Housing Reserves Workshop

Office of Financing & Treasury Training

August 18, 2006
Introductions to Speakers & Attendees

- Preston Allen – Director, SLO Housing  
  pallen@calpoly.edu
- Jan Andreason – Director, SF Housing  
  jana@sfsu.edu
- Mike Foraker – Asst. Vice Chancellor, UCLA Housing & Hospitality Services  
  mforaker@ha.ucla.edu
- Susan Hansen – Director, SJ Housing  
  shansen@housing.sjsu.edu
- Dan Les – Associate Director, Budget & Financial Planning, UCLA Housing & Hospitality Services  
  dles@ha.ucla.edu
Introductions to Speakers & Attendees

- Charlene Minnick, Risk Officer, Systemwide Risk Mgmt.  
  cminnick@calstate.edu
- Colleen Nickles – Senior Director, Financing & Treasury  
  cnickles@calstate.edu
- Jonathan Scheffler – Physical Plant Program Manager, CPDC  
  jscheffler@calstate.edu
- Rosa Renaud – Senior Manager, Financing & Treasury  
  rrenaud@calstate.edu
- Tony Valenzuela – Associate Vice President Facilities, Development, and Operations  
  Tony.Valenzuela@sjsu.edu
Agenda

- Introductions
- Goals & Objectives
- Housing Reserve Plan – An Outside Perspective
- Catastrophic Events Reserve:
  - Risk Management
  - A Campus Experience
- Maintenance & Repair/Capital Renovation Reserve:
  - Chancellor’s Office CPDC – A System Approach
  - A Campus’ Formal Evaluation of Facilities
  - A Campus Housing Program Director’s Plan
Agenda

- Housing Reserve Plan – An Inside Perspective
- Working Capital Reserve – Roundtable Discussion
- Capital Development Reserve
- Financing & Treasury Guidelines
- Campus Reserve Plan
- Housing Task Force
Reserve Workshop Goals

- To provide an interactive forum for housing officers and Chancellor’s Office staff to discuss ideas, tools, and resources available in developing a housing reserve plan.
- To discuss challenges faced in developing a housing reserve plan and possible solutions.
- To provide practical ideas for creating new housing reserve plans and/or improving existing housing reserve plans.
Reserve Workshop Objectives

- These steps will be taken in order to meet our workshop goals:
- Have speakers with differing expertise share tools for developing housing reserve plans.
- Provide practical tools, lessons learned, and resource information to be used in the development of campus housing reserve plans.
- Provide housing directors guidelines to clarify expectations for compliance with Executive Order 876, Section 7, Reserves.
Reserve Workshop Objectives

- Remind campuses of the requirements to:
  - Formally document campus housing reserve policies;
  - Conduct and document in-depth reviews of the adequacy of existing housing reserves at least every three years;
  - Adjust reserve plans and levels as appropriate.

- Create a housing task force that will evaluate Title 5 and SUAM policies and recommend updates to policies given today’s student housing environment.
Debt Capacity/Reserve Benchmark Presentation

- Mike Foraker - Asst Vice Chancellor
- Dan Les - Assoc Director, Budget & Financial Planning
For the state colleges and the University of California it is recommended That …

The operation of all such ancillary services for students as Housing, feeding, and parking be self-supporting. Taxpayers’ money should not be used to subsidize, openly or covertly, the operation of such services.
FALL 2005 HOUSING OCCUPANCY- ALL CAMPUSSES

University of California Housing System (UCHS) - 10 Campuses
  37,473  Single Students in Residence Halls
  13,189  Single Students in Apartments
  3,691   Student Families Apartments
  490    Faculty Apartments

Campus Housing System (CHS) - 4 Campuses (D, LA, SF, SC)
  208    Single Students in Residence Halls
  1,718   Single Students in Apartments
  1,204   Student Families Apartments
  189    Faculty Apartments

Third Party Development - 3 Campuses (D, I, R)
  -    Single Students in Residence Halls
  3,129  Single Students in Apartments
  304   Student Families Apartments
  -    Faculty Apartments
FALL 2005 HOUSING OCCUPANCY - UCLA

University of California Housing System (UCHS)
- 8,411 Single Students in Residence Halls
- 1,316 Single Students in Apartments
  - Student Families Apartments
- 99 Faculty Apartments

Campus Housing System (CHS)
- 98 Single Students in Residence Halls
- 1,474 Single Students in Apartments
- 1,204 Student Families Apartments
- 127 Faculty Apartments
FALL 2005 HOUSING DEBT- UCLA

University of California Housing System (UCHS)
$28.4 million Annual Debt Service Payments Fiscal year
$451.7 million Outstanding Principal

Campus Housing System (CHS)
$12.9 million Annual Debt Service Payments Fiscal year
$157.2 million Outstanding Principal
Established in 1994 for UCLA Auxiliary Enterprises
Purpose: - Ensure the Continued Quality of programs & services.
  - Provide Objective Standards for assessing financial performance.
  - Address questions regarding ability to absorb future debt.

WHAT IS DEBT CAPACITY
The Two Definitions.

WHAT PERFORMANCE RATIOS ARE
"Dashboard" instruments to measure performance of projections

WHAT PERFORMANCE RATIOS ARE NOT
"Engines" that create projections

ALL RATIOS ARE NOT CREATED EQUAL
"ETCHED IN STONE" Ratios
Financial Viability required Ratios are met or exceeded

"TARGET" Ratios
Something to shoot for, but may not be met in some years.

"DEFINER" Ratios
Describes Financial situation.
Debt Capacity Analysis/Rate Ramping

**Rate Ramping**. Rate ramping is the process of implementing smaller rate increases over multiple years in advance of a project’s opening (versus a larger one-time increase at project opening), and is a fundamental tool used in the UCLA models. Primary advantages to rate ramping include:

- **Avoiding Sticker Shock**. A rudimentary sensibility embedded in the rent ramping concept is that it is more acceptable for the campus community to take 3-years of 5% increases instead of a one-year 15% increase.
- **Building Reserves**. By increasing revenue in advance of a project’s opening, more is contributed to reserves. As such, more funds are available from reserves to reduce the amount of project costs that need to be debt financed. As this use of reserves ultimately will reduce annual debt service payments, rate ramping leads to lower overall rates once the project is complete versus the rates that would be required without rate ramping.
- **Covering Initial Debt Service**. As firm project opening schedules and initial occupancy levels are often elusive at best, rate ramping provides some revenue stability from existing facilities to cover debt service payments of new facilities whose operating revenue may be tenuous during its first year of operations.

In our models, rate ramping is used looking at the higher aggregate levels of the model due to the structure of the model and the multiple project nature of our capital development plan being done in a compressed timeframe.
Financial Performance Ratios

BOTTOM LINE RATIO

Net Operating Revenue After Debt + STIP

= Gross Revenues + STIP

Measures ability of business to generate cash
Financial Performance Ratios

**P&I / TOTAL REVENUE RATIO**

Principal & Interest

= ____________________________

Gross Revenues + STIP

Measures extent revenues are committed to cover principal and interest (P&I) payments

**UCLA-Housing**

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Ratio Varies</th>
</tr>
</thead>
<tbody>
<tr>
<td>93/94</td>
<td></td>
</tr>
<tr>
<td>95/96</td>
<td></td>
</tr>
<tr>
<td>97/98</td>
<td></td>
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<tr>
<td>99/00</td>
<td></td>
</tr>
<tr>
<td>01/02</td>
<td></td>
</tr>
<tr>
<td>03/04</td>
<td></td>
</tr>
</tbody>
</table>

UCHS/Res Halls

CHS/Apartments
Financial Performance Ratios

DEBT SERVICE COVERAGE RATIO

Net Operating Revenues Before Debt & STIP

\[ \text{Ratio} = \frac{\text{Net Operating Revenues Before Debt & STIP}}{\text{Principal + Interest}} \]

Measures capacity to cover principal and interest (P&I) payments from current operations
Financial Performance Ratios

RESERVE BALANCE RATIO

**Total Unexpended Reserve Balance**

\[ \text{Total Unexpended Reserve Balance} = \frac{\text{Principal} + \text{Interest} + \text{Major Maintenance Expenditures}}{} \]

Measures capacity to cover principal and interest (P&I) payments and annual major maintenance expenditures from existing reserves.
Financial Performance Ratios

MAJOR MAINTENANCE CONTRIBUTION / REPLACEMENT VALUE

\[
\text{Annual Contribution to Major Maintenance Reserves} = \frac{\text{Annual Contribution to Major Maintenance Reserves}}{\text{Replacement Value}}
\]

Measures extent physical assets are being maintained in order to generate future revenues.
Question & Answer
Catastrophic Events Reserves

- Systemwide Risk Management – Charlene Minnick
- A Campus Experience – Jan Andreason, San Francisco State University
- Financing & Treasury – Rosa Renaud
Catastrophic Events Reserve

- Systemwide Risk Management - Charlene Minnick
Catastrophic Events - Are you Really Prepared?

