

# Optimizing Preventative Maintenance

HOW to Deploy a CMS compliant AEM Program for Utility  
and/or Clinical Assets

Panel Discussion  
Facility Health Inc.  
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# Our Panel

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# It's All About the Data...

## Facility Management Issues

- Aging Facilities, Cost Pressures, Staff Reductions and Succession Planning Difficulties
- Historical Lack of Capital Investment in Facility Infrastructure.
- Increased Compliance, Regulation and Oversight
- Run to Fail / Reactive Maintenance Strategies



**Do You Know Where You Are Going?**

## Facility Management Opportunities

- Process Improvement, Command and Control
- **AEM Program Deployment and Preventative Maintenance Optimization**
- Full Automation of Compliance and Use of Technology to Monitor Facility Performance
- Proactive Capital Investment and Re-Investment

# Transforming Facility Management AEM Program Deployment People. Process. Technology.

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# What Is AEM?

- Compliance

- **CMS: Requires Identification of all Equipment that is part of an AEM Program.**
- TJC: EC 02.05.01 – “The [organization] manages risks associated with its utility systems.”
  - EC 02.05.05 – “The [organization] inspects, tests, and maintains utility systems.”
- TJC: EC 02.04.01 – “The [organization] manages medical [laboratory] equipment risks.”
  - EC 02.04.03 – “The [organization] inspects, tests, and maintains medical [laboratory] equipment.”
- HFAP: Physical Environment 11.06.09 ME, 11.05.01 U, DNV NIAHO Rev. 11.1



- But it is more than “just” a compliance issue.

- The easy answer is....”we are doing manufacturer’s recommended maintenance.” But is that reality?
- AEM represents an opportunity to take control of your facility. And to do so in a transparent, and “compliant” manner. **Do what you say, say what you do.**
- **Leverage the AEM Processes, and Data, for continuous improvement.**

**Clinical and/or Utility  
Asset Inventory**

**Where are you  
today with your  
Work Order System?**

**Portfolio  
Of Buildings  
And Assets**

- **Inventory**
- **PM Plan**
- **PM Performance**
- **Optimize?**
- **Replace?**

**CMMS as the Foundation**

**Clinical and/or Utility  
Asset Inventory**

**How do you want to  
manage your  
facility?**

**Portfolio  
Of Buildings  
And Assets**

- **Inventory**
- **Centralized**
- **Decentralized**
- **Naming, Tagging**
- **Capital Threshold**
- **What is an Asset?**

