction And Alteration Of HAS Facilities And Infrastructure Related To:
 - ***Mechanical And Plumbing***
 - ***And Associated Electrical***
 - Work Orders Issued On-Call/As-Needed

Includes:

Storm Water Lift Stations, Sanitary Lift Stations, Ditch Gates, Grease Traps, Triturators, Dewatering Pumps, Various Plumbing Lines and other Mechanical/Plumbing Systems

MEP Contract Services

Angel Santos, Deputy Assistant Director



- Procurement:
 - Invitations To Bid (ITB)*
 - Advertise September 2021
 - *Minority And Women Business Enterprises*
 - *Projected MWBE Goal 11%*

*Tentative/Projected – To Be Finalized



Roadway Repair Services

Scott Hill, Director of Maintenance

Angel Santos, Deputy Assistant Director

Roadway Repair Contract Services

Angel Santos, Deputy Assistant Director



■ Overview:

- Three (3) Year Term
 - One (1) Two (2) Year Option
- Multiple Firms
- Minor Repair, Rehabilitation, Construction And Alteration Of HAS Facilities And Infrastructure Related To:
 - ***Landside Roadway Pavement***
- Work Orders Issued On-Call/As-Needed

Includes:

Street/Roadway Pavement, Driveways, Wheelchair Ramps, Sidewalks, Parking Lots and other Non-Airfield Pavement

Roadway Repair Contract Services

Angel Santos, Deputy Assistant Director



- Procurement:
 - Invitations To Bid (ITB)*
 - Five (5) Year Term
 - Advertise September 2021
 - *Minority And Women Business Enterprises*
 - *Projected MWBE Goal 0%*

*Tentative/Projected – To Be Finalized



Conveyances O&M Services

Scott Hill, Director of Maintenance

Angel Santos, Deputy Assistant Director

Conveyances O&M And Service Life Renewal Service

Angel Santos, Deputy Assistant Director



Scope And Objectives:

- Invitation To Bid (ITB)
- Five (5) Year Contract
- Conveyance System Operations And Maintenance (O&M) Services
 - Three Levels Of Service
 - Best Management
 - Industry Standard
 - Reactive

<u>HAS Operated Conveyance Systems</u>			
Type	IAH	HOU	EFD
Hydraulic Elevator	41	14	1
Roped-Hydraulic Elevator	3	0	0
Traction Elevator	29	0	0
MRL Traction Elevator	1	12	1
Escalator	46	12	0
Moving Sidewalk	9	4	0
Wheelchair Lift	1	0	0
Total	131	42	2

Conveyance O&M Services

Angel Santos, Deputy Assistant Director



- Procurement:
 - Invitations To Bid (ITB)*
 - Five (5) Year Term
 - Advertise September 2021
 - Minority And Women Business Enterprises
 - Projected MWBE Goal 15%*

*Tentative/Projected – To Be Finalized



15 Minute Break



Taxiway L

Devon Tiner, Assistant Director of Aviation

Ellington Airport Taxiway L Design/Build Opportunity

Devon Tiner, HAS City Engineer



- Overview
 - Full length concrete taxiway
 - Supports Runway 4/22 access for Houston Spaceport tenants.
 - Design / Build Contracting Opportunity
 - RFQ Advertisement in December 2021



Ellington Airport Taxiway L Design/Build Opportunity

Devon Tiner, HAS City Engineer



■ Ellington Airport Taxiway L Design/Build

CONCEPT ATTRIBUTES:

- MEETS FAA AC 150/5300-13A DESIGN STANDARDS.
- MEETS TDG 6 REQUIREMENTS.
- PROVIDES A 500' RUNWAY 4-22 TO TAXIWAY OFFSET WITH REVERSE CURVE.
- PROVIDES A 650' RUNWAY 17R-35L TO TAXIWAY OFFSET.
- MEETS ADG V STANDARDS FOR VISIBILITY MINIMUMS WITH LOWER THAN 1/2 MILE AND LIMITED ADG VI CAPABILITIES WHEN MINIMUMS ARE GREATER THAN OR EQUAL TO 1/2 MILE.
- RELOCATES RUNWAY 22 ROLLOUT RVR 330 FEET SOUTH.
- RELOCATES WIND CONES IN CRITICAL AREAS AND/OR RUNWAY SAFETY AREA.



