Effective Strategies for Enterprise Facility Assessment Programs

Lance Marrano
Program Manager, Sustainment Management Systems
USACE, Engineer Research & Development Center

Alain Bernier
Chief, Infrastructure Assessment Branch
USACE, Fort Worth District

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Focus / Objective

To share lessons-learned and best practices for enterprise assessment programs

- Consistent - even across multiple teams
- Efficient - look for opportunities to perform multiple assessment
- Low impact – get in/get out
Outline

- Scope/Background
- Pre-Visit Preparation
- Site Visit
  - Visit Initiation
  - BUILDER™ Sustainment Management System
  - Quality Control
- Post-Visit Activities
  - Quality Assurance
- Conclusions
CASE STUDIES

SCOPE/BACKGROUND
Defense Logistics Agency

- **Scope**
  - Real Property Inventory (RPI) for CFOA readiness
  - Facility Condition Assessments
    - Includes Accessibility, Fire Protection, and Energy Screening
  - Environmental Assessments (added)
  - 885 locations worldwide

- **Schedule**
  - 1st Acceleration: Complete by Sep 2015
  - 2nd Acceleration: Complete by Sep 2014

- **Challenges**
  - Limited on-site facility personnel
  - Large number of locations
  - 1 week time limit for all visits

- **Accomplishments**
  - 436 Site Visits / 13,663 assets / 106 million SF completed as of 30 Jun 2013
US Air Force

- **Scope**
  - Conduct assessments (RPI, FCA/RPIE, EAII/HPSB, Space Utilization)
  - 68 Installations (12 overseas)
    - Options pending for 27 additional installations

- **Schedule**
  - Oct 2012 – Dec 2014

- **Challenges**
  - Breadth of information required
  - Scope / Timetable of requirement

- **Accomplishments**
  - Site visits completed – 40
  - Real Property Inventory – 19,318 facilities visited
  - Energy Audit Level II – ~29M SF
  - Facility Condition Assessments – ~62M SF
  - Real Property Installed Equipment – ~53.8M SF
  - Space Utilization – ~28M SF
Customs and Border Protection

- **Scope**
  - Conduct Facility Inventory and Condition Assessments at current GSA-owned Land Ports of Entry (LPOEs)
  - 102.5 LPOEs in 7 regions

- **Schedule**
  - Phase I (Pilot) – 18 sites in 2 regions (FY 2012)
  - Phase II – 84.5 sites in 5 regions (FY 2013)

- **Challenges**
  - Scope/Schedule of requirement

- **Accomplishments**
  - Field work completed on all sites
  - Reports to be completed by 15 Oct 2013
PRE-VISIT PREPARATION
Pre-Visit Coordination

- **Production Office**
  - Program Manager, site coordinators and support team responsible for preparation, execution, and follow up
  - Number of coordinators determined by number of simultaneous site visits

- **Schedule**
  - 90-day trigger
  - Notification – Local Installation and enterprise resources
  - Resourcing (right sizing)
    - Asset counts determine size / team count
    - Enterprise pool of resources
  - Itinerary

- **Team Makeup**
  - Site Coordinator
  - Site Lead for each product line
  - QA Lead for each product line
  - Assessment Members
Pre-Visit Coordination (cont’d)

- **Coordination / Logistics**
  - Identify required support from installation
    - In-brief / Out-brief
    - Conference room(s) for team “command center”
    - Security officer
    - Building access - mechanical room(s), roof(s), etc.
    - Camera passes
    - Goal is to minimize demands on local personnel
    - Special security or process considerations

- **Travel orders/transportation(ground & air)/lodging**
  - Consolidate rentals to minimize costs
    - SUVs are good choices for multiple team member plus luggage plus gear
  - Coordinate team arrivals to support consolidation
  - Reduce lodging costs with room blocks

- **Prepare as much information on the assets as possible**
  - Maps / GIS
  - Facility List/Execution Plan (“Tracker”)

Pre-Visit Coordination (cont’d)

- Coordination / Logistics (cont’d)

  Be Self-Sufficient
  - Consider capabilities of site to support assessment team
  - “Battle Boxes” contain networking, input and output equipment, office, and field supplies