**CMMS Data and Process Standards**

**Clinical and/or Utility  
Asset Inventory**

**Do you know what  
assets you have and  
how they are  
performing?**

**Portfolio  
Of Buildings  
And Assets**

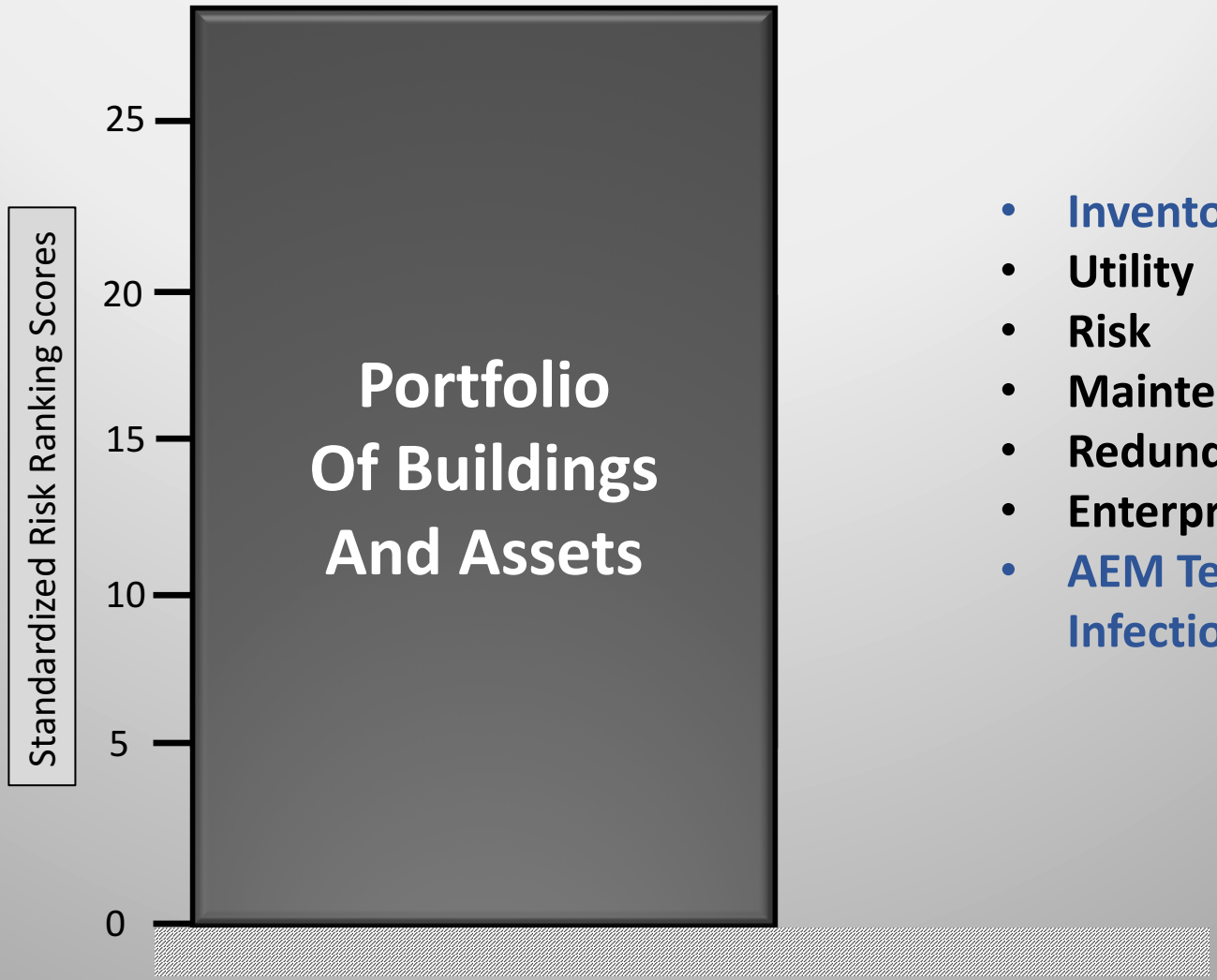
- **Inventory**
- **Facility Condition Assessment (FCA)**
- **Location**
- **Make/Model/SN**
- **Installation Date**
- **Industry Standards**

**Asset Information and Engineering Performance Baseline**



**Clinical and/or Utility  
Asset Inventory**

Have you applied  
standardized risk  
rankings for your  
assets?



- **Inventory**
- **Utility**
- **Risk**
- **Maintenance**
- **Redundancy**
- **Enterprise Standards**
- **AEM Team (Including Infection Control)**

**CMMS Inventory Risk Assessment**

# Utility Risk Classification Examples

- **Utility Classification (UC)**

1. NonClinical Other
2. Clinical Other
3. Transport
4. Diagnostic
5. Equipment Support
6. Environmental Support
7. Infection Control
8. Life Safety

- **Risk Application (RA)**

1. No Risk (NFPA 99 4.1.4)
2. Loss of Redundancy
3. Disruption of Comfort (NFPA 99 4.1.3)
4. Disruption of Service
5. Loss of Revenue
6. Misdiagnosis
7. Injury (NFPA 99 4.1.2)
8. Death (NFPA 99 4.1.1)



**Documented. Defensible.**

**Total Risk Value Equals  
UC + RA + MR + EI**

- **Maintenance Requirement (MR)**

1. None
2. Minimal
3. Average
4. Extensive

- **Asset Redundancy**

1. Redundancy Available < 1 Hour
2. Redundancy Available < 24 Hours
3. Redundancy Available < 1 Week
4. Redundancy Unavailable Without Significant Effort/Capital > 1 Week

**Consistency in Risk Classifications Across Multiple Facilities is Key!**

# Risk Ranking Mapping of NFPA Requirements – Part 1

**A change in NFPA 99 (2012) is the requirement to risk rank assets based upon impact of failure. The requirements are as follows:**

**NFPA 99 4.1 Building System Categories.** Building systems in health care facilities shall be designed to meet system Categories 1 through 4 requirements as detailed in this code.

**4.1.1 Category 1** Facility systems in which failure of such equipment or system is likely to cause **major injury or death** of patients or caregivers...

