

# Maximizing Our CMMS Effectiveness



# Why be here?

- ✓ Learn about software that is available for facilities condition assessment and capital budget development
- ✓ Learn about some CMMS speed bumps
- ✓ Learn about our strategies to deploy a CMMS in our difficult economy
- ✓ Learn about our approach to a more uniform facilities management process
- ✓ Learn about our Vision of how to get the most from our facilities information systems



# *Perfect Storm*



# Long Time Coming

- ✓ In the 70's the Department of Social and Health Services was created from a combination of social service agencies and institutions, some having been in existence since the turn of the 19<sup>th</sup> century
- ✓ The institutions operated independently with little coordination
- ✓ Several cycles of financial crises left us with minimal maintenance resources and an enormous facilities preservation backlog
- ✓ For two plus decades, capital project funding made up for the premature failure of building and campus systems





# Long Time Brewing

- ✓ In the 90's Leg./OFM began providing additional oversight and began asking questions about maintenance levels and facilities' conditions that we didn't have the information to answer
- ✓ We embarked on our first Computerized Maintenance Management System (CMMS) and Facilities Condition Assessment (FCA) journeys. Both were learning experiences, mostly of what not to do
- ✓ In concert with significant reductions in capital and operating funding, our need to know about the condition of, and care for, our facilities was never greater



# Our Storm

- ✓ Severely declining maintenance resources
- ✓ Severely declining capital resources
- ✓ Extremely limited ability to redirect capital funds
- ✓ Very old and failing facilities
- ✓ Lack of adequate information systems
- ✓ Lack of common priorities and standards



# The Directive

Governor Gregoire and DSHS  
Secretary Dreyfus direct  
management to create a  
coordinated approach to manage  
resources more effectively



# Initial Assessment

- ✓ Where are we?
- ✓ **How good is our information?**
- ✓ What are our opportunities?
- ✓ What are our strengths?
- ✓ What are our risks?





# How good is our information?

- ✓ **Capital Management**-Early attempts at assessing the condition of facilities helped us realize that we were on the right track and that vendor systems were severely inadequate
- ✓ **Maintenance Management**-systems at the institutions varied significantly and few reflected a relationship to organizational goals and objectives



# The FCA Objectives

- ✓ Uniform priorities that tie to organizational goals (one Mission)
- ✓ No gaps, all necessary systems whose performance would be affected in the coming biennium included in our capital plan
- ✓ Identify premature failures, deficiencies, and causes
- ✓ Help identify impacts and priorities
- ✓ Provide initial capital cost estimates



General

Approval

New Institution

Refresh

- ▶ CANYON VIEW COMMUNITY FACI
- ▶ CHILD STUDY AND TREATMENT (
- ▲ EASTERN STATE HOSPITAL
  - ▶ Site Infrastructure
  - ▲ 01-ADMINISTRATION
    - Standard Foundation
    - Slab on Grade
  - ▶ Basement Walls
  - Floor Construction
  - Roof Construction
  - Exterior Walls
  - Exterior Windows
  - Exterior Doors
  - Roof Coverings
  - Partitions
  - Interior Doors
  - Stair Construction/Finishes
- ▶ Wall Finishes
- ▶ Floor Finishes
- ▶ Ceiling Finishes
- Elevators and Lifts
- ▶ Plumbing Fixtures
- Water Distribution
- Rain Water Drainage
- HVAC Equipment Basic
- HVAC Distribution, Controls

Standard Foundation

## Component Evaluation

Component Data

Approvals

File Attachments

Manage Sub-components

Institution: EASTERN STATE HOSPITAL

Building: 01-ADMINISTRATION

Building Code: 3A01

Component: Standard Foundation

Component Type: Concrete Reinforced - Continui

Quantity: 0

Unit of Measure: each

Floor:

Year Replaced: 1933

Life Span (when new): 50

Percent value: 100

Capital Project: ESH-Support/Administration Buildi

Component Description:

Concrete reinforced- continuous

Component Location:

Deficiency Description:

Photos: A2020. Foundations are not visible, but basement walls are in relatively good shape, so assuming foundations are fair for a 71 year old building. There have

Corrective Action:

Rating: Fair

MINOR REPAIR: Minor shrinkage cracks. No disruption of service in facility. A few minor cracks in walls with no water intrusion into building. Continuous observation recommended. Repair to cracks should occur.