August 18, 2006
Housing Officers Workshop
Today’s Presentation

- Catastrophic? What Does that mean?
- Preparation and Planning
- Responding
- Mitigating
- Recovery
- And then there’s Planning for a Pandemic!
Catastrophic? What Does That Mean?

- Countless Examples: World Trade Center, Katrina, Indian Ocean Tsunami, Northridge Earthquake, Earthquakes in Turkey, Pakistan, volcanic eruptions (Hawaii, Mt St Helens)
- Those were highly publicized events, HOWEVER, consider these:
  - Murder/suicides
  - Stages collapsing
  - Civil disorder
  - Wildfires
  - Chickenpox outbreak
  - Mumps Outbreak
The only way to MINIMIZE the impact of a catastrophe is to:

- PREPARE
- PREPARE and then
- PREPARE
So Where are you in the Process?

- A mistake often made in Emergency Planning is planning for the WORST CASE SCENARIO as the only plan and thinking you just scale down. In preparing for one’s own family, you cannot assume the worst case scenario because the “worst case” would involve your family being vaporized or overrun by a panicked mob at the onset of the disaster......so then why would you plan for this! The message is you cannot plan for every contingency, but you CAN plan for most and build in flexibility to adapt to changes as the events unfold.
SO, WHAT KEEPS YOU UP AT NIGHT? (handouts in your binder)

- **Table 1: Potential Types of Disasters**
  - If you check off every one of these as high, you’re in the wrong job!

- **Chapter II Disaster Planning Checklist**
  - This was developed by the Association of Public Treasurers. One you can check off your list is the maintenance of current insurance data with appraisals, the Office of Risk Management has done this one.

- **Chapter III Understanding your Recovery Point Objective (RPO).**
  - Information Technology questions
RESPONDING

- Response will vary on the nature and size of the event. Unless you are a first responder, leave this to the trained personnel. However, if you come upon a small fire, and know how to operate a fire extinguisher and its nearby, PUT THE FIRE OUT!!!
MITIGATION

- This means DON’T MAKE IT WORSE by not doing anything to preserve life and protect property.
RECOVERY

- THIS IS WHAT IT’S ALL ABOUT! IF YOU CAN’T PREVENT THE DISASTER, MAKE PLANS SO YOU CAN RECOVER FROM IT!
Having the best plan in the universe doesn’t mean it works!

How many of your are willing to get on an airplane and find out that the pilot has read the book and written a plan as to how to fly a plane! Your piano teacher was right:

Practice, Practice, Practice!!!
AND THEN’S THERE’S PLANNING FOR A PANDEMIC

- This is not traditional emergency/disaster planning. This is business survivability. The CSU is using a Business Continuity Planning model to prepare for a potential influenza outbreak, but this could be applied to any infectious disease outbreak (natural or man made). The question is not IF but WHEN.
RESOURCES

- Your campus emergency management coordinator
- FEMA [www.fema.gov](http://www.fema.gov)
- State of California Office of Emergency Services [www.state.oes.gov](http://www.state.oes.gov)
- [www.cdc.gov](http://www.cdc.gov)
Catastrophic Events Reserve

- A Campus Experience – Jan Andreason, San Francisco Housing
1989 San Francisco Earthquake

October 17
5:04 PM
7.1 Magnitude
20 Aftershocks
Entire residence community evacuated
Thorough room by room check
Campus phones down
No functioning walkie-talkies
6:00 PM

- Major plumbing leaks on the 15th Floor of Verducci Hall
- Dining Center gas heater would not shut off
7:30 PM

- Sending runners to the EOC
- Maintenance workers are called back to work
9:00 PM

- Residential Life staff distribute blankets to residents
- Controlled fires are ignited inside trash cans located outside buildings for light
- Purcell is given a cell phone, but the network is down
10:00 PM

- Students are allowed back into Mary Ward and Mary Park Halls
- Verducci Hall is considered unsafe due to the disturbed asbestos
- Students from Verducci Hall are housed overnight in Mary Ward and Mary Park Halls, The Cantina, Study Lounges and Seven Hills Conference Center
11:30 PM

- Major mechanical and plumbing damages are determined
- Emergency generator is down
- Domestic hot water is down
- Evidence of asbestos is found on every floor of Verducci Hall
During the Following Days...

- Students are offered masks and allowed to enter Verducci Hall for 1½ hours to collect their belongings
- Verducci Hall is turned over to an Asbestos Abatement Company
During the Following Days…

- Emergency loans are established
- October 20\textsuperscript{th}: The decision to close Verducci Hall for 1 month is made
- October 30\textsuperscript{th}: Verducci Hall opens without hot water for 16 days
During the Following Years...

- 1990/1991: One half of Verducci Hall is closed each semester for asbestos abatement
- 1991/1992: Verducci Hall is permanently closed
Verducci Hall
Imploded April 8, 1999
The Village at Centennial Square

- Opened January 2001
- $48 million
Loss in Revenue

- Settled with FEMA in August 1998 for $9,672,179
- Payment could not be used to retire debt
- 9 Years; 3 Appeals; $17 million in lost gross revenue
## Initial Loss of Income

*(First 2 Weeks)*

<table>
<thead>
<tr>
<th></th>
<th>Refunds</th>
<th>30-Day Refunds</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Refunds</strong></td>
<td>290</td>
<td></td>
<td>$182,030</td>
</tr>
<tr>
<td><strong>30-Day Refunds</strong></td>
<td>410</td>
<td></td>
<td>$97,771</td>
</tr>
<tr>
<td><strong>Triple Room Adjustments</strong></td>
<td>204</td>
<td></td>
<td>$13,651</td>
</tr>
<tr>
<td><strong>Loss of Hot Water</strong></td>
<td>231</td>
<td></td>
<td>$11,149</td>
</tr>
<tr>
<td>(16 Days)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals:</strong></td>
<td>1,135</td>
<td></td>
<td>$304,603</td>
</tr>
</tbody>
</table>
## Initial Expenses for Verducci Hall

**15 Stories; 763 Beds; Built in 1970; $4 Million**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos Abatement &amp; Air Testing</td>
<td>$303,376</td>
</tr>
<tr>
<td>Repair (Generator, Hot Water, Ceilings)</td>
<td>$60,260</td>
</tr>
<tr>
<td>Temporary Labor (Maintenance, Custodial, Secretary)</td>
<td>$21,770</td>
</tr>
<tr>
<td>Overtime</td>
<td>$12,660</td>
</tr>
<tr>
<td>Emergency Equipment</td>
<td>$17,800</td>
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</tbody>
</table>
## Initial Expenses Cont.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement of Lost Goods (Blankets, China)</td>
<td>$30,803</td>
</tr>
<tr>
<td>Architectural Contract for Damage Assessment</td>
<td>$168,146</td>
</tr>
<tr>
<td>Lateral Analysis</td>
<td>$93,000</td>
</tr>
<tr>
<td>CSU Project Authorization</td>
<td>$723,000</td>
</tr>
</tbody>
</table>

**Total Initial Expenses: $707,815**
# Long Term Expenses

<table>
<thead>
<tr>
<th>Years</th>
<th>Expense</th>
<th>Principal</th>
<th>Interest</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>92/93 to 07/08</td>
<td>Asbestos Abatement</td>
<td>$625,000</td>
<td>$280,009</td>
<td>$939,994</td>
</tr>
<tr>
<td>97/98 to 06/07</td>
<td>1994/1995 Deficit Loan</td>
<td>$384,445</td>
<td>$127,992</td>
<td>$512,437</td>
</tr>
<tr>
<td>Pay off in May 2008</td>
<td>Series B Revenue Bond</td>
<td>---</td>
<td>---</td>
<td>$2,870,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>paid after building closure</td>
</tr>
</tbody>
</table>
## Deficit Reduction Plan Summary