**4.1.2 Category 2** Facility systems in which failure of such equipment is likely to cause **minor injury** to patients or caregivers...

**4.1.3 Category 3** Facility systems in which failure of such equipment is **not likely to cause injury** to patients or caregivers, but can cause patient discomfort...

**4.1.4 Category 4** Facility systems in which failure of such equipment would have **no impact** on patient care...

**NFPA 99 4.2 Risk Assessment.** Categories shall be determined by following and documenting a defined risk assessment procedure.

## Risk Ranking Mapping of NFPA Requirements – Part 2

While we agree that these are viable categories, FHI feels that there is room for expansion to add other categories in the same **Risk Application**, as part of our standard risk ranking application **(Required by NFPA 99 4.2)**:

**Score 1:** No Risk (NFPA 99 4.1.4)

**Score 2:** Loss of Redundancy

**Score 3:** Disruption of Comfort (NFPA 99 4.1.3)

**Score 4:** Disruption of Service

**Score 5:** Loss of Revenue

**Score 6:** Liability

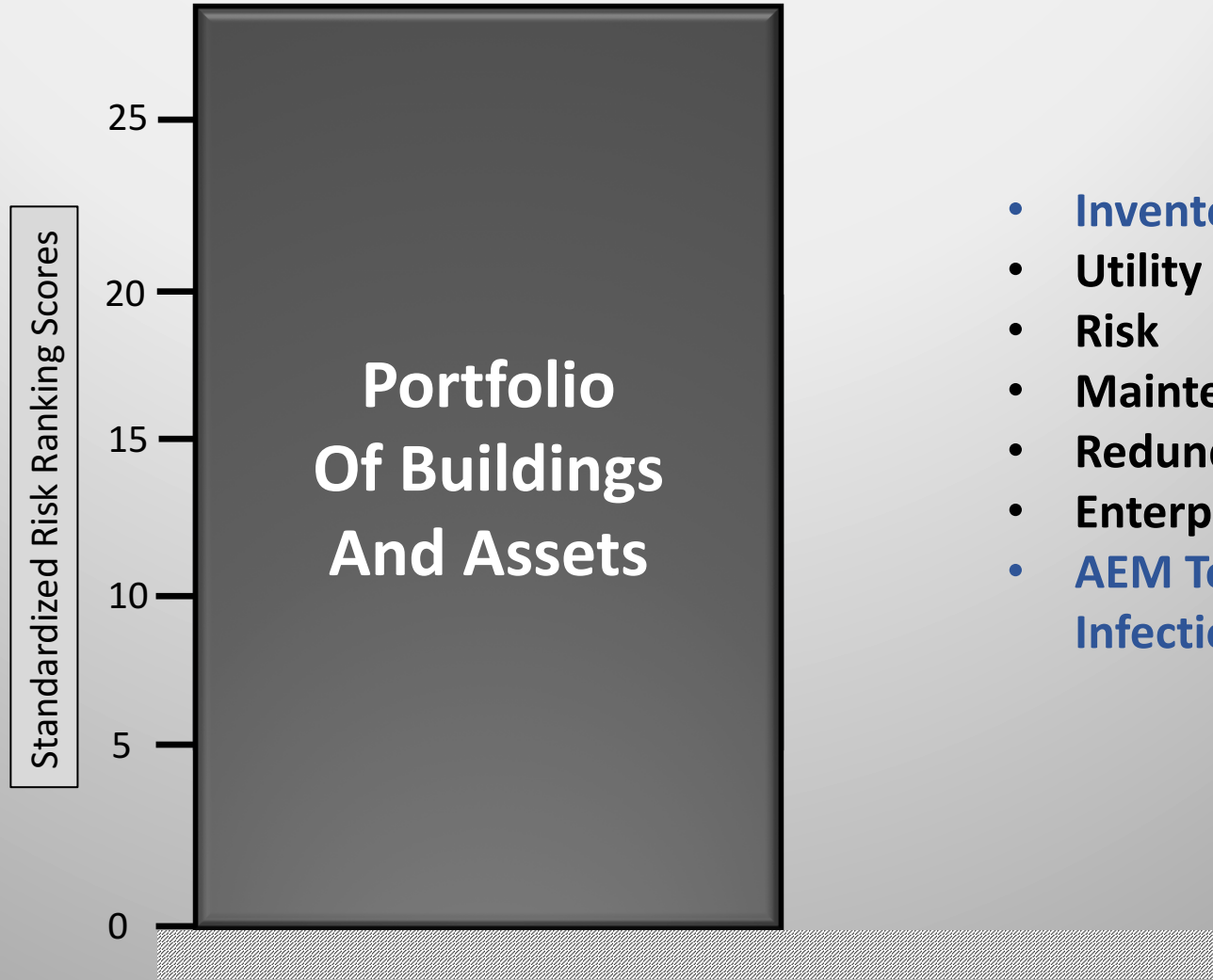
**Score 7:** Injury (NFPA 99 4.1.2)