## Deficiencies

- ☐ Inadequate Flow
- ☐ Moisture Penetration
- ☐ Openings in Wall
- ☒ Other
- ☐ Sagging
- ☐ Settlement
- ☐ Surface Deterioration
- ☐ Temperature Changes
- ☐ Ventilation

## Causes

- ☐ Broken Utilities
- ☐ Condensation
- ☐ Design Loads
- ☐ Leakage
- ☐ Occupancy Changes
- ☐ Other
- ☐ Piers/Footings
- ☐ Roof Drainage
- ☐ Soils
- ☐ Surface Water
- ☐ Water Table Changes

Approve

Cancel

Save



## Institution Summary Report - 2011

### (2D) GREEN HILL SCHOOL

| Site                             | Site Use | Site Type   | GSF     | \$/GSF | Preservation Backlog | Replacement Cost | Condition Rating |
|----------------------------------|----------|-------------|---------|--------|----------------------|------------------|------------------|
| SITE INFRASTRUCTURE (NOT LEASED) | Unknown  | Site Type 1 | 225,976 | \$65   | \$2,149,303          | \$14,596,799     | Fair (85%)       |
| Total for Site Data              |          |             | 225,976 |        | \$2,149,303          | \$14,596,799     | Fair (85%)       |

| Building  | Building Use               | Building Type                  | GSF    | \$/GSF | Preservation Backlog | Replacement Cost | Condition Rating |
|---|----------------------------|--------------------------------|--------|--------|----------------------|------------------|------------------|
| (2D25) - 25-RECREATION BLDG (NOT LEASED)                | Client Services            | Gym                            | 21,108 | \$191  | \$1,452,490          | \$4,037,010      | Fair (64%)       |
| (2D26) - 26-POWER PLANT (NOT LEASED)                    | Miscellaneous              | Power House - Boiler - Chiller | 4,544  | \$260  | \$292,362            | \$1,180,263      | Fair (75%)       |
| (2D33) - 33-SCHOOL BUILDING (NOT LEASED)                | Educational Facility       | School - Classroom             | 25,526 | \$198  | \$1,734,639          | \$5,048,851      | Fair (66%)       |
| (2D34) - 34-GREENHOUSE (NOT LEASED)                     | Client Services            | Greenhouse                     | 4,000  | \$52   | \$91,623             | \$209,601        | Poor (56%)       |
| (2D35) - 35-ENTRY SECURITY VISITATION (NOT LEASED)      | Office Mark's Title Change | Secure Entry                   | 8,906  | \$263  | \$227,960            | \$2,338,916      | Good (90%)       |
| (2D36A) - 36A-KITCHEN, DINING & COMMISSARY (NOT LEASED) | Client Services            | Kitchen - Dining Hall          | 27,402 | \$242  | \$1,061,113          | \$6,637,764      | Fair (84%)       |
| (2D36B) - 36B-VOCATIONAL SCHOOL (NOT LEASED)            | Educational Facility       | School - Vocational            | 36,811 | \$193  | \$1,048,424          | \$7,121,619      | Fair (85%)       |
| (2D37) - 37-LAUNDRY & MAINTENANCE (NOT LEASED)          | Client Services            | Laundry                        | 13,686 | \$262  | \$309,427            | \$3,584,942      | Good (91%)       |
| (2D38) - 38-SPECIAL SERVICES (NOT LEASED)               | Client Services            | Office                         | 3,076  | \$209  | \$69,496             | \$641,756        | Fair (89%)       |
| (2D40) - 40-BIRCH COTTAGE (NOT LEASED)                  | Residential                | Residential - Max Security     | 17,908 | \$340  | \$649,528            | \$6,093,528      | Fair (89%)       |



