ENERGY RESILIENCY & BUSINESS OPPORTUNITIES WITH LOS ANGELES WORLD AIRPORTS

PRESENTED BY
Robert Gilbert, LAWA Assistant General Manager
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Agenda

- Background on LAWA Resiliency
- Resiliency Initiatives
- Principles of Design
- Noteworthy Project Opportunities
- Opportunities & Outreach
- How to do Business with Los Angeles World Airports (LAWA)
Background on LAWA Resiliency Initiatives
Issues of Concern

➢ **Power Reliability**
  • Power anomalies that have faced LAX over last several years
  • Power anomalies have caused issues to our systems and operations

➢ **Power Resiliency**
  • Dec. 2017 Atlanta 11 hour power outage
  • Drew attention to need for resiliency
  • Need for protection from power disruption for extended periods

➢ **IT Cyber Concerns**
  • Increasing threat of cyber attacks & integration with power systems
Emergency Power Readiness Task Force

- In January 2018, commissioned by CEO Flint as a proactive measure in response to the Atlanta Hartfield power outage.

- LAWA Task Force set out on 2 parallel paths:
  - To immediately assess vulnerabilities against unforeseen power disruption
  - To otherwise prepare for an extended loss of power
Emergency Power Readiness Task Force

Path #1 -Tactical: Assessment– Validation – Testing – Corrective Action

What Stays on When the Power Goes Off

1. Power shut-down Exercise of Northern Terminals conducted on September 12, 2018
2. Back-up systems, generators, life safety equipment, standard operating procedures
3. Power outage test of TBIT Oct. 31st, 2018
4. After Action Reports highlighted vulnerabilities & need for better power reliability & resiliency
Path #2 – Strategic:

Preparing Today for the Unknown Tomorrow

- LAWA-LADWP Joint Energy Summit held March 20, 2018

- Over 50 senior officials in attendance, representing:
  - Academia, Energy Systems, Design/Engineering, Equipment/Technology, Legal, and Infrastructure Capital, as well representatives from other Major US airports

- The key take-aways:
  - LAWA should undertake a “resiliency audit” from which an overarching protective strategy could be developed
  - Core objective to provide for LAX to remain operational for an extended period of time in the event of a system-wide loss of power.
LAWA Partnership with NREL

- The National Renewable Energy Laboratory (NREL) is the only research organization supported by the US Department of Energy solely dedicated to advancing energy efficiencies, renewable energy technologies and resiliency applications.

- NREL is the prime resource for major installation at all levels of government, with extensive experience as well in private sector infrastructure.

- LAWA initiated a plan with NREL to provide solutions for renewable energy for US airports.

- LAWA recommended that NREL conduct airport centric studies in various energy and sustainability initiatives for airports.

- LAWA will become a flagship model for US airport resiliency and power protection.

- NREL is also under contract with LADWP, and is furthering the objectives of LAWA-LADWP and creating synergies with both organizations.
Formation of US Airport Strategic Consortium

LAWA’s pro-active efforts to address airport resiliency helped stimulate the formation of an assemblage of major US airports to come together and help catalyze industry solutions to pressing energy challenges facing the air transport industry.

US Airport Energy Consortium, now under formation, will be led by NREL with direct oversight of the US Dept. of Energy

- Objectives:
  - To focus on the consortium's most significant applied energy challenges
  - To leverage the capabilities DOE’s national labs and resources
  - To seek federal grants and program funding
  - To advance pursuit of federal funding opportunities for project implementation
  - To provide a platform and assist for pursuit of city, country and state funding

- Among the focus areas:
  - Airport electrification
  - Airport micro-grids
  - Aviation biofuel

- Charter Members to include:
  - NREL - US Dept. of Energy
  - LAX, ATL, DFW, ORD, JFK, and DEN
Resiliency Initiatives
NREL Resiliency Strategy

Optimization

What Do We Have?

Integration

What Can We Add?

Resilience Analysis

How Much Protection Do We Want to Build For?
Exploring the Creation of a Microgrid at LAX

**Definition:**

**mi·cro·grid**

/ˈmīkrōˌɡrid/

noun

A microgrid is a system of electricity sources within a clearly defined boundary that can disconnect to “island mode” in the event the primary energy source is cut off.

NREL: “Renewable energy and storage, integrated into a microgrid to provide backup power to LAX, can be developed to create a ‘resiliency dividend’ which can be used to attract private sector capital or to otherwise provide LAWA cost-reduced protection.”
Other Initiatives

- New Receiving Station – RS-X
- Earthquake Resistant Piping
- Storm Water Protection Piping
- Dedicated Fire/Water Infrastructure
RS-X POWER COVERAGE MAP

- Receiving Station X
- World Way West Facilities
- Midfield Satellite Concourse
- Central Terminal Area
- Automated People Mover
- Intermodal Transportation Facility-West
- Consolidated Rent-A-Car Facility
- LAX Airfield
PROJECT ELEMENTS

PDG Power System Multi-Year Master Plan

RS-X

F Northside Redevelopment

J Northside East Redevelopment

G North Terminals

Concourse 0

E Future Development

K Skyview

ITF-E

L Century Cargo

D South Terminals

H Terminal 9

B Terminals

C South Terminals

A Bus Yard

M Imperial Redevelopment

REQUIRES APPROVAL

Immediate Action Planned
Short-Term Future Planned
Long-Term Future Planned
Principles of Design
Approximately 3,000 page DCH is provided to all bidders for LAWA Projects.

DCH now being upgraded to address resiliency protection, including:
- Seismic requirements
- Backup power systems
- Smart Metering

Other Requirements:
- Cyber Protection
- Solar/ Battery Storage Capability

LAWA Guidelines continually evolving to adapt new technologies & Threats.
Future Ideas Under Study

- Exploration of solar project in Palmdale
- Utilization of jet fuel to power diesel generators
- Mobile Backup Generators
- Central Receiving and Distribution Center (to provide food & water resiliency)
- Anaerobic digester
Current and Upcoming Bids:

LAWA partners with the consultant and contractor communities to meet our vision of “Gold Standard Airports – Delivered”

- Bus Yard Parking Lot Relocation
- South Pads & Imperial Ramp Electrification
- Roadways, Utilities, & Enabling Projects
- 25L Rehabilitation Project
- CTA Water Distribution Pipe Rehabilitation Phase 1
- Construction of Secured Area Access Post (SAAP) and Enabling Projects
- Bradley West Off-Airport Traffic Mitigations
How to do Business with LAWA

➢ Register on the Los Angeles Business Assistance Virtual Network (LABVN)

➢ Stay up to date with LAWA Outreach Events & Upcoming Procurement Opportunities
  • Evites are sent to firms registered on LABVN & notices are posted on LAWA.org

➢ Stay current on Procurement Opportunities (PDG Procurement Outlook)

➢ Administrative qualifications are just as important as the technical qualifications
  • Meet all contract terms
  • Meet SBE requirements
  • Stay current on invoicing & subcontractor payments

➢ Attend one of the “Doing Business with LAWA” trainings – 1st Wednesdays of the month (December 4, 2019, 9am-11am, at 7301 World Way West, 4th Floor, Los Angeles, CA 90045)
For More Information

Los Angeles World Airports
www.lawa.org

Landside Access Modernization Program
www.connectinglax.com

LAWA Business & Job Resources
www.lawa.org/bjrc/Default.aspx

Los Angeles Business Assistance Virtual Network
www.labavn.org

Procurement Services
procurementrequirements@lawa.org

Outreach Coordinator

Doing Business with LAWA
DoingBusinessWithLAWA@lawa.org
THANK YOU,
ANY QUESTIONS?