**Score 8:** Death (NFPA 99 4.1.1)

We also include in our asset risk ranking impact based upon other classifications, including **Utility Classification** (score 1-8), **Maintenance Requirement** (score 1-4), and **Asset Redundancy** (score 1-4). This provides a comprehensive review of each asset.

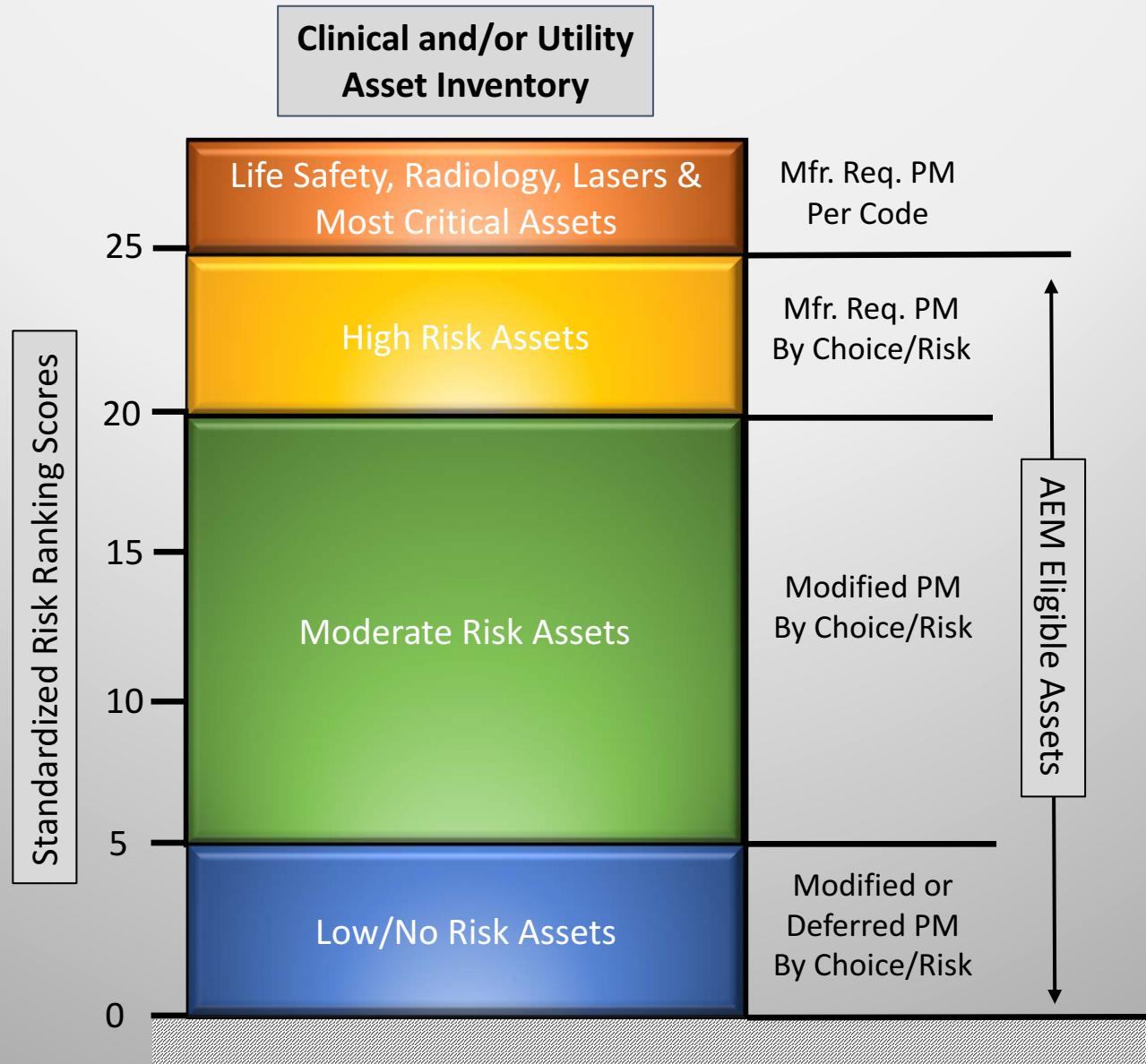
**Clinical and/or Utility  
Asset Inventory**

Have you applied  
standardized risk  
rankings for your  
assets?