<table>
<thead>
<tr>
<th>FundsReceived From:</th>
<th>91/92</th>
<th>92/93</th>
<th>93/94</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMER Loan:</td>
<td>($1,123,499)</td>
<td>($1,699,302)</td>
<td>($1,690,085)</td>
</tr>
<tr>
<td>Reduction in Operating Expenses:</td>
<td>$371,445</td>
<td>Debt was covered by System Wide Money</td>
<td></td>
</tr>
<tr>
<td>Layoff Staff (5 layoffs in 91/92, 18 in the end)</td>
<td>$85,975</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAB Financing Savings:</td>
<td>$387,815</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Budget Year:**

- **1991/92**
- **1992/93**
- **1993/94**

**Deficit Amount:**

- **1991/92:** ($1,123,499)
- **1992/93:** ($1,699,302)
- **1993/94:** ($1,690,085)
Deficit Reduction Plan Summary Cont.  
*Proposed CSU Adjustments*

<table>
<thead>
<tr>
<th>Budget Year</th>
<th>94/95</th>
<th>95/96</th>
<th>96/97</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deficit Amt</td>
<td>($1,427,485)</td>
<td>($1,434,261)</td>
<td>($1,348,676)</td>
</tr>
<tr>
<td>Waive Transfer of</td>
<td>($513,526)</td>
<td>($513,526)</td>
<td>($513,526)</td>
</tr>
<tr>
<td>Reserves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waive M&amp;R Loan</td>
<td>($272,467)</td>
<td>($272,467)</td>
<td>($272,467)</td>
</tr>
<tr>
<td>Payments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed</td>
<td>($641,492)</td>
<td>($648,268)</td>
<td>($562,683)</td>
</tr>
<tr>
<td>Surplus/Deficit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Deficit Reduction Plan Summary Cont.

*Proposed CSU Adjustments*

<table>
<thead>
<tr>
<th>Budget Year</th>
<th>97/98</th>
<th>98/99</th>
<th>99/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deficit Amt</td>
<td>($1,295,401)</td>
<td>($1,240,202)</td>
<td>($810,853)</td>
</tr>
<tr>
<td>Waive Transfer of Reserves</td>
<td>($513,526)</td>
<td>($513,526)</td>
<td>($513,526)</td>
</tr>
<tr>
<td>Waive M&amp;R Loan Payments</td>
<td>($272,467)</td>
<td>($272,467)</td>
<td>($272,467)</td>
</tr>
<tr>
<td>Proposed Surplus/Deficit</td>
<td>($509,408)</td>
<td>($454,209)</td>
<td>($24,860)</td>
</tr>
</tbody>
</table>
### Proposed CSU Adjustments

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Budget Year</strong></td>
<td>00/01</td>
</tr>
<tr>
<td><strong>Deficit Amt</strong></td>
<td>($505,801)</td>
</tr>
<tr>
<td>Waive Transfer of Reserves</td>
<td>($513,526)</td>
</tr>
<tr>
<td>Waive M&amp;R Loan Payments</td>
<td>$0</td>
</tr>
<tr>
<td>Proposed Surplus/Deficit</td>
<td>$7,725</td>
</tr>
</tbody>
</table>
Catastrophic Events Reserves

● Financing & Treasury Information
• E.O. 876 allows campuses to define their catastrophic event reserve.
• 1993 Student Housing Task Force recommended:
  – The reserve should be sufficient for the purpose of paying any self-insurance retention and for uninsured losses resulting from natural disasters such as earthquakes, floods, high winds, fire, or criminal activity such as bombings or arson.
Catastrophic Events – F&T Guidelines

- A base amount should be established once a comprehensive risk assessment has been completed for the housing system and should be based upon findings of the risk assessment related to probable maximum annual losses together with self-insured retention requirements.
Insert the example of different checklists that could be used in planning for catastrophic events as provided by the Association of Public Treasurers.

There are numerous examples available from your campus’ Risk Management department and the Systemwide Risk Management Office.
Maintenance & Repair/Capital Renovation Reserves

- Chancellor’s Office CPDC – Jonathan Scheffler
- A Campus’ Formal Evaluation of Facilities – Tony Valenzuela, San Jose State University
- A Campus Housing Program Director’s Plan – Susan Hansen, San Jose State University
Chancellor Office CPDC Resources

Presentation by Jonathan Scheffler – Physical Plant Program Manager, Capital Planning, Design & Construction
Capital Renewal Forecasting

- Capital Renewal Background Information
- Importance of Capital Renewal Forecasting
- Forecasting Methods
- Available Resources
Capital Renewal Background Information

- CSU definition of Capital Renewal:
  - Capital Renewal is “The systematic replacement of building and utility systems to extend their useful life” ¹

- All systems, or parts of systems, are assumed to have useful life, after which they must be replaced completely
  - This is true even if they are maintained regularly.

¹ Executive Order 847 – Policy Statement on Facility Maintenance
Capital Renewal Background- Cont.

- Examples of useful life of various building systems
  - Roofing – 25 years
  - HVAC Equipment/Controls – 30 years
  - Plumbing Fixtures – 30 years
- See subsystem life cycle handout for more information
Capital Renewal Background- Cont.

- CSU buildings and building systems are aging
  - 68% of the total CSU building count is at least 20 years old
  - 37% of the total CSU building count was constructed prior to 1966.
Other institutions have the same challenges as the CSU

CPDC did a sampling of other public and private institutions for comparison

- Every institution surveyed had numerous buildings and systems that were beyond their useful life
- Each institution was struggling with funding their growing Capital Renewal backlog
Importance of Capital Renewal Forecasting

- **Budgeting**
  - Construction and repair costs are going up
    - 12.5% cost increase applied to CPDC model for 2006
  - Rising energy costs
    - Geopolitical and weather related issues can cause price increases
    - Oil recently passed $79 per barrel
Forecasting Importance - Cont.

● Planning
  - Forecasting will assist with building a business case for system and building Capital Renewal projects
  - Building systems in need of renewal may be grouped together to lower the project costs
    ● Examples: fire alarm systems and roofing
Forecasting Methods

- Campuses and CPDC use 3 basic methods to assist with Capital Renewal forecasting

1. Facilities Renewal Resource Model (FRRM)
2. Facility Condition Analysis (FCA)
3. Computerized Maintenance Management Systems (CMMS)
Facilities Renewal Resource Model (FRRM)

- FRRM is a Capital Renewal and Deferred Maintenance backlog database
  - Maintained by each campus
  - Updated annually
  - FRRM Data reflects CPDC Space & Facilities Database (SFDB) information

- Campuses utilize FRRM information as another tool to assist with Capital Planning

- See the FRRM handout page for an example
Facilities Condition Analysis (FCA)

- FCA is done by an outside vendor
- Provides a detailed analysis of a targeted building
- FCA costs are 10–12 cents/sq. ft. for a large facility
- CPDC is currently researching a systemwide Master Enabling Agreement (MEA) for campus Facility Condition Analysis.
- See the FCA handout page for an example
Computerized Maintenance Management Systems (CMMS)

- Used by each campus to assign and track Preventative Maintenance (PM) for buildings and building subsystems
- Required by Executive Order 847
- Campuses utilize CMMS to target subsystems that are in need of renewal
  - CMMS identifies excessive parts and labor costs
  - CMMS data can be helpful with building a business case for subsystem Capital Renewal Projects
Executive Order 847

- Issued in January 2003
- Refines the standards in which campuses maintain CSU facilities
- Provides clear definitions of the following:
  - Operations and Maintenance
  - Deferred Maintenance
  - Capital Renewal
- See Executive Order 847 handout for more information
Available Resources

- Association of Physical Plant Administrators (APPA) [www.appa.org](http://www.appa.org) – Prime resource for FCA and CMMS information

- CPDC Contact Information
  
  Jon Scheffler
  Office: (562) 951-4634
  jscheffler@calstate.edu
## Building Sub-system Categories and Life Cycles (FRRM Model)