  Identify most economic solutions for contingencies
  - OT discussions
  - Split teams
  - Team to Team coordination (refer to master schedule)
  - Flexibility – ability to adjust on the move (site coordinator’s function)
Site Visit

Schedule

- Short visit schedules may require travel on Sunday in order to position team

Orientation Meeting on preceding evening

- Team introductions
  - Site Coordinator, Planner(s), Team Leads and supporting resources
- Set departure time to meet at gate and receive passes
- Discuss process document
- Conduct safety orientation
- Distribute maps, trackers, POC List
- Discuss latest lessons learned
- Daily Reporting Requirements
- Team breaks into disciplines to perform detailed planning and adjourns
Site Visit (cont’d)

- **On-site Coordination with Installations**
  - After receiving gate passes, meet at designated work room
  - Introduce team to installation staff, receive camera passes, security orientation from security officer & share contact information
  - Site Coordinator performs in-brief to Command

- **Team Make Up**
  - One Assessor Team Lead per product line per site visit
  - Multiple Assessor “Cells” per team
  - 3-5 members per cell, depending upon assessment rqmts.
    - Typically includes architect, mechanical, electrical, etc.
  - Cell Lead typically cross-trained
**Orientation Meeting**

- Team is to meet at designated hotel for orientation meeting.
- Team splits accordingly with the installation PoC subject matter experts to discuss assets.
- Project Coordinator distributes & discusses process, trackers, agenda, maps, Engineering drawings, etc.
- Project Coordinator covers concerns, transportation, issues, safety & security for Installation(s).
- Team meets at installation the following morning.
- Support staff to create sign-in of all participants, upload to SharePoint.

**On-Site Pre-Assessment Actions**

- Teams will need to meet with subject matter experts in the field according to their corresponding areas of expertise:
  - Real Property team to meet with RPAO to reconcile tracker and gather asset files, leases, permits, ISSAs, etc.
  - Environmental team to meet with base ENV Manager to discuss existing ENV documents, OWSS, hazards, endangered species, etc.
  - Real Property team & base POL Mgr to discuss asset files, leases, permits, ISSAs, tracker reconciliation, etc.
  - Real Property team to meet with base RPAO to discuss asset files, leases, permits, ISSAs, tracker reconciliation, etc.
  - Fuels team to meet with base POL Manager to discuss capitalized fuels, OWSS, potential improvements, run-offs, etc.
  - Fuels team to meet with POL Manager to discuss capitalized fuels, OWSS, potential improvements, run-offs, etc.
  - Conditions Assessment team to meet with base Civil Engineer / Facilities Manager (if available) to discuss roof hatch & mechanical room.
  - Conditions Assessment team to meet with base Civil Engineer / Facilities Manager (if available) to discuss roof hatch & mechanical room.

**Assessment Actions**

- Upon daily completion of inventory assessment, teams are to meet back at the designated location.
  - Real Property and Environmental to accompany Fuels assessment team to reduce redundancy.
  - Teams to update site visit tracker and annotate all FOS assets.
  - Teams to ensure that all FOSs have been assessed.
  - Real Property and Condition Assessments to follow photo requirements on base. Potential necessity to have installation security verify all photos.
  - Real Property to rename pictures according to procedural requirements.
  - Asset Files and Pictures to be copied via removable storage media.
  - Teams are to report any life safety issues encountered immediately.

**Inventory Assessment Completion**

- Project Coordinator is to brief the installation upon completion of site visit.
  - If out-brief is required, support staff will aide Project Coordinator in consolidating team data into a PowerPoint presentation.
  - Template designed for Out Briefs.
  - Reiterate safety issues to installation PoCs.
  - If deliverables are promised to Installation PoCs, Project Coordinator will head off on this task within the agreed upon timeframe.
  - Project Coordinator thanks installation PoCs.
SITE VISIT
Facility Managers’ Need

**Engineered Asset Lifecycle Management Tools**

Provide investment guidance to:

- **Objectively** assess infrastructure across the enterprise
- **Consistently** analyze investment requirements and prioritize scarce resources
- **Track** investments to ensure key stakeholder requirements are addressed
- **Forecast** the investment requirements for budget defense and course of action analysis

