EXPLORING EMERGENCY MANAGEMENT SYSTEMS (EMS) AND INTEGRATED TECHNOLOGIES

Moderator:
Frank Barich, Principal Consultant, Barich, Inc.

Speakers:
1. Frank Barich - on behalf of Regina Tennelle, LAX Airport Response Coordination Center (ARCC) Manager, Airport Operations Division
2. Wayne Pennell, Chief Operating Officer, Baltimore/Washington International Thurgood Marshall Airport
3. Ryan Meyer, GIS Coordinator, Mead & Hunt

Airside Technologies
Overview

• **About LAX in 2013**
  o 6th busiest airport in the world
  o 3rd busiest airport in the United States
  o 66.7 Million Annual passengers
  o 1.9 million tons of cargo

• **Active Shooter Incident**
  o November 1, 2013
  o Terminal 3 of Central Terminal Area
  o Heavy passenger traffic and flight operations
  o Incident impacted all terminals, most flight operations, and passenger ingress and egress to airport.
2014 ACI
Business Information Technology Conference
Exploring Emergency Management Systems &
Integrated Technologies
at
Los Angeles World Airports

Presented by: F. Barich
Prepared by: R. Tennelle
The Big Picture

- LAX Responders and Incident Commanders Need:
  - To Maintain Situational Awareness
  - A Current Common Operating Picture
  - To Communicate With Stakeholders
LAWA’s RESPONSE

• Incident Management Protocols
  o NIMS/ICS

• Active Participants
  o Collaborative Response by LAWA Airport Operations, LAWA Airport Police, LAFD, LAPD, and Mutual Aid First Responders, ARCC, and DOC

• Incident Objectives
  o Life
  o Safety
  o Property
  o Security
  o Recovery

Nov 1 – Incident Command Post

LAX Airport Response Coordination Center

LAWA Department Operations Center
Information Flow

During a DOC Activation

**Legend**

- PRIMARY SUPPORT
- MONITOR

**COMMAND POST**
- Tactical Responders
- Unified Command

**PRE-DOC ACTIVATION**

**ARCC**
- Support to CP/Area Command
- Unified Command

**UPDATES**

**DOC**
- Support to CP/Area Command
- DOC Director

**DOC ACTIVATION**
- RESOURCE REQUESTS
- & INCIDENT UPDATES
Information Collection & Management

• ARCC/DOC collects information for dissemination through the following methods:
  o Situation Status Board
  o Common Operating Picture
  o Communications

Incident Description: Loaded Gun at Checkpoint 1
Impact to Operations and Facilities: Low
Impact to Security, Life, Safety: Low
Incident Magnitude: Low
Date & Time of Occurrence: 06-15-11 0907hrs
Narrative: Upon routine vehicle search at Checkpoint 1 Century/Vicksburg, a loaded gun (38 caliber) was found in the back seat of the truck with two minors as passengers.
Current Status: Suspect is in custody
Information Flow to Populate Sit Stat Dashboard

- Long Term Goal - 100% automatic population of Sit Stat Dashboard from electronic systems.
**Sit Stat Information Sources**

- **Weather**
- **MAXIMO** (Utilities, HVAC, Elva, Esc, MWW)
- **Airfield Log**
- **Reports from Parking Contractor**
- **Manual Entry**
- **Observation Manual Entry**
- **OAG Operations Data**

**Long Term Goal** - 100% automatic population of Sit Stat Dashboard from electronic systems.
Displays the impact of the incident on the facility!

Unified Command and Responders need to know what is happening in their area and throughout the airport.

Unified Commanders should be able to make informed decisions about resources based on the location of the incidents and resources used to mitigate them.
Incident Communications

**ARCC Notifications**
- Notify hundreds of stakeholders simultaneously
- Provide public messages about measures for individual safety or operational information
- Status of Incident
- Message is developed in parallel with Public Relations
  - Via [www.lawa.org](http://www.lawa.org)

**Integrated Public Alert Warning System (IPAWS)**
**Wireless Emergency Alerts (WEA)**
- Issued by authorized government administrator.
- Cell Phone Alert within a designated radius
- For users not subscribed to ARCC Notifications.
- Message content provides advisory of airport status
- Emergency use only

**Incident Description:** Loaded Gun at Checkpoint 1

- Impact to Operations and Facilities: Low
- Impact to Security, Life, Safety: Low
- Incident Magnitude: Low

**Date & Time of Occurrence:**
020514 at 0907hrs

**Narrative:**
Upon routine vehicle search at Checkpoint 1 Century/Vicksburg. A loaded gun (38 caliber) was found in the back seat of the truck with two minors as passengers.