## Preservation Backlog

Institution

Building/Infrastructure

Condition/Rating

Project

Components

RAINIER SCHOOL

☒ Poor (30%)☒ Roof Construction

Reset

Go

Note: all totals are based on selected data only

Institution: **RAINIER SCHOOL**Backlog: **\$855,625.06**Replacement Cost: **\$1,130,849.35**Total Institution SqFt: **276,035**Condition Rating: **24.34% - (Unsatisfactory)**Number of Buildings: **20**Building: **03-GYMNASIUM & SCHOOL**Backlog: **\$24,753.35**Replacement Cost: **\$24,753.35**Total Building SqFt: **17,531**Condition Rating : **0% - (Unsatisfactory)**

Total Pages: 20 | Current Page: 1

&lt;&lt; Prev

Next &gt;&gt;

**Sub-Assembly:** Roofing**Component:** Roof Coverings**Component Type:** Single-ply Roofing PVC**Location:** School**Component Desc:** Approx. 5,000sf of the School roof  
is flat membrane**Quantity:** 5,000.00 square feet**% Value of Comp:** 20%**Project:** RS-Unassigned Preservation Need (COLE, Chuck (DSHS/LBD))

Assign

Unassign

Cancel

**Rating:** Unsatisfactory**Replacement Cost:** \$24,753.35**Backlog:** \$24,753.35**Deficiency:** Leaking/Blisters/Wrinkles**Cause:** Protective Coating/Cracks, Tears,  
Holes, and Breaks/Surface  
Weathering**Deficiency Description:** Existing membrane fabric is leaking due to advanced age despite prior effort to extend service with  
waterproof coating applications.**Corrective Action:** Replace approx. 5,000sf of failing roof membrane to include expected damage underlayment.  
Estimate repair cost is \$80,000.

# FCA Results

- ✓ All Poor and Failed systems are systematically addressed in capital plan
- ✓ Identifies premature failure of systems, deficiencies, and causes
- ✓ Corrective measures, maintenance priorities, design and construction worst/best practices



# The CMMS Objectives

- ✓ Uniform priorities that tie to organizational goals (one Mission)
- ✓ Multiple site deployment
- ✓ Roving teams deployment
- ✓ Meet the requirements for safe facilities in light of continuing cuts
- ✓ Establish performance standards that help us meet changing requirements with little or no additional funding
- ✓ Use organizational knowledge to constantly improve our processes



# Phase 1-CMMS Work Team

- ✓ Determining a course of action
- ✓ Team membership; Superintendents, stakeholders, business and facilities managers from each customer group
- ✓ Eight meetings including storming, discovery and brainstorming, molding solutions, and presenting results
- ✓ Management's blessing, to go forth and create





# Our Two Step Approach

- ✓ Short-term CMMS, redeploy software
  - ✓ Cost is critical, as we have very little funding
  - ✓ Accomplishes level one requirements documentation
  - ✓ Allows time to more fully define requirements
  - ✓ Allows deployment of common standards and migrates information into a single platform
- ✓ Long-Term CMMS, determine a course
  - ✓ Define and document business requirements
  - ✓ Web based vs. Client-Server?
  - ✓ Hosted vs. Internal?
  - ✓ Life cycle cost?