**Assessment**
- Determine Condition of Asset Portfolio

**Analysis**
- Compare current condition against mission requirements

**Prioritization**
- Invest to ensure mission readiness and maximize ROI

**Execution**
- Based upon priorities and availability, fund and execute.
Process

- **Inventory**
  - Real Property Inventory
  - Component Inventory

- **Assessment**
  - Condition Assessment
  - Functionality Assessment

- **Prediction**
  - CI Prediction

- **Work Planning**
  - Work Generation
  - Work Prioritization

- **Forecasting**
  - Course of Action (COA) Analysis
Inventory

- Performed once, with initial assessment
- Supports DPW tactical actions (e.g. replace roof, repair doors, replace HVAC, etc.)
- Group assets for lifecycle investment management, reduces assessment requirements
- Immediately supports asset performance predictions
Condition Assessment

Capture the lifecycle rating of an asset

► [Performance] Requirements may change, but measurement should be constant
► Inspectors are “human sensor” and do not provide opinion/interpretation
► Models the rating given by an expert based upon engineering principles for consistency across an organization
► Assessment frequency and level-of-detail are tailored to mission risk and lifecycle condition (Knowledge Based Inspections)

Traditional

Deficiency:
Work Quantity:
Scoping Factors:

Re-point brick retaining wall
200 SF and 12 LF
3

Work is the input

Work Quantity: $4400
Urgency/Priority:

Distress Type(s):
Severity Level(s):
Quantity/Depth:
Condition Index (calc.):

Deteriorated and Cracked
Low and Med
200 SF and 12 LF
72

Work is the output

SMS

Deteriorated and Cracked
Low and Med
200 SF and 12 LF
72
Condition Prediction

Adaptive model predicts performance of each unique asset; identifies best time to invest
Work Generation

**Standards**
Generic threshold definitions that trigger investments for assets that fail to meet performance level.

**Policies**
Rules to apply different standards to different assets.

**Work Plan**
Generate repair and replace work items for assets failing to meet assigned standards. Estimate costs and optimize ROI.

**Prioritization**
Score each work item according to enterprise metrics for risk, consequence, financial benefit, etc. Rank highest to lowest score.

**Budget**
Budgeting can identify funding sources and create rules for how the work plan items use the funds.

Enterprise-defined rules generate consistent requirements Service-wide
Forecasting

What-If capability allows changing inventory, policies, prioritization, funding, and forecast period to determine different outcomes. Supports:

- Budget Creation
- Budget Defense
- Course Of Action Analysis
- Out-year strategic condition trends

► Will levels meet current mission requirements?
► Will levels meet future mission requirements?

Impact on Portfolio of Funding at 90%, 70% and 50% of the Requirement

**Actionable intelligence built from the asset up**
Quality Control

SITE VISIT
Quality Control

Conduct “all-hands” meeting at end of day
- Inter-team communication (phones/radios) can be challenging
- Share accomplishments, data, and lessons learned between teams
- Determine next day’s activities
- Report safety concerns to installation, if any

Monitor data collection
- Leverage QC reports to monitor field collection live
- Establish and review data against guidance
  - Naming/labeling conventions (inventory, locations, equipment, etc.)
  - Assessment requirements
- Establish fallback guidance for inventory and condition assessment when site conditions don’t allow for data collection
Quality Control

- Conduct AAR meeting after each visit
  - Identify follow-up issues before they are lost
  - Identify new lessons-learned early
  - Resolve issues & reinforce guidance before next visit
- Conduct regular lessons-learned discussions with entire team
  - Quarterly schedule
  - Conduct by product line
  - Share organization news with external teams too
Post-Visit Activities

- Assessment team(s) QC data before finalizing for review
- Produce “output”
  - Reports
  - Action Plans
  - Investment Plans
- Workflow/Tracking vital to ensuring completion
  - SharePoint/InfoPath used for DLA program
- Perform QA with review team 60-90 days after site visit
Teams Provide Project Coordinator with data collected from site visit

Real Property team consolidates data from site visit and provides data to Project Coordinator

Fuels team uploads tracker, contact info, maps, trip report and all pre-site visit info to SharePoint