**Current Status:**
Suspect is in custody

**Incident Location:**
Century/Vicksburg

**Command Post Location:**
Century/Vicksburg

**Incident #**
11-051897
Emerging Technology for Incident Management at LAWA

eGIS & SAMS

**Users**
- LAWAwide
  - Airport Operations
  - Facility Management
  - Engineering
  - Commercial Development Group
  - Airport Police

**OutputS**
- Maps
- Floor plans
- Drawings

**Users**
- ARCC/DOC/ICP
  - Incident Management Support
  - Situational Awareness
  - Common Operating Picture
  - Incident Reporting

**System Sensors**

**Police Dispatch**

**CCTV**

**Information Sharing Tools**

**eGIS**

**SAMS**

**Airfield Log**
LAWA IMTG Partners With The Division Technology Users To

• Learn About The User’s Business Needs And Processes
  o Users Should Provide IT With A Thorough Concept Of Operations

• Review Available Solutions To Meet The User’s Needs

• Procure And Implement The System To Best Meet The User Needs

• Ensure The Procured Technology Is Complemented With The Business Processes To Maximize The Use Of The New Technology.

• Allow For Burn In Of The New System To Address Processes And Make Adjustments.
Questions

For more information or request a visit to the LAX Airport Response Coordination Center:

Contact Regina Tennelle
RTENNELLE@LAWA.ORG
ACI-NA BIT Conference
Wayne S. Pennell
Chief Operating Officer
April 16, 2014
BWI Marshall Overview
State Operated Airports
BWI Marshall

- 23rd Busiest Airport in the United States in 2012
- 3,596 acres
- Four Runways
- Approximately 750 daily takeoffs and landings
- 365 daily departures to 77 nonstop destinations
- Average of 61,500 passengers per day
MAA Mission

To foster the vitality of aviation Statewide, and promote safe and efficient operations, economic viability, and environmental stewardship.

VISION

The Maryland aviation system will be the "Easy Come, Easy Go" gateway to the world.

- Approximately 500 Employees - State
- 11,000 Badged employees
## Business Overview

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<table>
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<tbody>
<tr>
<td>BWI Airport Generated Jobs</td>
<td>21,155</td>
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<tr>
<td>BWI Generated Personal Income</td>
<td>$1.3 billion</td>
</tr>
<tr>
<td>BWI Generated Business Revenue</td>
<td>$2.3 billion</td>
</tr>
<tr>
<td>Visitor Generated Jobs</td>
<td>72,636</td>
</tr>
<tr>
<td>Visitor Generated Personal Income</td>
<td>$2.3 billion</td>
</tr>
<tr>
<td>Visitor Generated Business Revenue</td>
<td>$3.3 billion</td>
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<tr>
<td><strong>TOTAL JOBS</strong></td>
<td>93,791</td>
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<tr>
<td><strong>TOTAL PERSONAL INCOME</strong></td>
<td>$3.6 billion</td>
</tr>
<tr>
<td><strong>TOTAL BUSINESS REVENUE</strong></td>
<td>$5.6 billion</td>
</tr>
</tbody>
</table>
Integrated Technologies for Emergency Management Systems

- Emergency Communicator System
- IASS
  - CCTV, CASS, CANS, Biometrics
- Consolidated Dispatch Center
- 800Mhz Digital Trunked Radio System
- Emergency Operations Center(s)
  - GIS applications
  - Web Portal
- Signage – FIDS, DVMS
Partners in Emergency Situations

- BWI Marshall Employees
- MdTA Police
- US Customs and Boarder Protection
- TSA, Homeland Security Investigators
- FBI (Joint Terrorism Task Force)
- MD State Police
- County Police
- FAMS (Fed Air Marshalls)
- FRD Mutual Aid Partners
- Airport Stakeholders (air carriers, concessions……)
Emergency Communicator System

• Provides time of day based emergency notification & response call up (database includes emails, work, home & cell phones)

• Allows for secure message delivery, positive confirmation of message, yes/no can respond and ETA to emergency site.