<table>
<thead>
<tr>
<th>Sub-system</th>
<th>Life Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roofing (Tile)</td>
<td>80 years</td>
</tr>
<tr>
<td>Roofing (Membrane, Built-up, Shingle, Bitumin, Foam)</td>
<td>25 years</td>
</tr>
<tr>
<td>Building Exteriors, Doors, Windows (Hard)</td>
<td>30 years</td>
</tr>
<tr>
<td>Building Exteriors (Soft)</td>
<td>20 years</td>
</tr>
<tr>
<td>Elevators and Conveying Systems</td>
<td>25 years</td>
</tr>
<tr>
<td>HVAC – Equipment/Controls</td>
<td>30 years</td>
</tr>
<tr>
<td>HVAC – Distribution Systems</td>
<td>50 years</td>
</tr>
<tr>
<td>Electrical Equipment</td>
<td>25 years</td>
</tr>
<tr>
<td>Plumbing Fixtures</td>
<td>30 years</td>
</tr>
<tr>
<td>Plumbing (Rough-in)</td>
<td>70 years</td>
</tr>
<tr>
<td>Fire Protection Systems</td>
<td>40 years</td>
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<tr>
<td>Fire Detection Systems</td>
<td>20 years</td>
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<tr>
<td>Built-in Equipment and Specialties</td>
<td>25 years</td>
</tr>
<tr>
<td>Interior Finishes: Walls, Floors, Doors</td>
<td>15 years</td>
</tr>
<tr>
<td>Painting (Public Areas)</td>
<td>15 years</td>
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</table>
## FRRM Report Example

### BACKLOG & 5 YR RENEWAL FORECAST BY LOCATION ($000's)

<table>
<thead>
<tr>
<th>Campus</th>
<th>SLO</th>
</tr>
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<tbody>
<tr>
<td>Location</td>
<td>MAIN-SL</td>
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<table>
<thead>
<tr>
<th>Building</th>
<th>FEED MILL / HAY SHED</th>
<th>CRV ($000's)</th>
<th>$3,506</th>
<th>Building Number</th>
<th>023</th>
<th>GSF</th>
<th>30,237</th>
<th>Year Built</th>
<th>1949</th>
<th>FCI</th>
<th>0.62</th>
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</table>

### Backlog and 5 year Renewal Forecast by Building ($000's)

<table>
<thead>
<tr>
<th>Subsystem</th>
<th>Backlog</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Total</th>
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<tbody>
<tr>
<td>m.1 All Renewal - SMALL COMPLEX</td>
<td>$2,156</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Total by building</td>
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<td>$0</td>
<td>$0</td>
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<td>$0</td>
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<table>
<thead>
<tr>
<th>Building</th>
<th>FISHER SCIENCE</th>
<th>CRV ($000's)</th>
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<th>Building Number</th>
<th>033</th>
<th>GSF</th>
<th>71,896</th>
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<th>1978</th>
<th>FCI</th>
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</table>

### Backlog and 5 year Renewal Forecast by Building ($000's)

<table>
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<tr>
<th>Subsystem</th>
<th>Backlog</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>b.1 Building Exteriors (Hard)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$513</td>
<td>$0</td>
<td>$0</td>
<td>$513</td>
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<tr>
<td>c.1 Elevators and Conveying Systems</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$208</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>d.1 HVAC - Equipment/Controls</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$1,230</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>f.1 Electrical - Equipment</td>
<td>$1,626</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$1,626</td>
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<tr>
<td>g.1 Plumbing Fixtures</td>
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<td>$0</td>
<td>$417</td>
<td>$0</td>
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<tr>
<td>i.1 Built-in Equipment and Specialties</td>
<td>$3,001</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>j.1 Interior Finishes: Walls, Floors, Doors</td>
<td>$688</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
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<td>$50</td>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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</table>

<table>
<thead>
<tr>
<th>Building</th>
<th>Fac Svcs, Welding Shop</th>
<th>CRV ($000's)</th>
<th>$199</th>
<th>Building Number</th>
<th>070D</th>
<th>GSF</th>
<th>1,800</th>
<th>Year Built</th>
<th>1961</th>
<th>FCI</th>
<th>0.00</th>
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</table>

### Backlog and 5 year Renewal Forecast by Building ($000's)

<table>
<thead>
<tr>
<th>Subsystem</th>
<th>Backlog</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>j.1 Interior Finishes: Walls, Floors, Doors</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>k.1 Painting - Public Areas</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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</tr>
<tr>
<td>Total by building</td>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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</tbody>
</table>
Facility Condition Analysis Example

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CPDC Resource Examples

**Capital Planning Information**

Association of Physical Plant Administrators (APPA)
1643 Prince Street
Alexandria, VA 22314-2818
Phone: 703 684-1446
www.appa.org

Pacific Partners Consulting Group
Facilities Renewal Resource Model (FRRM)
Phone: 408 374-9957
rickb@ppcg.com

**Facility Condition Analysis (FCA)**

3D/International
1900 WEST LOOP SOUTH
SUITE 400
HOUSTON, TX 77027
Phone: 713 871-7014
Fax: 713 871-7181
www.3di.com

Adams Consulting Group
4060 PEACHTREE ROAD
SUITE D201
ATLANTA, GA 30319
Phone: 888 887-9995
Fax: 404 636-4661
www.adams-grp.com
Carter & Burgess Incorporated
777 MAIN STREET
FORT WORTH, TX 76102
Phone: 817 735-6030
Fax: 817 735-6064
www.c-b.com

Facility Engineering Associates
11001 LEE HIGWAY
SUITE D
FAIRFAX, VA 22030
Phone: 703 591-4855
Fax: 703 591-4857
www.feapc.com

ISES Corporation
2165 WEST PARK COURT
SUITE N
STONE MOUNTAIN, GA 30087
Phone: 770 879-7376
Fax: 770 879-7825
www.isescorp.com

Computerized Maintenance Management Systems (CMMS)

Infor (Datastream)
50 Datastream Plaza
Greenville, SC  29605
Phone: 864 422-5001
Fax: 864 422-5000
www.datastream.net
FAMIS Software Inc.
4 PARK PLAZA
SUITE 1000
IRVINE, CA 92614
Phone: 800 774-7622
Fax: 949 553-6559
www.famis.com

Mainsaver Software
15150 Avenue of Science
San Diego, CA 92128
Phone: 800 467-2388
www.mainsaver.com

TMA Systems, LLC
5100 E. SKELLY DRIVE
SUITE 900
TULSA, OK 74135
Phone: 918 858-6600
Fax: 918 858-6655
www.tmasystems.com

VFA Incorporated
266 SUMMER STREET
BOSTON, MA 02210-1112
Phone: 800 693-3132
Fax: 617 350-7087
www.vfa.com
Maintenance & Repair/Capital Renovation Reserves

- A Campus’ Formal Evaluation of Facilities – Tony Valenzuela, San Jose State University

- FACILITIES LIFECYCLE COST:

MAINTENANCE, RETRO-COMMISSIONING AND CAPITAL RENEWAL (with emphasize on Capital Renewal Reserve Approach)
The Lifecycle Cost Elements of Maintaining Your Physical Assets

- Maintenance
  - Planned
  - Preventive
- BUILDING/SYSTEM OPTIMIZATION (AKA Retro-Commissioning – Case Study on How to minimize Maintenance and Capital Renewal)
- Capital Renewal and Replacement Program
  - Building System Replacement
  - Deferred Maintenance
Traditional Facilities Maintenance
Financial Model

Year 1
$7.20 SF
O&M Cost

Year 9
$10.00/SF
O&M Cost

Year 10
Capital Renewal Outflow

TIME
Establishing Capital Renewal Reserve Needs

- **New Construction**
  - Take all major systems from Construction/As-Built Drawings and project lifecycle replacement
  - SJSU took this approach for the New Library (580,000 SF) and the new Campus Village Student and Faculty/Staff housing (980,000 SF) – See SJSU Excel Model

- **Existing Buildings – The various Approaches**
  - Condition Assessment – In depth Audit of the Facility
  - Lifecycle Model Approach (CSU runs a model developed by Pacific Partners) – Developed from parametric tools and campus knowledge
  - % of Cost Replacement Value
  - Depreciation Method
Establishing Capital Renewal Reserve Needs

- **Recommended Approach for Existing building is:**
  
  - Lifecycle Model Approach (CSU runs a model developed by Pacific Partners)
    
    - Each CSU campus already has General Fund facilities model and should not be difficult to include Housing facilities (There may be campuses that already use the Pacific Partner model for Housing Facilities)
  