Conditions Assessment team consolidates data from Site visit and provides data to site coordinator

Project Coordinator ensures tracker updated to reflect data collected by all disciplines

Lessons Learned to be processed by home support. LLS turn into Action Items and feeds into Process

Environmental team uploads Photo Log and Condition of Property Report to SharePoint

Real Property team uploads documents (asset files, photos, etc.) to SharePoint

Site Coordinator collects asset files and sends them to the installation upon completion (if requested)

Site Coordinator writes thank you letters to installation

Project Coordinator writes trip report and updates site coordinator Worksheet (P2)

Site Coordinator Post-Deployment tasks

- Send battle boxes back to home duty station
- Make list of what needs to be replaced in battle boxes
- Update/Upload SharePoint with necessary documentation
- Get with each discipline and make sure reports are uploaded to SharePoint
- Email district brief summary and appreciation
- Email Installation final reports
- Send thank you letters to installation
- Lessons learned update
- Process update

Deliverables

- Installation Maps with required data
- Building Plans
- Updated Tracker
- In/Out Briefings
- Project file structure set up in SharePoint
- Upload all required documents to SharePoint
- Lessons Learned
- POCs information from Installation

Site Coordinator Post-Site Visit

Site Coordinator thanks local PoCs and collects contact info on Site

Project Coordinator thanks local PoCs and collects contact info on Site

Environmental Team consolidates data from Site visit and provides data to Project Coordinator

Environmental team uploads Photo Log and Condition of Property Report to SharePoint

Project Coordinator collects Lessons Learned from teams

Lessons Learned to be processed by home support. LLS turn into Action Items and feeds into Process

Real Property team consolidates data from Site visit and provides data to Project Coordinator

Real Property team uploads documents (asset files, photos, etc.) to SharePoint

Fuels team uploads Deficiency Summary Report to SharePoint

Fuels team uploads Deficiency Summary Report to SharePoint

Conditions Assessment team consolidates data from Site visit and provides data to site coordinator

Conditions Assessment team uploads Assessment & Deficiency reports To SharePoint

Site Coordinator ensures that all data from all disciplines is uploaded to SharePoint in a timely matter
Quality Assurance Review

- Allow reviewers to quickly identify data which need closer inspection and data review

- Run reports multiple times until all exceptions are removed, or approved

- Report Examples
  - Missing/Low Inventory in Facilities
  - Inventory Classification Exceptions
  - Inventory Naming Discrepancies
  - Inventory Quantity and Age Exceptions
  - Missing/Low Equipment
  - Missing/Low Equipment Images
Quality Assurance (cont’d.)

▪ Report Examples (cont’d)
  ▶ Sections with Missing Inspections
  ▶ Equipment with Missing Inspections
  ▶ Inventory/Equipment Discrepancies
  ▶ Missing Inspection Information
  ▶ Inventory Condition Analysis Exception Report
    • Initial Condition Discrepancies
    • Abnormal Adjusted Service Life (too short or too long)
  ▶ Inspector Trend Matrix
    • Detect inspector skew

🗝️ Don’t forget inter-product reviews!
CONCLUSIONS
Conclusions

- Establish a Program Office
  - Oversees program
  - Centralize logistics
  - Responsible for Quality Control / Assurance
- Leverage regional and local assessment resources to reduce logistics costs
- Regularly share updates and lessons-learned with assessment team
- Implement QA Reports on field data to call out exceptions to data standards
  - Leverage lifecycle data to detect when assessment results are out of range

Multiple assessment teams can produce consistent results
More Information

Mr. Lance Marrano
_SMS Program Manager_
ERDC-CERL
Champaign, IL
(217) 373-4465
lance.r.marrano@usace.army.mil

Mr. Alain Bernier
_Chair_
Infrastructure Assessment Branch
Ft. Worth, TX
(817)
alain.j.bernier@usace.army.mil

http://sms.cecerc.army.mil
- SMS Resources

http://www.erdc.usace.army.mil
- Installation Operations (more products and expertise from the Engineer Research & Development Center)

http://sites.nationalacademies.org/DEPS/FFC/DEPS_047399
- Previous BUILDER presentation to FFC Operations & Maintenance Committee (MAR 2012)