# Why Short Term?

- ✓ "Analyst studies indicate that as little as 5 to 10 percent of current CMMS/EAM capabilities are used... It is the exceptional firm that exceeds 40 percent of the capability and benefits..."
- ✓ More than 50% CMMS deployments fail
- ✓ CMMS are complex (i.e. 846 tables)
- ✓ Deployment can be overwhelming and expensive
- ✓ Life-cycle costs can be prohibitive



# Phase 2-CMMS Deployment

- ✓ **Business Process Team-**  
Superintendents, stakeholders, business and facilities managers from each customer group
- ✓ **Technology Team-**  
Information systems specialists for systems interfaces, operational environment, design, deployment, software testing cycles



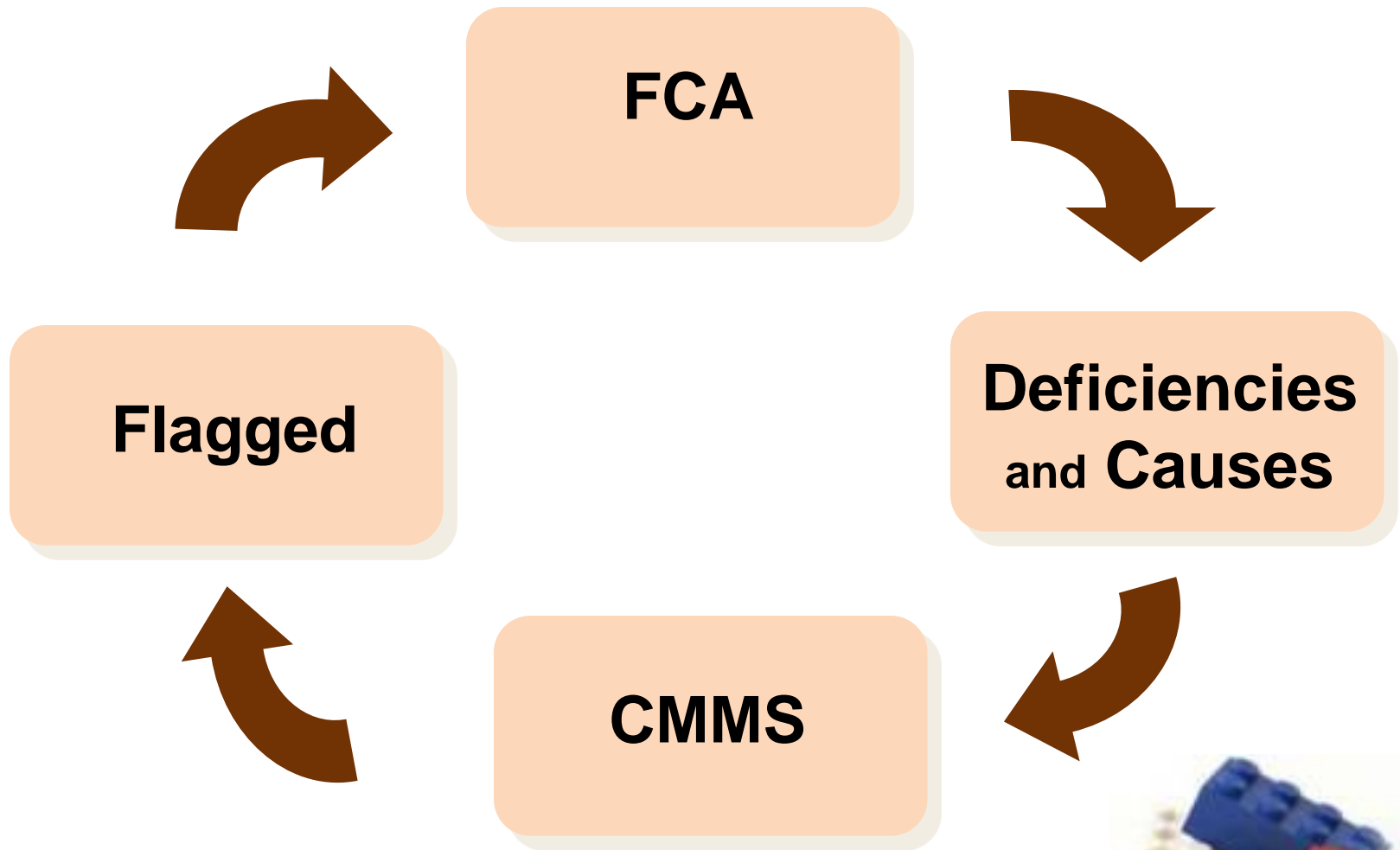
# Business Requirements...

