THE RIGHT MAINTENANCE ON THE RIGHT EQUIPMENT AT THE RIGHT TIME: GETTING IT RIGHT THE FIRST TIME AROUND
OUTLINE

• The Smithsonian Institution
• The Database: More efficient, Less cumbersome
• What do we own and where are they?
• What is the condition of our assets?
• Is everything critical?
• Right equipment, Right Maintenance
• Continuous learning, continuous improvement
• Our challenges
THE SMITHSONIAN INSTITUTION

• The world’s largest museum, education, and research complex.
  • SI is a diverse complex of 21 museums
  • 21 libraries
  • The National Zoo
  • 157.2M Museum objects and specimens
  • 2.2M Library Volumes
  • 148,200 cubic feet of artifacts
  • Numerous education and research centers across the United States and in other US jurisdictions.

• SI Facilities are managed and maintained by the Office of Facility Maintenance and Reliability (OFMR).

• Approximately 40,000 assets in the buildings are maintained by OFMR

The Right maintenance on the Right equipment at the Right time.
THE SMITHSONIAN INSTITUTION

OUR PURPOSE
• The increase and diffusion of knowledge.

OUR VISION
• The Smithsonian will build on its unique strengths to engage and to inspire more people, where they are, with greater impact, while catalyzing critical conversation on issues affecting our nation and the world.

• OUR CUSTOMERS
• The visitors
THE DATABASE: MORE EFFICIENT, LESS CUMBERSOME

• TRIRIGA is the CMMS used to store SI asset information.
• There are approximately 40,000 assets stored in the database.
• OFMR Asset Management Division is tasked with coordinating activities on behalf of OFMR to attain maximum value for SI assets, increase their value to stakeholders and achieve SI’s organizational objectives.
WHAT DO WE OWN AND WHERE ARE THEY?

ASSET INVENTORY VERIFICATION

• SI OFMR AMD recently conducted an asset inventory verification for the National Museum of African American History and Culture (NMAAHC).
• The asset verification exercise was conducted to ensure that OFMR obtains an accurate account of SI’s assets, relevant information and attributes that are used for identifying assets.
• Asset attributes such as installation date, asset condition, CSI code, life expectancy, room location, asset IDs, pictures were captured and updated.
ASSET HIERARCHY

- In order to develop our assets Preventive Maintenance Strategy, asset hierarchy was developed for various building asset systems.
- Defining assets, components, parts and systems
- Asset Hierarchy criteria
  - Maintenance requirement, systems, criticality and useful life
WHAT DO WE OWN AND WHERE ARE THEY?

• ASSET CONDITION
  • Visual inspection of assets were conducted. Assets were based on established guidelines and pertinent information like condition, age, and life expectancy of the assets were documented.
  • Assessing the condition of the assets is a huge step in identifying the assets that need to be replaced, repaired, retired or disposed of.
  • The results of the verification will be used to make recommendations for future improvements to the CMMS.
  • Data will also be used in enabling decision making and continued improvement of the Asset Management Program.

The Right maintenance on the Right equipment at the Right time
IS EVERY ASSET CRITICAL?

DEFINING CRITICALITY

• OFMR AMD developed a guideline to determine what is critical.
• This process evaluated an asset's overall impact on SI operations and assigned scores based on impact of failure to personnel, buildings and collections.
• Assets are categorized into three (3) tiers for PM strategy purposes.
• PM and PdM are performed based on the tier category.

Tier 1
Assets in tier 1 management level are the highest risk to life safety and sustaining operations. Failure of Tier 1 assets could result in death, injury, loss of collections, environmental non-compliance or building(s) closure. These assets may have a single point of failure and repairs are difficult (time, skill, expense).

Tier 2
Assets in tier 2 management level are of moderate risk to sustaining operations. Failure of Tier 2 assets could result in minor injury, have minimal to major impact to collections and manageable impact to behind the scene operations. Failure in these assets is detectable, there is redundancy, or temporary solutions are available.

Tier 3
Assets in tier 3 management level have little to no impact to collections or buildings. These assets are more likely to be replaced than repaired.
IS EVERY ASSET CRITICAL?

DEFINING CRITICALITY

• While every asset is important, it is important to note that not every asset is critical.

• We all agree that if every asset is considered critical, our maintenance program will be overwhelmed.

• Assets are assigned relevant criticality based on the established guidelines.
  • Job Plans will be developed for every asset that requires a PM based on criticality.
  • Maintenance will be scheduled and coordinated.
OUR STRATEGY

• When we improve our asset inventory database, we will be able to improve work scheduling, monitoring and execution.

• We will begin to see improvements in the following areas when maintenance work are performed on the right equipment at the right time.
  • Unplanned and unscheduled work will reduce drastically
  • Maintenance and repairs will be performed efficiently and effectively to ensure facilities capacities are sustained in a cost-effective manner and maximize assets life cycle.
  • Utilize our resources in the most efficient manner (avoiding delays and downtime).
  • Historical data and record of work completed will be stored and used in enabling decision making and continued improvement of the Asset Management Program.
CONTINOUS LEARNING, CONTINOUS IMPROVEMENT

• Shifting the mindset through continuous training and education
• Yearly audits and monitoring to keep us aligned
• Establishing Key Performance Indicators and comparing our progress with our baseline.
• Replicating our successes
OUR CHALLENGES

• Resources
• Time
• Culture and Mindset
• Inconsistencies in our CMMS database and work execution process.
• Lack of continuity
Questions?