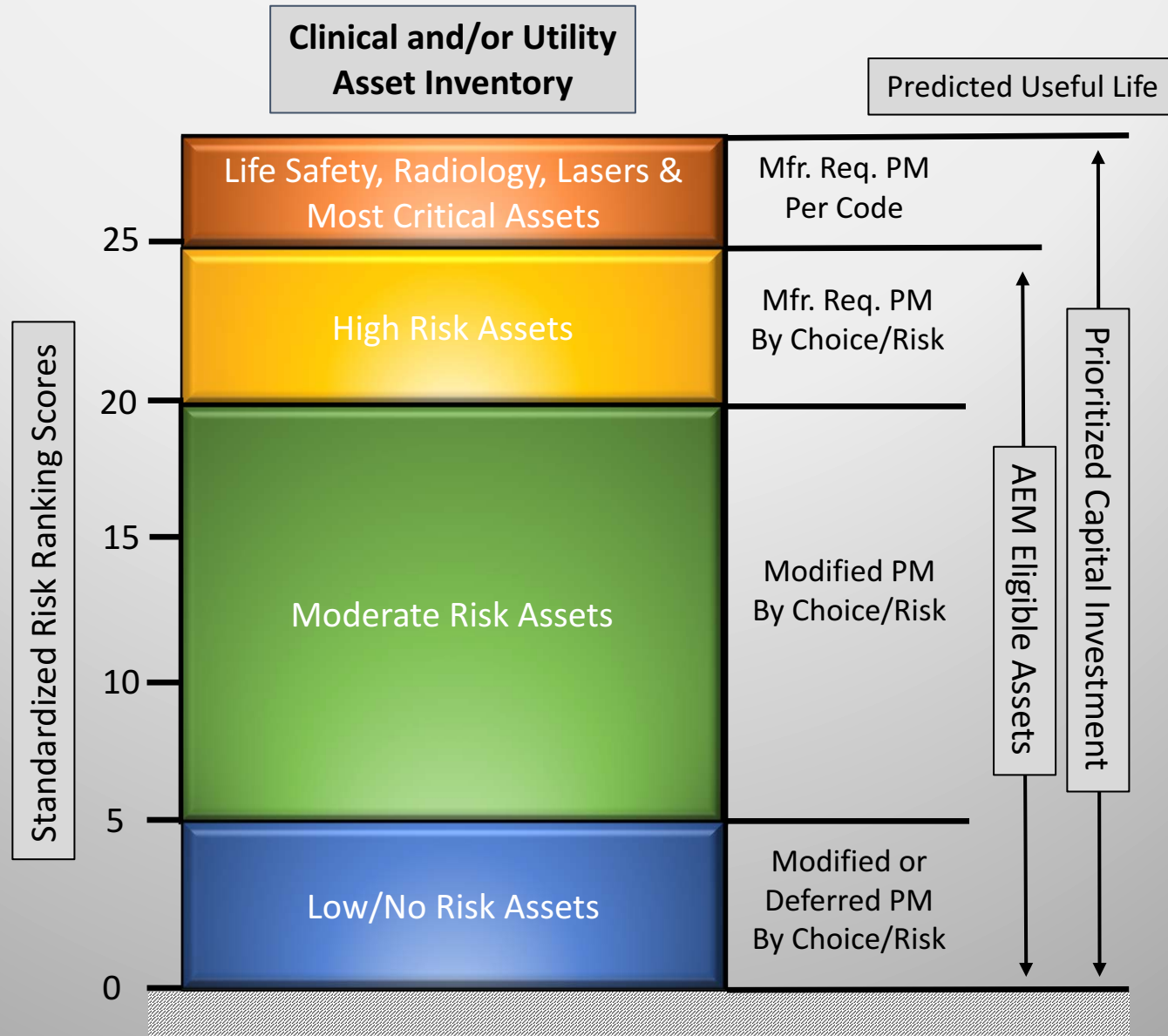


- **Inventory**
- **Utility**
- **Risk**
- **Maintenance**
- **Redundancy**
- **Enterprise Standards**
- **AEM Team (Including Infection Control)**