- ✓ Home Teams
- ✓ Roving Teams
- ✓ Multiple Sites
- ✓ Uniform Priorities
- ✓ Common Terminology
- ✓ Common Task Standards
- ✓ Purchasing Materials and Equipment
- ✓ Inventory Management
- ✓ Vehicle Maintenance





# FCA and CMMS



# CMMS Support

- ✓ We recognize that to get and maintain support for a CMMS, especially during tough economic times, the system must not only “schedule maintenance” but it must do so in a manner that saves and leverages resources to the degree that clearly outweighs the cost
- ✓ Easy to say, hard to do, and even harder to demonstrate



# Above the Line...

- ✓ Performance Improvement
- ✓ Knowledge Management
- ✓ Best Practices
- ✓ Budgeting and Planning
- ✓ Materials Discounts

High

ROI

Cost

- ✓ Licensing Costs
- ✓ Deployment Costs
- ✓ Data Entry Costs
- ✓ Task Standards
- ✓ Maintenance Scheduling

Low

# Below the Line...



# Reactive to Predictive

Predictive Diagnostics

Remote Diagnostics

Preventative Maintenance

Reactive Maintenance





# Key Performance Indicators

- ✓ Labor time for specific scheduled maintenance tasks
- ✓ Cost of maintenance and repair against depreciated capital cost
- ✓ Cost of maintenance and repair compared to production levels
- ✓ Failure avoidance, failure frequency, or mean time between failure
- ✓ Meeting the target response times to begin or complete unscheduled repairs
- ✓ Completing scheduled maintenance tasks within the standard time
- ✓ Track unexpected outages and costs by system and by department
- ✓ Overall Equipment Efficiency (or “effectiveness”) measures the system’s uptime percentage
- ✓ Percentage planned maintenance vs. the percent emergency repair work