  - Plus:
    
    Model can be calibrated with specific building knowledge (Models are not perfect and need to be tested with the specific buildings)
Capital Reserve Building Blocks

- **Major Building/Facilities Components**
  - Interior Finishes
  - Building Envelop
  - Hardscape
  - Landscape
  - Mechanical
  - Electrical
  - Plumbing
  - Telco-Data
  - Elevators
  - Building management and Safety Systems
  - Elevators
  - FF&E
Elements That Can Increase Anticipated Capital Renewal Costs

- Code Changes – Seismic or Life Safety
- Accessibility Needs
- Amenities that become outdated or need to be changed to accommodate new programs
- Campus change of Strategy on systems – (i.e. Central Feed utilities v. standalone chiller/boiler)
The SJSU Campus Village Capital Renewal Model – Insert Handout

- INSERT Summary Excel Sheet of Campus Village Model
MITIGATING YOUR O&M AND CAPITAL RESERVE REQUIREMENTS

Monitoring Based Commissioning
Martin Luther King Jr. Library

Large and Complex Building Diagnostic/Calibration After 2 years of Operation
Monitoring Based Commissioning (MBCx) - Goals

- A long-term process employing remote metering/monitoring capabilities and diagnostic protocols to achieve and continuously maintain a high level of system performance by:
  - Identifying and implementing low-capital cost operational and maintenance improvements
  - Training and otherwise leaving building staff with the tools to continuously monitor and optimize the King Library
Commissioned Systems

- **Mechanical**
  - Primary Air Handling Units
  - Special Collections Air Handling Units
  - Atrium and Basement Air Handling Units
  - Terminal Air Units
  - Pumps and Heat Exchangers

- **Lighting**
  - Time of Day Controls
  - Occupancy Sensors
  - Daylighting Controls

- **Energy Management System**
  - Sequences of Operation
  - Network Communications
Monitored Based Commissioning Process Overview

- **Planning Phase**
  - Initial Site Assessment
  - Catalog Known Issues
  - Define Monitoring Requirements
  - Develop M&V Plan

- **Pre-Investigation Phase**
  - Evaluate Monitoring System
  - Calibrate Sensors

- **Investigation Phase**
  - Setup Trends
  - Create Energy Baseline
  - Perform Pre-functional Testing
  - Correct Deficiencies
  - Perform Functional Testing
  - Evaluate/Recommend Improvement Opportunities
Monitored Based Commissioning
Process Overview (cont.)

- **Implementation Phase**
  - Implement Selected MBCx Improvements
  - Verify Improved Operation
  - Generate Systems Manual
  - MBCx Report submittal to Partnership

- **Handoff Phase**
  - Ongoing Diagnostic Tools
  - Training
SJSU MLK Library Project
Measures Identified

- Measures Implemented
  - Lighting Schedule Improvements
  - Occupancy Sensor Calibration (the struggle continues)
  - Correct Photocell Control
  - Terminal Box Airflow Calibration
  - Temperature and Humidity Sensor Calibration
  - Economizer Repair
## Interim Project Results

### Economic Summary Report to PG&E

<table>
<thead>
<tr>
<th></th>
<th>Current</th>
<th>Resulting</th>
<th>Savings</th>
</tr>
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<tbody>
<tr>
<td>KWh</td>
<td>7,750,935</td>
<td>7,086,594</td>
<td>664,341</td>
</tr>
<tr>
<td>KW</td>
<td>843</td>
<td>843</td>
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<tr>
<td>Therms</td>
<td>14,779</td>
<td>14,779</td>
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<tr>
<td>Energy Cost</td>
<td>$930,112</td>
<td>$850,391</td>
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<tr>
<td>Gross Program Cost</td>
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<td>$333,456</td>
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<td>Gross Payback</td>
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<td></td>
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<tr>
<td>PG&amp;E Incentive</td>
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<td>$184,900</td>
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<tr>
<td>Net Program Cost</td>
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<td>$148,556</td>
</tr>
<tr>
<td>Net PB period</td>
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### Energy Consumption Results

<table>
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<th>Month/Year</th>
<th>2003/2004</th>
<th>2004/2005</th>
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<tbody>
<tr>
<td>July</td>
<td>528,550</td>
<td>640,856</td>
</tr>
<tr>
<td>August</td>
<td>878,666</td>
<td>595,748</td>
</tr>
<tr>
<td>September</td>
<td>579,271</td>
<td>617,394</td>
</tr>
<tr>
<td>October</td>
<td>651,749</td>
<td>634,908</td>
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<tr>
<td>November</td>
<td>328,266</td>
<td>595,925</td>
</tr>
<tr>
<td>December</td>
<td>570,597</td>
<td>630,389</td>
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<tr>
<td>January</td>
<td>573,115</td>
<td>571,841</td>
</tr>
<tr>
<td>February</td>
<td>565,510</td>
<td>564,567</td>
</tr>
<tr>
<td>March</td>
<td>615,680</td>
<td>232,349</td>
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<tr>
<td>April</td>
<td>627,934</td>
<td>508,182</td>
</tr>
<tr>
<td>May</td>
<td>943,712</td>
<td>594,900</td>
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<tr>
<td>June</td>
<td>944,000</td>
<td>595,030</td>
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<tr>
<td>Total</td>
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<tr>
<td>Annual Reduction</td>
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</tr>
<tr>
<td>Percentage Reduction</td>
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</table>
Summary

The MLK Library MBCx project has:

- Reduced energy consumption of the facility by at least 7% for the initial MBCx project.
- Obtained $184,900 of Public Good Funds (PG&E incentive) to reduce project costs.
- Identified many additional improvements in energy efficiency and facility operations that are currently being implemented.
Suggestions

- Contact your Campus Energy Program Manager and inquire about the CSU Energy Partnership program – Funds can be available for retro-commissioning and to replace outdated energy conversion equipment
Traditional Facilities Maintenance

Financial Model

Year 1
$7.20 SF O&M Cost

Year 9
$10.00/SF O&M Cost

Year 10
Capital Renewal Outflow
Facilities Financial Model with Retro-Commissioning

Year 1
$7.20/SF

Year 5
O&M + Retro-Commissioning

Year 9
$9.00/SF

Year 10
Capital Renewal Outflow
Contact Info:
Tony Valenzuela
Associate Vice President
Facilities, Development, and Operations
San Jose State University
One Washington Square
San Jose, CA 95192-0010

Voice: (408) 924-1940
Fax: (408) 924-1981

tony.valenzuela@sjsu.edu

http://www.sjsu.edu
Maintenance & Repair/Capital Renovation Reserves

- A Campus’ Housing Program Director’s Plan – Susan Hansen, San Jose Housing

INSERT - Handout
San José State University
University Housing Services
Reserve Strategies
Susan Hansen, Director
Executive Order 876

- Section 7: Reserves
  - 7.1 Reserve Development: The campus president and chief financial officer are responsible for developing and maintaining a campus policy to provide reserves from project revenues for projects funded by debt issued by the Board of Trustees. The campus reserve policies, at a minimum, should address the following needs:
    - Major Maintenance and Repair/Capital Renovation and Upgrade
    - Working Capital
    - Capital Development for New Projects
    - Catastrophic Events
  - 7.2 Reserve Review: At a minimum of once every three years, each campus shall conduct an in-depth review to assess the adequacy of the reserves and the campus reserve policies applicable to the projects funded by debt, and shall make necessary adjustments and changes to account for changing conditions. For Major Maintenance and Repair/Capital Renovation and Upgrade Reserves, the reviews should include formal studies of facility systems and necessary funding levels to cover all aspects of cost of replacement through the reserve funding plan.
History

- Housing Officers Proposal of four mandatory reserves (circa 1995):
  - Capital Renovations and Repairs
    (Goal: based on projections)
  - Operating Reserve / Working Capital
    (Goal: 33% of operating)
  - Catastrophic Events
    (Goal: based on projections / research)
  - Capital Development
    (Goal: 10% of cost of new construction)
Considerations

- Weighing Consultant Expertise / Housing Professional Expertise
- Keep complete and detailed records of your operations – historical data may prove more accurate and helpful than consultant “expertise”
  - Capital Renovations
  - Maintenance and Repair Replacement
  - Utilities usage