T/A Arrival Doors T/A Departure Doors T/B & T/C Skyway Station Flooring

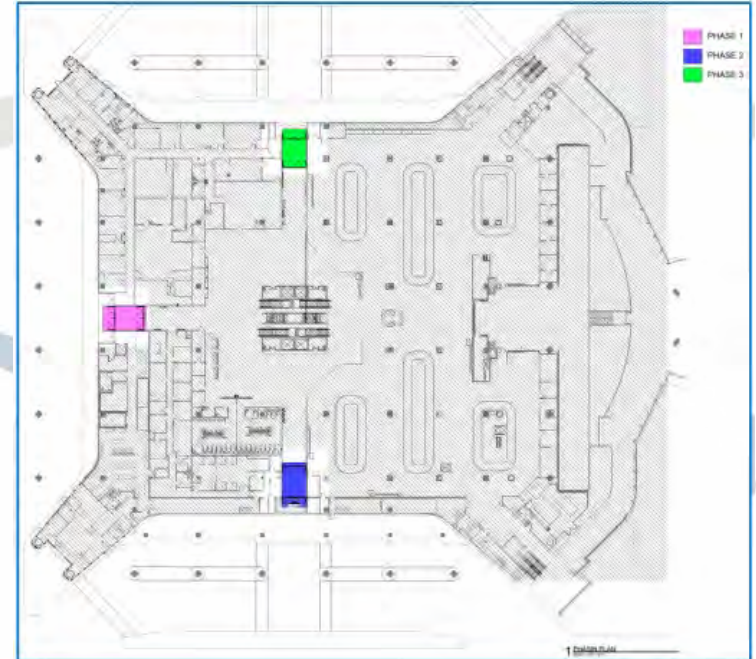
Justina Mann, Director of Project Delivery

Project 257A – IAH Terminal A. Arrivals Level Door Replacement

Project Manager – Michael Slade



- Project Objectives
 - Removal and replacement of the automatic doors at Terminal A. Arrivals Level. Phased demolition of the existing entrance doors as well as required architectural demolition and repairs associated with installation of new doors
- Invitation To Bid (ITB)
- Project will be advertised September 2021



Project 257B – IAH Terminal A. Departure Level Door Replacement

Project Manager – Michael Slade



- Project Objectives
 - Removal and Replacement of the automatic doors at Terminal A. Departures Level. Phased demolition of the existing departures doors as well as required architectural demolition and repairs associated with installation of new doors.
- Invitation To Bid (ITB)
- Project will be advertised September 2021



IAH 255 TB & TC – SKYWAY STATIONS CARPET REPLACEMENT

Project Manager – Michael Slade



- Project Objectives
 - Replace the existing floor finish at the Skyway Stations located in Terminal B and Terminal C. The carpet will be replaced with quartz Tile Terminals B & C Station Is Approximately 15,000 SF.
- Invitation To Bid
- Project will be advertised September 2021





TB INTERIOR RENDERING - UPPER LEVEL







Passenger Loading Bridge

Dave Brandenburg, Executive Advisor

Passenger Loading Bridge (PLB) Procurement Scope Description



- PLB procurement for IAH and HOU
 - Provide a single manufacture for approximately 40 PLB's, PCA's and GPU's across both IAH and HOU to support standardized maintenance, operation, training, spare parts and consistent reliability.
 - Includes the installation at Hobby of 5 PLB's, PCA's and GPU's
 - Provide 5 year turn-key maintenance for each PLB, PCA and GPU.
- Design – Large On Call (Jacobs)
- Project Status
 - Design Complete Fall 2021
 - Anticipate Contractor Procurement Winter 2021
 - Anticipated Completion Winter 2025