• System is integrated with the CDC to send automatic messages to first responders............
Public Address System

• The BWI terminal paging system is configured for emergency management and evacuation notification

• System was modified providing Emergency Paging access points throughout the terminal for public concession spaces

• Evacuation paging is accomplished from CDC, Landside OPS, Operations Center and ARFF

• Emergency paging is broadcast at 10 db’s over standard paging announcements & shunts other audio sources in the area
Integrated Airport Security System (IASS)

• $28M project – Completed mid – 2013 replaced all BWI security systems & 7 disparate TSA CCTV systems
• One of the first full security platforms in the country fully integrating CCTV, CASS, and Identity Mgt.
• Built from the ground up to function as one unified system
• Fully redundant platform and recording at primary and off campus backup site
IASS cont’d…

- Replaced 191 security doors & portals
- 700 + CCTV Cameras
- 900 + Card readers
- Secure Web portal for badge applications
- Integrated w/Fire alarm system
- Added Biometric Readers
  - Deployed at critical infrastructure
  - Operationally sensitive areas only
  - Adds additional layer of authentication to ensure continuity of operations during “Imminent Threats”
The Concourse Alert Notification System (CANS) is a law enforcement, airport, TSA, air carrier and tenant incident notification system (e.g. active shooter, IED at checkpoint, breach at checkpoint/exit lane, etc.). These systems are under camera surveillance.
IASS cont’d…

The CANS consists of a Duress alarm (silent) and a Breach (red strobe & audio/visual) alarm system.

The duress (yellow) alarm is a silent alarm similar to a bank robbery alarm.

The breach (red) alarm requires that law enforcement respond to that location immediately. Equally important, activation requires that partners take specific actions to mitigate the incident (usually a shared response).
Consolidated Dispatching Center

• $5.2M project upgrading all public safety systems in the CDC
• Completed mid - 2013
• Included emergency call taking, dispatching & fire station alerting systems
• 5 Consoles in primary site with 3 in back up site
Consolidated Dispatch Center……

- Fully Integrated w/IASS, Emergency Personnel Notification System, BWI Fire Alarm & MD State Police system for criminal history checks
800 Mhz Digital Trunked Radio System

• Highly redundant two site, multi-cast system
• 10 Radio consoles dispersed across the airport
• Approx 1000 users & 200 Talk groups
• Interoperability with four primary mutual-aid partners:
  • Anne Arundel County, Baltimore City, Baltimore County & Howard County.
• Interoperability with central Maryland Regional System “CMARC”
• Interoperability with Md statewide system “MD1ST”
• Interoperability with Maryland Emergency Management Agency “MEMA”
• Interoperability with FAA Air to Ground system
Emergency Operations Center - EOC

- 3 EOC locations: Terminal, FRD, Ops Conf Room
- Designed for NIMS structure
- 800 Mhz System
- Variable message signage, overhead, mobile, FIDS
- AIRPortal GIS Applications
EOC cont’d...GIS

• Provides value to a multitude of airport stakeholders

• Valuable tool during emergencies
  – Records at your fingertips

• Authoritative point of access to data & applications

• Facilitates data sharing and collaboration

• Increases Efficiency
  – Facilitates doing more with less

• Integrates consultants into processes
EOC cont’d…

• Critical infrastructures in GIS Mapping

• Floor plans, mechanical, electrical & bldg systems “as-built” drawings

• Available via a secure public facing web portal
QUESTIONS?
EXPLORING EMERGENCY MANAGEMENT SYSTEMS (EMS) AND INTEGRATED TECHNOLOGIES

- What is GIS
- ACRP
- Report 88
- Process to make plan
- Tools to make plan
- Examples of implementation

ACRP Report 88
WHAT IS GIS?

Maps and databases linked together by their spatial relationship
WHAT IS GIS?

- **Hardware**
  - The computer, peripherals, and sometimes servers on which the GIS operates

- **Software**
  - Provides the functions and tools required to store, analyze, and display data

- **Data**
  - Data is stored as vector, raster, or attribute data

- **Methods**
  - The guidelines, specifications, standards, and procedures for collecting and analyzing data and applying GIS

- **People**
  - GIS needs people to ask the questions; choose, collect, and analyze the data; and interpret the results
WHAT ELSE IS GIS?