This evaluation addressed operations issues starting with major processes and migrated through specific functions and tasks to support systems and ultimately staffing and projected costs.
Maintenance and Repair Consultant
Support Possibilities

Campus Village Operations

Building Systems
- Structure
- Exterior Skin
- Windows
- Roof
- Landscape
- Interior Finishes
- Appliances
- HVAC System
- Plumbing
- Electrical
- Furnishings
- Office Equipment

Information Systems
- Fire Alarm
- HVAC Controls
- Security
- Telecom
- Data
- Video
- Resident Mgmt System
- Gaming
- Point of Sale

Operating Functions
- Property Mgmt
- Bldg Maintenance
- Janitorial Services
- Capital Repairs
- Asset Mgmt
- Residential Life
- Leasing/Admin
- Retail Sales
- Parking
- Network Admin
- Security Ops

Staffing
- Develop to support all functions
Potential Report Areas

- **EXECUTIVE SUMMARY**
- **PART 1 – OVERVIEW**
  - Facility Profile
- **PART 2 – FINANCIAL REVIEW**
  - Financial Summaries
- **PART 3 – REPAIR & MAINTENANCE**
  - Overview
  - Service Contracts Versus Staffing
  - Work Orders
  - Preventive Maintenance
  - HVAC
  - Electrical
  - Elevator
  - Fire and Life Safety
  - Utilities & Energy Management
- **PART 4 – PROPERTY ADMINISTRATION**
  - Staffing
  - Budget Development and Tracking
- **PART 5 – CONTRACTED SERVICES**
  - Contracted Services Administrative Overview
  - Janitorial
  - Waste removal
  - Recycling
  - Roads & Grounds
  - Security

Appendices:
- **PART 6 – PROPOSED BUDGET**
- Appendix A-Service request response times
- Appendix B-Example labor report
- Appendix C-Equipment Life Cycle Management Program
- Appendix D-HVAC Program
- Appendix E-Example IAQ Program
- Appendix F-Example Utility Tracking
- Appendix G-Sample Electrical PM
- Appendix H-Vertical Transportation
- Appendix I- Commissioning
Maintenance and Repair Consultant Support Possibilities

- APPROACH: A team-oriented approach to first focus on facilities management issues
  - Housing staff should be prepared and willing to be part of a team that collects information
  - Consultant should lead the process and collect comparative data from ‘the outside’
Jones Lang LaSalle Corporate Property Services group all expanded their work “on the operating budget and reserves model to advise on best practices in commercial, corporate and residential lease management which could be applicable in the student environment”

This was not “apples to apples”
Maintenance and Repair Consultant Support Possibilities

Project Objectives:
1. Specific to the Facilities Management issues, the objective was for the team to perform an assessment of occupancy cost drivers and facilities operations to identify opportunities for operating the Campus Village project utilizing industry occupancy cost benchmarks and implementing best practices through improved processes, practices and procedures.
FacilityView Assessment Process:

- **Assessment Scope**
  - Jones Lang LaSalle professionals will perform a review and baseline evaluation of the planned facilities. Our team will consist of experienced facility management, technical support, project management and financial specialists.

- **On-Site Data Gathering (1 week)**
  - Generally, the emphasis of these studies is to create an accurate baseline of the current facility management organization managing the existing properties, costs, contracted services, and processes. To adequately evaluate existing costs and procedures, it is usually necessary to conduct some limited interviews with existing facility personnel.
Examples of information needed include:

- Historical operating budget information for services to be provided at the Campus Village
- Proposed Staffing plans
- Any service contracts
- Site descriptions, including floor plans, lists of major equipment, and headcount/Occupancy information, with this information derived from our project team.
- Maintenance and service level specifications for project
FacilityView Assessment Process:

- On-Site Operations Review (2-3 days)
- A review will be made of existing mechanical areas, building files, work areas, building systems, and records covering the following general categories:
  - Emergency procedures
  - Fire protection and life safety systems
  - Work order volumes and procedures
  - Preventive/predictive maintenance administration
  - Maintenance inspection Technical documentation
  - Operations administration
  - Support (administrative) services
  - Energy management
FacilityView Assessment Process:

- **Analysis Phase (2 weeks)**
- Evaluate Information
- Establish SJSU’s cost position and budgets using standard Building Operators and Management Association (BOMA) categories; compare to industry and Jones Lang LaSalle data
- Comment on service standards
- Identify high-cost standards, building systems, and/or inefficient operations
- Create process flow diagrams for major service functions, linked to planned or available technology to facilitate efficient operations
- Comment on SJSU’s organizational model for delivery of services
- Recommend staffing models to optimize operational efficiencies
- Evaluate existing contract services
FacilityView Assessment Process:

- Document Findings
  - Identify opportunities to reduce real estate operating costs
  - Identify anticipated costs under existing models
  - Identify existing organizational model for the delivery of services and alternative models to optimize long term value
  - Identify existing service contract structure(s) at each location and alternatives to increase efficiencies
FacilityView Assessment Process:

- **Reporting Phase**
  - The Jones Lang LaSalle team will assemble all findings and present a written report, executive presentation and implementation plan to SJSU.
  - Jones Lang LaSalle will prepare a report to include:
    - Proposed first year operating budgets
    - Comments on planned technology and potential variations to enhance operating efficiencies
  - Management Plan including:
    - Labor model
    - Contract Specification for services Draft Vendor RFP Document
    - Proposed Engineering and Operations maintenance manuals
      - Team Safety Handbook
      - Preventive Maintenance Program recommendations
FacilityView Assessment Process:

**Timing:** The project will commence upon authorization to proceed. The first two weeks of the project will focus on documentation reviews and site visits. We will require active interaction between the Jones Lang LaSalle team and SJSU personnel intimately familiar with the project to provide access throughout existing facilities as required. We anticipate that the Facilities Assessment can be completed within six (6) weeks, during which time we will schedule 2 interim progress meetings to discuss preliminary results. Following the progress meetings and assessment period, we will complete our final report and submit to SJSU within two (2) weeks of the progress meeting.
**Other Estimating Measures**

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<tr>
<th>Multi-family housing (unit repairs only)</th>
<th>Reserve per unit</th>
<th># of Units</th>
<th>Reserve per year</th>
<th>Reserve per year group</th>
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$5,247,000

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<th>Multi-family housing (grounds, structure, utilities)</th>
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### Consultant Summary Projections (Example)

#### Detailed analysis by component

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<th>2003 REQUIRED CAPITAL RESERVES</th>
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<th>REQUIRED CAPITAL EXPENSE YEAR 2</th>
<th>REQUIRED CAPITAL EXPENSE YEAR 3</th>
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**Recommended 2003 Capital Reserves**: $23,784,090

Historical data would suggest that the first three years of operations would require more than $0 of reserve expenditures from Capital Renovations & Repairs.
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<th>NUMBER OF UNITS</th>
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<th>EXPECTED USEFUL LIFE (YRS)</th>
<th>EXPENSE GROWTH</th>
<th>INVESTMENT RATE OF RETURN</th>
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**TOTAL 2003 COST** $3,388,575  **REQUIRED CAPITAL RESERVES** $5,807,609
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### Maintenance and Repair Projects

#### 06/07 07/08 08/09 09/10 10/11 11/12

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<td><strong>SAMPLE DETAIL FOR PREVENTATIVE MAINTENANCE AND REPAIR CATEGORIES</strong></td>
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<tr>
<td>10/100 Switch &amp; Server for Computer Lab**</td>
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<tr>
<td>APC Universal Power Supplies for Desktops</td>
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<td>Computer Lab Computers %</td>
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<td>Housing Backup Storage System</td>
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<td>Replace ResNet Alcatel Equipment%</td>
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<td>ResNet firewall/IDS/VPN%</td>
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<td>RMS 5.0 Upgrade</td>
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<td>Bulletin Boards (include installation)</td>
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<td>Repair DC Lighting (interior)</td>
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<tr>
<td>Replace refrigeration unit in DC</td>
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</tr>
<tr>
<td>Replace rooftop AC unit in DC</td>
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<tr>
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<tr>
<td>ADA Accessibility (with RFR)</td>
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<tr>
<td>Repair DC Lighting (interior)</td>
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<tr>
<td>8th St. Hall Roof Replacement (solar panels/asbestos)#</td>
<td>300000</td>
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</table>

SJSU is currently melding our consultant plan with our “in-house” plan for renovations and repairs and working to follow the established percentages for each reserve sub-category.
Beware of “Assumptions”

• **Assumptions:**
  “Line items of $10,000 minimum value and of known quantity are included in this projection.”
  This omits many items that might add up when budgets are tight.
Maintenance & Repair/Capital Renovation Reserves

- Financing & Treasury Information
E.O. 876 allows campuses to define their specific reserve goals, however, both categories should be considered:

- Maintenance & Repair – relating to systems & facilities required for ongoing, routine operations and maintenance of those buildings.
- Capital Renovation – the systematic replacement of building and utility systems to extend their useful life.
Deferred Maintenance - F&T Guidelines

- Work that has been deferred on a planned or unplanned basis due to lack of funds in the annual budget on building components that have not reached their expected life cycles.