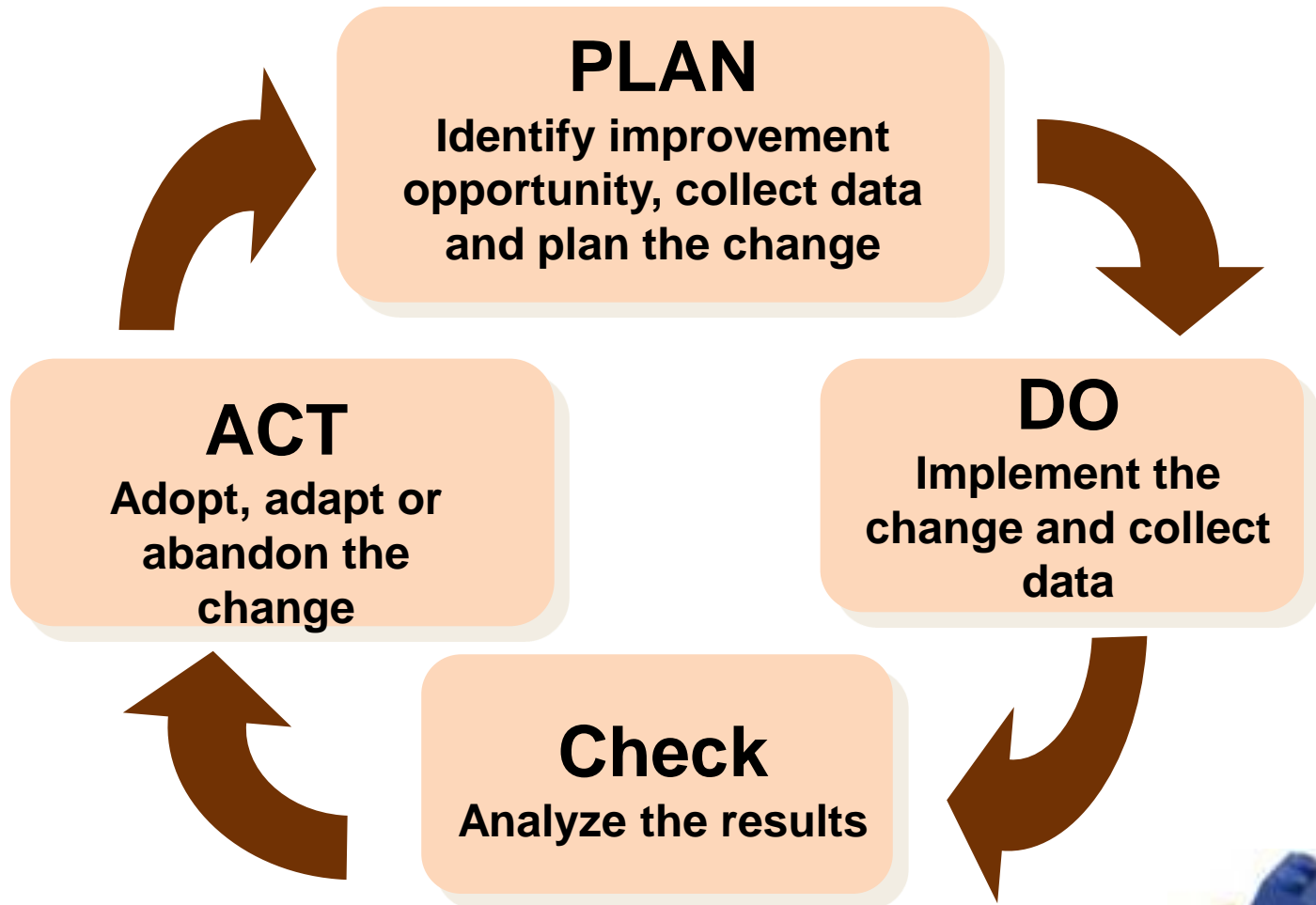


# Communicating Value

- ✓ Daily informal One on One's
- ✓ Weekly team meetings
- ✓ Monthly staff meetings
- ✓ Monthly management meetings
- ✓ Monthly customer meetings
- ✓ Annual performance reviews



# Cycle of Improvement



# LEAN Principles

- ✓ Customer/Stakeholder feedback focused
- ✓ Constant eye on the most direct route to the desired product
- ✓ 5 S's; Sort, Straighten, Sweep, Standardize, Self-Discipline
- ✓ 7 Wastes; Waiting, Motion, Inventory, Processing, Transportation, Defects, Overproduction

<https://www.lean.org/>





# Planning and Budgeting



- ✓ We will use CMMS historical repair, projected PMs, projected use, and systems aging to develop and support our operating budget requests
- ✓ We will use the FCA preservation needs, grouped into capital projects, to support our capital budgets
- ✓ We will involve stakeholders in determining where cuts happen and inform them of the related future consequences and costs
- ✓ We will incorporate CMMS “knowledge” in planning our future



# Leveraging Technology



- ✓ Key Systems Integration
- ✓ Automated Data Entry
- ✓ **Field Force Management**



# Field Force Management

- ✓ Pagers and Cell Phones
- ✓ Tablets & Laptops
- ✓ Auto WO processing
- ✓ Sharing Best Practices



# Summary...

- ✓ Deploying a CMMS, processing work orders, and preventative maintenance scheduling are the first steps in developing the information we need to better manage our resources
- ✓ Using CMMS information in a systematic process to improve performance, communicate value, and get the maintenance resources we need is how our CMMS will help us survive our *Perfect Storm*





# Questions?

Mark Crosson

360-902-8158

[Mark.Crosson@dshs.wa.gov](mailto:Mark.Crosson@dshs.wa.gov)