A means to link data and integrate different technology
AIRPORT COOPERATIVE RESEARCH PROGRAM (ACRP)

- Part of Transportation Research Board (TRB)
- Research proposed by Industry
- Looking for Panel Members
- All free for use

www.TRB.org/ACRP
Guidebook on Integrating GIS in Emergency Management at Airports
ACRP REPORT 88
GUIDEBOOK ON INTEGRATING GIS IN EMERGENCY MANAGEMENT AT AIRPORTS

Project Panel

- Ian A. Redhead, Kansas City International Airport, Kansas City, MO (Chair)
- Steve Cahill, Rhode Island Airport Corporation, Warwick, RI
- Elizabeth A. Hendel, Phoenix Fire Department, Phoenix, AZ
- Jeannette Hilaire-Stoufer, Denver International Airport, Denver, CO
- Vijji Prasad, Los Angeles World Airports, Los Angeles, CA
- Michael Stever, Utah Department of Health, Salt Lake City, UT
- Chris Oswald, Airports Council International—North America Liaison
- Thomas Palmerlee, TRB Liaison

Research Team

- Barich, Inc.
- Aviation Innovation, LLC
- C & M Consultants, LLC
- Mead & Hunt, Inc.
ACRP REPORT 88 OBJECTIVE

1. Outline the capabilities of GIS with respect to emergency management
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2. Examine the benefits, costs, and challenges associated with integrating GIS into emergency management for airports and their mutual aid partners
ACRP REPORT 88 OBJECTIVE

1. Outline the capabilities of GIS with respect to emergency management

2. Examine the benefits, costs, and challenges associated with integrating GIS into emergency management for airports and their mutual aid partners

3. Provide guidance on implementation and use of GIS to support emergency management.
WHY A GUIDEBOOK?

- Technology changes
- No one size fits all solution
- Worksheets and tools to build your own plan
WHAT YOU GET

- Plan to execute
  - Prioritize
  - Understanding of systems, data and people related to EM core mission
  - Budgeting tool

- Living document

- Major sections outline integrations and plan

- Continuous improvement
WHAT YOU GET

- Plan to execute
  - Prioritize
  - Understanding of systems, data and people related to EM core mission
  - Budgeting tool

- Living document

- Major sections outline integrations and plan

- Continuous improvement

- Accumulation of individual accomplishments and planned integrations
HOW YOU GET IT

Create Big Picture

Assess Current State

Develop Roadmap

Execute Solution

Build on Foundation
TOOLS INCLUDED TO BUILD YOUR OWN PLAN

- Word Document included with the ACRP material
- Sections with text and <Airport Name>
- Modify for your needs
<table>
<thead>
<tr>
<th>Topic</th>
<th>Last Update</th>
<th>Expected Update</th>
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</thead>
<tbody>
<tr>
<td>Leadership / Stakeholder List</td>
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<tr>
<td>Vision Statement Development Guide</td>
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<tr>
<td>GIS-EM Integration Committee List</td>
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<tr>
<td>Airport Emergency Event Assessment Tool</td>
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<td>GIS Availability and Accessibility Tool</td>
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<td>Emergency Management Environment Tool</td>
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<td>GIS-EM Integration Tool</td>
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<td>GIS-EM Skills Integration Tool</td>
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<td>Resources Cost Considerations and Budget Tool</td>
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<td>Assessment/Auditing Tool</td>
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<td>GIS-EM Collaboration / Integration Workshop Tool</td>
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<td>Integration Functional Requirements Tool</td>
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<td>Hardware/Software/Network Resources Tool</td>
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<td>Data Model Tool</td>
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<td>Application Development Tool</td>
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<td>Continuous Improvement Checklist</td>
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Tool 3-1. Airport Emergency Event Assessment Tool.

Instructions: Pick a recent small, intermediate, and large event and analyze how the events were handled—from both GIS and emergency response perspectives—across all four EM phases. Consider the hazards identified in your airport’s AEP in your assessment.