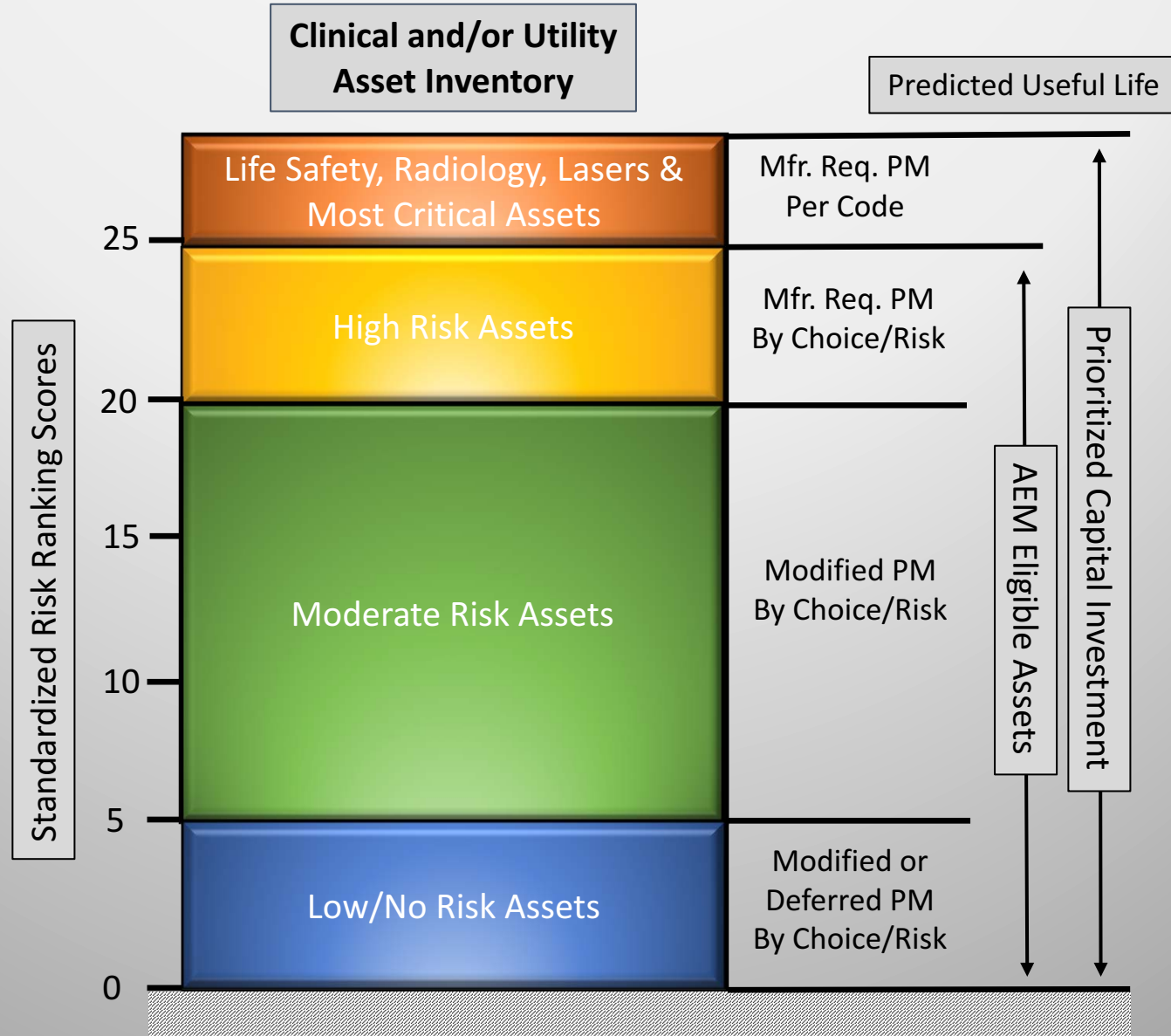
## Application of Risk Rankings – Prioritizing Management Decisions



