Carlsbad Palomar Airport GIS for Asset and Facilities Management

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Introduction

Who we are?
- TDH Associates International
  - Provides asset management GIS solutions
  - FAA registered consultant for the Airport GIS program
  - 25 years of airport experience, including as a pilot
- PSOMAS
  - Over 60 years on geospatial business
  - Multi discipline consulting firm serving public agencies and municipalities
  - Airport clients: LAWA/LAX, PHX, SAN, MKE, GTF

Agenda
- Overview of GIS in asset/facilities management
- Business case for Airport GIS
- Case study: Carlsbad Palomar Airport GIS
Asset and Facilities Management (AFM)

- Multi layer of information category
- Detailed attributes and metadata
- Geospatially referenced
- Management system or applications
- Inventory, monitoring, and maintenance
- Workflow, processes, and protocols imbedded
- Assessment, analysis, and reporting
Business Drivers for Airport AFM-GIS

- Entrusted with geospatial assets: macro & micro
- Entrusted with major economical infrastructure and public safety
- Technology advancement: economical, practical, proven, & expected
- Unified and centralized asset/facility information
- Timely and accurate information and its access
- Data security and management
- Business and operational efficiency
- Ultimately, safe and working airports = efficient business engine = thriving community and happy citizens
The FAA requires airports use GIS

Advisory Circular

Subject: General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards

Date: DRAFT
Initiated by: AAS-100
Change: 1

2012
Large & Medium Hub

2013
Small Hub

2014
Non Hub

2015
Non Primary Part 139
Air side GIS vs Land side GIS

**Air side**
- Aircraft Operating Areas “AOA”
- Navigation facilities and markings
- Airside GIS is mandated by the FAA

**Land side**
- Asset and facilities management
- Non safety critical areas
- Concessions and ground transportation
- Planning and construction
- Land side GIS is not mandated, but desired by airport owner/operators
Carlsbad Palomar Airport GIS Project

Develop an Airport GIS

1. Land side GIS
2. Property and infrastructure data
3. Geo-coded maps, and photos

Provide training and support

1. How to maintain the Airport GIS
2. Additional uses

Carlsbad Palomar Airport
Project Challenges

- Identifying airport operations
- Determining the scope of the Airport GIS
- Determine desired GIS layers
- Data collection and conversion
- Collaboration among agencies
- Access to GIS software/hardware
- Airport GIS user training
Develop Carlsbad Airport GIS layers

1. Collect existing airport drawings (AutoCAD)
2. Collect available GIS shapefiles
3. Review plans, ALUP, and other information
4. Create desired land side shapefiles
   a. Buildings, property, facilities, and fencing
   b. Infrastructure facilities and networks
   c. Internet WIFI hotspots and video cameras
   d. General Aviation FBO's and hangars
   e. Fuel storage facilities and refueling areas
   f. Green spaces and conservation areas
5. Create a GIS base map
FAA Airport GIS Buildings Feature Class
Carlsbad GIS Buildings Feature Class
GIS is ideal for managing the vast information requirements and irregular operations common to airports.
Additional Value of GIS to Airports

- Provides improved situational awareness
- Emergency management and training
- Property management and security
- Model and monitor noise
- Sharing data with other agencies GIS
- Maintain airport historical knowledge base
- Support public and stakeholder participation
- Plan and manage surface transportation
- Ability to access many of the IT systems used at airports
- Track environmental compliance and sustainable reporting
- Preparation of studies, plans, maps, presentations, and marketing
The Big Picture
Moving people safely, efficiently, and timely

- AFM helps meet the many challenges airports face
- FAA mandates using GIS
- Manage irregular operations and emergencies
- Reduce operating costs
- Support operations, planning, and expansion
Questions & Answers

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