<table>
<thead>
<tr>
<th>Scenario:</th>
<th>Event Size: Small</th>
<th>Intermediate</th>
<th>Large</th>
<th>Event Type: Historic Event Simulated Event</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>GIS</td>
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<td>EM</td>
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<tr>
<td>1. Mitigation/Planning Phase (Before an Event)</td>
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<tr>
<td>- Has this type of event been previously identified?</td>
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<td>- Are historic events like this documented?</td>
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<tr>
<td>- What considerations about potential regulations need to be addressed?</td>
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<tr>
<td>- What tools and technology will be used?</td>
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<td>2. Preparedness Phase (Before an Event)</td>
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<tr>
<td>- How well have plans been formulated to address these events?</td>
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<tr>
<td>- Assess and report on how you meet or need to comply with current regulations related to these events.</td>
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<tr>
<td>- What considerations about potential regulations need to be addressed?</td>
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<td>3. Response Phase (During an Event):</td>
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<tr>
<td>- What was handled well?</td>
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<tr>
<td>- How could response have been improved?</td>
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<tr>
<td>- Could GIS have helped in the response effort?</td>
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<td>4. Recovery Phase (After an Event):</td>
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<tr>
<td>- Were any best practices identified?</td>
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<tr>
<td>- What lessons were learned?</td>
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<td>- What action items have been identified and assigned?</td>
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</table>
COP Collaboration Table-Top Exercise
Planning and Preparation Process

**Establish Table-Top Parameters**
- Time & Duration
- Location
- Method to Capture Information
- Method of Facilitation

**Determine Incident**
- Actual Incident (recent)
- Actual Incident (historical)
- Hypothetical incident

**Identify Participants**
- Stakeholders engaged in the incident
- Stakeholders that should have been engaged but were not
- Stakeholder that maybe should have been engaged but wasn’t

**Develop Incident Milestone Steps**
- Major steps conducted during incident
- Determine steps where communication is required
- Determine steps where a stakeholder may engage

**Develop Questions**
- What GIS Data/Information was used
- What GIS Data/Information was available
- What GIS Data/Information would be beneficial

**Prepare Matrix**
- Questions (rows)
- Milestone steps (columns)

**Conduct Table-Top Exercise**
- Examine each milestone step
- Respond to questions
- Capture responses
CITY OF PHOENIX COLLABORATION CASE STUDY

- Identified existing GIS technology not utilized during the event
- Idea for distributing GIS data when incident reported to create a common operating picture of the incident
- Departments shared what data resided in Aviation GIS that they would like to have in their systems
GUIDEBOOK TOOLS LIST

- GIS – EM Integration Vision
- GIS Availability and Accessibility
- Emergency Management Environment
- List of Current Integrations
# Listing of GIS-EM Skills

<table>
<thead>
<tr>
<th>Name</th>
<th>Agency</th>
<th>Department</th>
<th>Role</th>
<th>GIS-EM Skill 1</th>
<th>GIS-EM Skill 2</th>
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**Notes:**

1. Individual GIS-EM skills columns need to be created for your airport. Potential GIS-EM skills include Desktop GIS editor, EOC GIS user, Fire MDT command user. People from multiple agencies that perform and support EM for the airport should all be listed as resources.
2. Further customize the Skills Availability tool as needed. Other columns to consider include employment status, contract end date for contract employees, 24-hour availability, and on-call status.
3. Additional Skills: Please check and list special skills or resources you feel would be an asset in an emergency situation.
BUDGET

- List costs and the agency or department responsible
- Ancillary benefit and zero-cost items should be listed

<table>
<thead>
<tr>
<th>COST ITEM</th>
<th>AGENCY</th>
<th>ONE TIME COST</th>
<th>RECURRING COST</th>
<th>RECUR FREQ</th>
<th>ITEM DETAIL</th>
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<td>Software</td>
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<tr>
<td>Staff</td>
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<tr>
<td>Services</td>
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</tbody>
</table>
**GIS-EM COORDINATION/INTEGRATION WORKSHOPS**

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**GIS-EM COORDINATION / INTEGRATION WORKSHOP TOOL**

Please modify this table as appropriate for your needs, and add additional rows as necessary.