Domestic Redevelopment Program Terminal A Modernization Project

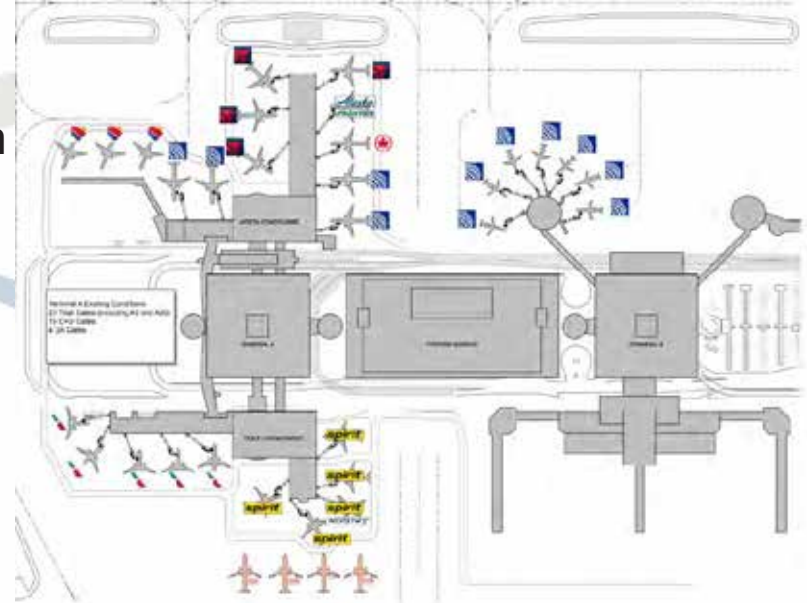
Dave Brandenburg, Executive Advisor

IAH Domestic Redevelopment Program (DRP)

Overview



- Terminal A Projects
 - Baggage Handling System Optimization
 - Design Complete
 - Construction Contract Awarded
 - Early And Enabling Works (Curbside)
 - Modernization
 - Expansion



Early And Enabling Works (Curbside) Scope Description



- Improvements To Exterior Terminal Functions
 - Curbside Capacity Improvements
 - Demolish existing helices
 - Construct new bridges connecting garages
 - Expanded Arrivals/Departures/Commercial curbs
 - South Terminal Roadway Improvements
 - Design-CMAR
 - Project Status
 - Advanced Design Document underway
 - Anticipate Architect/Engineer Services and CMAR RFQ Fall 2021



Terminal A Modernization Project

Scope Description



■ Scope Elements

- Core Building Systems Service Extension
- Inbound Baggage Handling Service Extension
- Gate Support Equipment Replacement
- Addition/Renovation of Existing, Restrooms
- Refreshed Finishes, Furniture, Fixtures & Equipment

■ Project Status

- 30% Design Complete
- Anticipate Soliciting Architect/Engineer Services Fall 2021*
- Anticipate Soliciting EPM/PM Services Fall 2021*

* - Pending Council/Airline discussions



Terminal A Expansion Project

Scope Description



- Purpose

- Increase Gate Capacity To Meet Domestic Airline Requirements

- Project Status

- Anticipate Soliciting Architect Engineer Services Fall 2021*
- Anticipate Soliciting EPM/PM Services Fall 2021*

* - Pending Council/Airline discussions



IAH Domestic Redevelopment Program

Milestones - 1



■ Program Scoping And Review

- Industry Day Outreach Event (today)
- Domestic Airline Reviews/Briefs
- Economic Development Committee
- Airport Airline Affairs Committee

August 2021

Ongoing

Fall 2021

Fall 2021

IAH Domestic Redevelopment Program

Milestones - 2



- Design And Construction Support
 - On-Call Planning Services On Going
 - Expansion Project PDM
 - On-Call Design Services On Going
 - Curbside To 15% Design (ADD)
 - Solicit Curbside A/E and CMAR Services Fall 2021
 - Solicit Modernization/Expansion EPM/PM: Fall 2021
 - Solicit Modernization/Expansion Design Services Fall 2021



Infrastructure Industry Day

Question And Answer Opportunity