- In an ideal situation, by addressing Maintenance & Repair/Capital Renovation, then there would be no deferred maintenance, however, it is recognized that it exists and needs to be planned for.
Deferred Maintenance – F&T Guidelines

- When the housing program was decentralized in 1993, the Chancellor’s Office required each campus housing program to set aside “at least 25% of the surplus revenue until the minimum reserve” was achieved.
- The minimum reserve was set by bond covenant requirements.
- However, the Systemwide Revenue Bond program Indenture replaced the old Housing System Bond Resolution. The CSU has more flexibility now. Thus, E.O. 876 incorporated this flexibility, allowing campuses to determine their own reserve goals.
Housing Reserve Plan – An Inside Perspective

- Preston Allen, California Polytechnic State University, San Luis Obispo
A CSU Example
San Luis Obispo Housing
DORMITORY REVENUE FUND - HOUSING (580-261)
RESERVE POLICY
Source: Preston Allen, Housing Director

BACKGROUND

In January 1994, the Student Housing Task Force recommended decentralization of financial administration for the Dormitory Revenue Fund housing system and the CSU subsequently began plans to implement the Task Force model. Effective with the 1994/95 fiscal year, campuses were given responsibility for the financial viability of the housing program. Operational surpluses in the Dormitory Revenue Fund -Housing (DRF- Housing) were distributed as were system wide maintenance and repair reserves.

In 1995 in recognition of the decentralization of the DRF-Housing program and the need to insure fiscal viability the campus developed the DRF-Housing Reserve Policy. This policy complies with Executive Order 876, Financing and Debt Management Policy, dated July 18, 2003.

CSU SYSTEM REQUIREMENTS

Although financial administration of the Housing Program has been decentralized, some system wide financial obligations remain.

• The DRF-Housing is required to make debt service payments on bonds issued for the construction of housing facilities.

• DRF-Housing is required to contribute to the debt service pool until the year 2008, or until the remaining pooled bonds are retired, whichever comes first.

• DRF-Housing must make annual payments to repay any outstanding loans financed from pooled system wide reserves.

• DRF-Housing is required to pay its share of system wide expenses, including audit fee, property insurance, bond service fee, state pro-rata and the Chancellor’s Office service fee.
CAMPUS REQUIREMENTS

Financial decentralization of the Housing program allows for each campus to have greater flexibility in the management of their program, but places all responsibility for the solvency and liquidity of the fund with the campus. In order for the campus to manage effectively, a long term financial plan is necessary that will not only ensure the financial stability of the Housing Program but will provide reserves for the long term preservation of its capital assets.

• DEFINITIONS AND TERMINOLOGY

An enterprise fund is a self-supporting legal and fiscal entity that exists for certain specified purposes. The Dormitory Revenue Fund-Housing is an enterprise fund that exists for the operation of student residence halls and is self-supporting primarily from room rental income.

The difference between the total assets and total liabilities of an enterprise fund is referred to as either fund equity or “retained earnings” (and sometimes, “fund balance”). Normally, changes in fund equity are the result of annual operations--namely, the difference between revenues and expenses.

Disclosure: During the annual operating budget development cycle, a combined statement of revenues, expenses, and changes in retained earnings (or fund equity) will be used as the primary format for purposes of planning and disclosures. Other general purpose financial statements (balance sheet, etc.) will also be prepared. These statements are prepared by staff in Fiscal Operations.

• RESERVES

Reserves (sometimes also referred to as “reserved retained earnings”) are portions of the fund equity that have been committed by the appropriate administrative authority for specific purposes. These reserves may either be retained in the DRF-Housing fund equity or they may be transferred to another fund entity, depending on CSU regulations and policy. For example, fund equity reserved for the annual bond debt service is transferred each year from DRF to another CSU fund established for payment of interest and principal on outstanding bonds and for the redemption of bonds. Other reserves may remain classified as such within the DRF-Housing fund equity for indefinite periods of time.

Unless otherwise mandated, it is University policy to avoid the transfer of reserves out of the DRF-Housing fund equity. This will maximize interest income and optimize University fiscal flexibility.
Seven (7) reserves will be established in the Dormitory Revenue Fund - Housing (580-261). Each reserve will receive an annual contribution as determined during the budget development process each year. This contribution will be based on long term needs and will be reviewed annually to ensure progress toward meeting those needs. It is also recommended that as system wide requirements are reduced or eliminated, any savings realized be included in the budgeted reserves. A minimum of 5% of gross revenue will be budgeted for reserves. All surplus revenue at year end (over the amount budgeted) and/or unencumbered balances will be distributed to the reserves. If necessary, funds can be transferred between reserves with the approval of Vice President for Administration and Finance.

**Maintenance Reserve (50% of the annual reserve contribution)**
This reserve together with the funds transferred to DBMER will be used for the maintenance and repair of the residence halls.

**Capital Renovation Reserve (30% of the annual reserve contribution)**
This reserve will provide funding to renovate and improve current housing facilities. Projects funded from this reserve would include major structural alterations to address the programmatic needs of Housing and to maintain the viability of the program.

**Working Capital Reserve (5% of the annual reserve contribution)**
This reserve will be used for operational emergencies or problems that arise during the budget year.

**Capital Development Reserve (3% of the annual reserve contribution)**
This reserve will assist in the expansion of campus housing facilities either through construction or purchase of off-campus facilities. Capital investments will normally require a combination of DRF Housing reserve funds and borrowed funds.

**Catastrophic Events (2% of the annual reserve contribution)**
This reserve will be used to pay for minimal losses resulting from natural disasters. It is understood that funds from this reserve alone will not be adequate to pay for all losses should the housing facilities sustain major damage.

**Technology Reserve (10% of the annual reserve contribution)**
This reserve will be used to upgrade and add technology to the existing residence halls and apartments.
**Agriculture Housing Reserve (based on Ag Housing net income)**
This reserve will be used to upgrade and provide capital funds for the Ag Housing program on campus. This program operates within the DRF Housing fund to the benefit of the College of Agriculture.

- **APPROVAL PROCESS FOR RESERVE SPENDING**

The *Maintenance Reserve and the Capital Renovation Reserve* will utilize a committee structure to identify projects for the coming budget year. A formal facility assessment, funded from the Maintenance and Capital Renovation reserves will be conducted on a rotating basis by building as required by EO 876. This will balance the need for the assessment and the costs associated with procuring the service. The proposed project list will include projects shown in the facility audit and those assessed by the committee members as critical to housing. Coordination with other campus projects will be considered in the review process as well as the availability of funds. The committee will forward their recommendations, including prioritizations, by February 1 of each year to the Assoc. Director of Budget and Analytic Business Services for verification of available funding and review of the recommendations. The committee will be notified of any necessary adjustments and the final list will then be sent to the Vice President for Administration and Finance for approval. Once final approval is received, Budget and Analytic Business Services will establish expenditure accounts and budgets and communicate the necessary information to all parties. Maintenance projects will be given a completion period of two years after which projects will be canceled and funding returned to the funding source (DRF-Housing or DBMER).

The committee members will include the Director of Facility Services, Asst. Director of Housing and Business Services and members of their staffs as needed.