## Transforming Facility Management

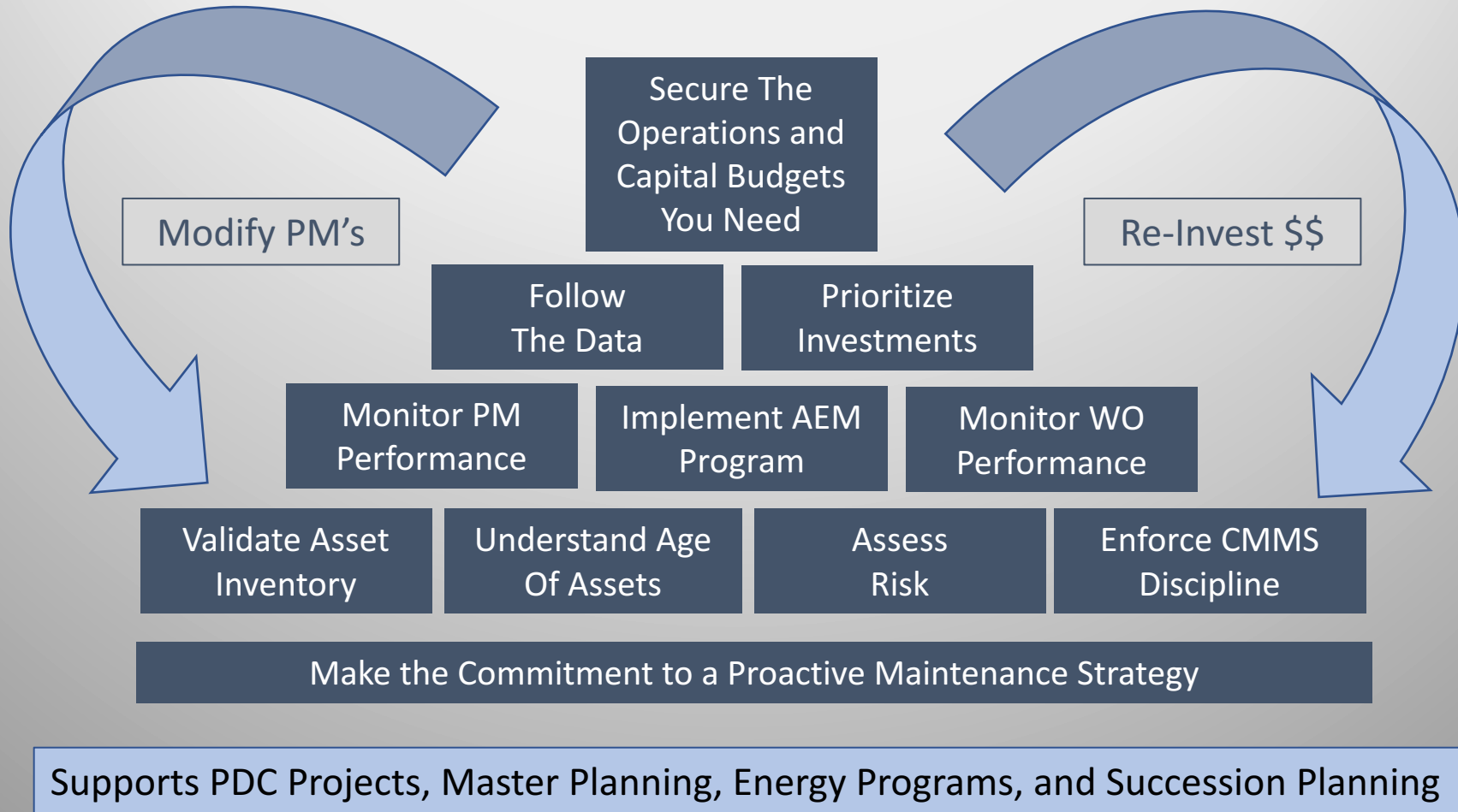
AEM and PM Policy Documentation

Budgeting and Forecasting Policy Documentation



**Transforming Facility Management**

# Continuous Improvement – Transforming Facility Management Utility Asset Performance Data, Prioritized Based on Risk



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# Thank You!

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# Analog vs. Digital Facility Management

**Q: Where Do You Start?**

People

Processes

Technology

**A: How Do You Want to Manage Your Facility?**

# Analog vs. Digital Facility Management

**Example: AEM Program Deployment**

People  
And Culture

Processes  
And Standards

Technology  
And Data

**Preventative Maintenance Optimization**