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<th>Date</th>
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<th>Description</th>
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INTEGRATION REQUIREMENTS TOOL

- Describe integration in plain text
- Identify data needs
- Functional Requirements
- Non-functional Requirements
- Hardware/Software/Network Resources
DETAILED REQUIREMENTS TOOL

- More information for complex or near-term projects
- Not needed for each integration
- Look to Airport IT for direction
SIMPLIFIED DATA MODEL

- Detailed listing of the data
- Map layers and non-spatial data included
- Capture information about the data for “High-level” understanding
SIMPLIFIED DATA MODEL

- Unique ID
- Name
- Description
- Source
- Update Frequency
- Update Responsibility
- Users
- Access rights
- Security
- Sharing
- Metadata
ASSESSMENT AND EVALUATION TOOL

- Log the results and the process
- Important part of plan
<table>
<thead>
<tr>
<th><strong>ASSESSMENT / AUDIT TOOL</strong></th>
<th><strong>Consideration</strong></th>
<th><strong>Audit</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEFINE</strong></td>
<td>What was the purpose of the integration?</td>
<td></td>
</tr>
<tr>
<td><strong>BENEFITS</strong></td>
<td>List benefits of integration.</td>
<td></td>
</tr>
<tr>
<td><strong>DEPENDENCIES</strong></td>
<td>List dependencies of integration.</td>
<td></td>
</tr>
<tr>
<td><strong>COST</strong></td>
<td>What direct costs were incurred for integration?</td>
<td>Is there added maintenance cost or administrative time because of this integration?</td>
</tr>
<tr>
<td><strong>MAINTENANCE</strong></td>
<td>What will be the required level of existing staff commitment during the data preparation and GIS construction process?</td>
<td>How long is this expected to remain active, is there a retirement date for this integration?</td>
</tr>
<tr>
<td><strong>STAFF</strong></td>
<td>Who will use this integration?</td>
<td>Who administers this application?</td>
</tr>
<tr>
<td><strong>HARDWARE/SOFTWARE/NETWORK</strong></td>
<td>How is the integration accessed?</td>
<td></td>
</tr>
<tr>
<td><strong>EVALUATION</strong></td>
<td><strong>Consideration</strong></td>
<td><strong>Assessment</strong></td>
</tr>
<tr>
<td><strong>BENEFITS</strong></td>
<td>Was the integration written as specified?</td>
<td>Does this make a portion of EM more efficient?</td>
</tr>
<tr>
<td><strong>COST</strong></td>
<td>Does more need to be done to make this function as needed?</td>
<td></td>
</tr>
<tr>
<td><strong>MAINTENANCE</strong></td>
<td>Is data current?</td>
<td></td>
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<tr>
<td><strong>STAFF</strong></td>
<td>Is additional training needed?</td>
<td>Is additional staff time needed to operate?</td>
</tr>
<tr>
<td><strong>HARDWARE/SOFTWARE/NETWORK</strong></td>
<td>Will this integration tax the existing technology infrastructure?</td>
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</tbody>
</table>
CONTINUOUS IMPROVEMENT

- Revisit the plan regularly
- Move items from plan to integration when implemented
- Evaluate integrations
- Incorporate new items
  - Ideas
  - Staff
  - Data
  - Hardware/Software/Infrastructure
- Reprioritize
<table>
<thead>
<tr>
<th>Topic</th>
<th>Last Update</th>
<th>Expected Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership / Stakeholder List</td>
<td></td>
<td></td>
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<tr>
<td>Vision Statement Development Guide</td>
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<tr>
<td>GIS-EM Integration Committee List</td>
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<tr>
<td>Airport Emergency Event Assessment Tool</td>
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<tr>
<td>GIS Availability and Accessibility Tool</td>
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<td>Emergency Management Environment Tool</td>
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<td>GIS-EM Integration Tool</td>
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<tr>
<td>GIS-EM Skills Integration Tool</td>
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<tr>
<td>Resources Cost Considerations and Budget Tool</td>
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<tr>
<td>Assessment/Auditing Tool</td>
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<tr>
<td>GIS-EM Collaboration / Integration Workshop Tool</td>
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<tr>
<td>Integration Functional Requirements Tool</td>
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<td>Hardware/Software/Network Resources Tool</td>
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<tr>
<td>Data Model Tool</td>
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<td>Application Development Tool</td>
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<tr>
<td>Continuous Improvement Checklist</td>
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</tbody>
</table>
EXAMPLES OF IMPLEMENTATION

SEATAC — ease of data entry — UPDATE: React to tech changes
SEATAC — Custom Emergency Management GIS toolbar on desktop GIS
Port of Portland — Integrated data management for one set of data
PHX — Data sharing with COP PD
PHX — FieldPort, MapPort, E-Sponder mapping, inspections, location testing, WebEOC
Lexington County, SC EMS — ROI-based AVL, predictive analytics