Expenditures from the *Capital Development Reserve* could include construction of new facilities or purchase of existing off campus facilities. Current campus practice has existing committee structures to address new construction on campus therefore projects of this nature should adhere to those practices. Consideration to purchase new facilities should require an analysis to determine financial impacts on the Housing program as well as on the University as a whole. Analysis should be performed by Housing Services, Fiscal Services and Budget and Analytic Business Services. All expenditures in this reserve will require the approval of the Vice President for Administration and Finance. Once final approval is received, Budget and Analytic Business Services will establish expenditure accounts and budgets and communicate the necessary information to all parties.
The **Catastrophic Events Reserve** will require the approval of the Vice President for Administration and Finance. Once final approval is received, Budget and Analytic Business Services will establish expenditure accounts and budgets and communicate the necessary information to all parties.

The **Working Capital Reserve**, as stated above, will be used for emergencies in the annual operations of the Housing program. All requests for use of these funds should be made to the Vice President for Administration and Finance. Once final approval is received, Budget and Analytic Business Services will establish expenditure accounts and budgets and communicate the necessary information to all parties.

The **Technology Reserve**, as stated above, will be used for the maintenance and upgrade of technological resources in the Housing facilities. The Director of Housing with input from the campus Information Technology Services (ITS) will forward recommendations on use of these funds to the Vice President of Administration and Finance for approval. Once final approval is received, Budget and Analytic Services will establish expenditures accounts and budgets and communicate the necessary information to all parties.

The **Ag Housing Reserve** will be used for maintenance and replacement of Ag Housing facilities. The Director of Housing, Asst. Director of Housing Services together with the College of Agriculture will forward recommendations on use of these funds to the Vice President of Administration and Finance for approval. Once final approval is received, Budget and Analytic Services will establish expenditures accounts and budgets and communicate the necessary information to all parties.
DORMITORY REVENUE FUND - HOUSING
BUDGET TIMELINE

July
Vice President for Administration and Finance approved annual operating budget for the DRF-Housing is implemented. Expense and revenue budgets are recorded in the accounting system.

August
Fiscal Services staff prepare and distribute fiscal year-end closing financial statements, including changes in fund equity and status of reserves.

September - October.
Budget and Analytic Business Services in consultation with Housing Services reviews reserve levels and needs. If an adjustment in reserve distribution percentages is needed, a recommendation will be forwarded to the Vice President for Administration and Finance for approval.

November - January
Develop and/or update the list of residence hall facility maintenance projects for the next fiscal year and forward recommendation to the Vice President for Administration and Finance for approval.

February
A list of facility maintenance projects for the next fiscal year is submitted by Budget and Analytic Business Services to the Vice President for Administration and Finance for approval and implementation. Budget and Analytic Business Services establishes project accounts, records project budgets, and disseminates information to affected managers.

February - March.
Operating budgets are developed for the next fiscal year including proposed license rates and occupancy projections. Proposed increases in the license rate are forwarded to the Campus Fee Advisory Committee for review and subsequent action by the President.

April
Proposed DRF-Housing operating revenue, expense, and reserve budgets are assembled and submitted by Budget and Analytic Business Services to the Vice President for Administration and Finance for approval and implementation.
Working Capital – Roundtable Discussion

- Rosa Renaud
Working Capital – F&T Guidelines

- E.O. 876 allows campuses to define their working capital reserve goals.
In the absence of a campus defined working capital goal, the campus can adopt the 1993 Student Housing Task Force recommendation:

- The minimum recommended reserve level is equal to 1/3 of the annual operating budget.
- This reserve should be used only in an instance whereby annual revenues fail to meet operating expenses in a fiscal year.
- Should an annual budget deficit occur, immediate action should be required to restore the budget to balance as well as restore the fund to its minimum level.
- If a deficit exceeds the balance available from the Working Capital Reserve, the campus should exhaust all available opportunities from other internal campus programs, including their auxiliaries, to obtain subsidies thru loans, grants, and sales of property.
Capital Development for New Projects

- Rosa Renaud
Capital Development for New Projects

- During the past year, the construction market has changed tremendously with rising costs in:
  - Concrete;
  - Steel;
  - Lumber.

- Factors affecting costs have been due to an increase in construction in China, Las Vegas, and states impacted by Hurricane Katrina.
Capital Development for New Projects – F&T Guidelines

- E.O. 876 allows campuses to define their capital development reserve goals.
- While a housing program may have the financial strength to afford the future debt service associated with a new project, the program still needs to have reserves set aside to pay for the Preliminary Working Drawings (PW) costs. (This is needed even if the costs will later on be reimbursed thru the financing).
Capital Development for New Projects

- PW costs on recent projects have ranged from $1 million to $4.5 million or 3.4% - 2.8% of total project costs. (These costs are covered initially by housing program reserves).
- Total project costs for the past year have been averaging $269/square foot or $85,000/bed space.
- A 400 bed facility recently reviewed by the HPRC was for $29 million.
Capital Development for New Projects

- An equity contribution to the project can substantially reduce the annual debt service of a new project, thereby making it more affordable.

- For example, Northridge:
  - Total Project Budget = $28,976,000
  - Reserve Contribution = $14,039,000
  - Aver. Annual Debt Service with Contribution = $1,174,646 (with a total debt service of $37.5 million)
  - Annual Debt Service if $0 Contribution = $2,229,944 (with a total debt service of $71.2 million)
  - This has a big impact on the Debt Service Coverage Ratio and on rental rates.
Capital Development for New Projects

- Reserves can provide the campus opportunities to act quickly on purchasing properties, for example
  - Chico: has been buying nearby homes as opportunities arise. The long run goal will be to demolish and create new housing facilities.
  - Sonoma: purchased nearby land that in the future will be used for student and faculty/staff housing facilities.
Capital Development for New Projects

- The CSU has the authority to purchase land only:
  - By gift or bequest;
  - With revenues from a parking or housing program.

- See SUAM section 9019, Real Property Acquisition, under CPDC, Land Records section.
Financing & Treasury Summary

- Rosa Renaud
Elements of a Good Reserve Plan

- Reserve Plan is documented, approved, and benchmarks are justified.
- At minimum, each category and transfer goal is set for:
  - Maintenance & Repair/Capital Renovation and Upgrade;
  - Working Capital;
  - Capital Development for New Projects;
  - Catastrophic Events.
- While separate accounts are not required for each category, the reserve plan must have a spreadsheet that tracks designated funds for each category.
- Annual Timeline – evaluations of the reserve plan are made on a planned and consistent basis.
- Designees are formally approved and identified.
Elements of a Good Reserve Plan

- Transfer Goals are realistic and achievable:
  - There is a method establishing transfer goals. This is documented.
  - A formal evaluation of facility needs are made by the campus CPDC department along with an outside consultant.
  - The Housing Program makes annual transfer goals. Goals are achievable and the program is demonstrating, on a consistent basis, its commitment to the goals by making the transfers.
Elements of a Good Reserve Plan

- An annual evaluation of “actuals” versus benchmarks is made, documented, and approved.
- If you miss a benchmark, then document why that happened. What can be done to correct missing the benchmark? Is it unrealistic? Are rental rates too low? Are other reserves not adequate? Was this discussed with the Vice President?
- If there is a consistent pattern of missing benchmarks, then that would be a problem, both from an audit perspective but from a best practices perspective.
Executive Order 876, Section 7 Reserves

7.1 Reserve Development: The campus president and chief financial officer are responsible for developing and maintaining a campus policy to provide reserves from project revenues for projects funded by debt issued by the Board of Trustees. The campus reserve policies, at a minimum, should address the following needs:

- Major Maintenance and Repair/Capital Renovation and Upgrade
- Working Capital
- Capital Development for New Projects
- Catastrophic Events
Executive Order 876, Section 7 Reserves

- **7.2 Reserve Review:** At a minimum of once every three years, each campus shall conduct an in-depth review to assess the adequacy of the reserves and the campus reserve policies applicable to the projects funded by debt, and shall make necessary adjustments and changes to account for changing conditions. For Major Maintenance and Repair/Capital Renovation and Upgrade Reserves, the reviews should include formal studies of facility systems and necessary funding levels to cover all aspects of cost of replacement through the reserve funding plan.
Housing Task Force

- Purpose – To address audit findings to review and update as necessary Title 5 and SUAM pertaining to:
  - Guest and visitor policies;
  - License agreements;
  - Accounts receivables for past due notices;
  - Other.

- Formation – Volunteers needed. Who is interested to participate? To Chair? (Please sign the sign up sheet).

- Timeline – Goal is to have revisions made by Spring 2007. Meetings would be conducted via conference calls, approx. every two months, with two in person meetings.