

FACILITY CONDITION/MAINTENANCE OVERVIEW

As part of the condition survey the facility condition analysis conducted for each facility in 2003 was updated. The analysis updated the rating of some 23 separate construction and operations/adequacy characteristics for each facility. A score was assigned to each characteristic and all scores were totaled as an overall condition score for the facility. The score for a facility can range between 146 points and 730 points. The higher the score received by a facility the poorer its overall condition. The entire score range was subdivided into five sets of score ranges, and a condition rating designation was assigned to each range. The ranges and associated condition ratings are as follows:

- 146 – 175 = Superior;
- 176 – 275 = Adequate;
- 276 – 350 = Needs Improvement/Additional Maintenance;
- 351 – 475 = Needs Improvement/Renovation (If facility merits keeping);
- 476 – 730 = Replace or Renovate.

A detailed discussion of the site and facility condition analysis process, including the scoring process, is provided in *Appendix C*.

Facility Condition Overview

The average score for the facilities at Green River is 429. This score indicates that, in the opinion of the survey consultant, the facilities at the college need improvement through renovation. Individual facility scores ranged from a low of 146 for the International Village Building (A, C, D), the Bleha Performing Arts Building, and the new Technology Center to a high of 730 for Science & Technology (A, B, C, D), Continuing Education, Human Resources, and the Fitness Center. There are a total of eight buildings in the superior range, two buildings in the adequate range, one building needs improvement through additional maintenance, five buildings that need improvement/renovation, with the remaining fourteen buildings rated to be replaced or renovated. The majority of the buildings in the replace or renovate range, however, are either scheduled for replacement in the next biennium, or have been identified by the College master plan as candidates for future replacement. The latter group of buildings will be the focus of funding request in upcoming biennia.

A similar analysis was conducted for the individual sites by evaluating eight site characteristics. Site condition scores can range from a low of 36 to a high of 175. As with the facility condition analysis, the lower the score the better the overall condition.

The total site condition score for Green River is 55 for the main campus including the nearby Child Care Center. The Enumclaw site is scored at 45. Overall the main campus is in good condition and has good potential for further development and growth. The only potential issue is that the college leases and occupies Department of Natural Resources land. Historically this has not been a problem as much as it has been a nuisance with additional layers of bureaucracy, federal permitting for projects, and DNR approval of future work. The site is heavily wooded with buildings tucked into complexes and open spaces occupying central parts of the campus. One problem with the main campus is that signage is not clear for the visitor to get to the site, park their vehicles, and determine where to go. A clear path of travel should be established and clearly marked to avoid confusion.

The overall condition of the facilities on campus continues to improve since the first baseline survey conducted in 1995. Much of this improvement has been the result of the capital repairs to roofs, HVAC systems, and some exterior closure elements. In addition there have been some minor renovation and remodel projects that have also contributed to the overall enhancement to the facility condition.

Preventive Maintenance Overview

In its responses to a maintenance management questionnaire that was sent to the college in advance of the condition survey, the college maintenance organization has indicated that it has been using a computerized maintenance management system. The maintenance organization has tried repeatedly to implement the FM-1 system to track PM work. The reaction to FM-1 has generally been that it is not user friendly and quite difficult to use. The maintenance department is currently trying to implement the latest version. If this latest attempt does not work, a new program will have to be found and implemented. The maintenance organization is augmenting the FM-1 system with Excel work sheets for both PM and non-PM work.

The college currently has a PM program in place for HVAC equipment and roofs on an annual schedule, but is using a manual method for scheduled maintenance. It was estimated that 2,000 labor-hours were completed over the last two years for HVAC PM work and other PM work. The backlog of uncompleted but scheduled PM work orders each of the last two years is estimated at 50%. The maintenance staff has a complete HVAC equipment inventory and approximates 500 pieces of equipment. In the previous report it was noted that basic roof maintenance, including debris removal, flashing joint caulk maintenance, and minor patching, was in need of improvements.

Facility Maintenance Management Overview

The effectiveness of a facility maintenance program, which is reflected in the overall condition of an organization's facilities, depends on several factors. These include the size and capability of the maintenance staff, the financial resources that are provided and the maintenance philosophy of management. Each of these elements has been evaluated for the college to provide an overall assessment of the current maintenance program.

As part of the 2005 condition survey update a maintenance management questionnaire was sent to the plant director at each college. This questionnaire solicited input as to current maintenance staffing and funding, and asked each college to provide basic information on the status of their PM programs, work management protocols and use of computerized maintenance management systems. It also requested input on the key maintenance management issues facing the college. This information was used as the basis for the discussion that follows.

Maintenance Staffing and Operations

The physical plant at Green River encompasses approximately 494,439 gross square feet. These facilities are maintained by a staff of eleven people (6 full time equivalent workers). This staff has the following composition:

- ◆ 1 Supervisor of Maintenance at 67% time
- ◆ 1 HVAC & Electrical Repair-person at 30% time
- ◆ 1 HVAC & Electrical Repair-person at 90% time
- ◆ 1 Plumber at full time
- ◆ 4 General Maintenance people at 50% time
- ◆ 2 General Maintenance people at 33% time
- ◆ 1 Supervisor of Grounds and Utilities at 50% time

The part-time status of most of the staff members means that the college has an effective full-time equivalent maintenance staff of six people.

In order to analyze the non-PM workload at the college, information on the approximate number of maintenance and repair work orders, not counting PM, was requested. The college indicated that approximately 1,764 work orders were generated annually over the last two years.

Labor-hour and material costs for non-PM work were also tracked for these work requests. Annually, over the last two years labor-hours amounted to approximately 10,000 labor-hours and the material costs were approximately \$62,000.

Additionally, approximately 2,000 labor hours of HVAC PM and other PM was completed annually over the past two calendar years. Based on the annual schedule for HVAC PM, there is an approximate annual backlog of 50% over each of the last two years.

Tracking of the college maintenance-hours and labor/material costs should result in an enhanced ability by the maintenance management staff to measure workload and performance, as long as the system functions properly and problems with operation can be resolved. A continued and improved tracking system for maintenance labor-hours and material cost expenditures allows the college to more accurately track real time maintenance expenditures. Long-term use of such a tracking system will make it possible to perform trend analyses on building system component or equipment reliability and life-cycle costs. It will also make it possible to develop defensible data to use in requesting additional maintenance funding.

As part of the workload evaluation process, information on what percent of the total non-PM work orders for each of the last two calendar years was backlogged (uncompleted) at the end of each year was also requested, along with the major cause of backlogged work. In response, the college indicated that there was a 5% average backlog over each of the past two years. The backlogs were mainly due to understaffing. The average / accepted backlog standard is 20% to 25% and so the college's backlog percentage should be considered exceptional.

The approved budget for maintenance and operations (not including utilities, grounds, and janitorial) for Fiscal Year 04 was \$504,869, \$463,499 for capital repair, and \$968,368 total. For Fiscal Year 05 the approved budget for maintenance and operations was \$558,029, for capital repair was \$463,500, and the total was \$1,021,529.

The maintenance organization at the college was also asked whether or not the maintenance staff performs tasks not typically considered as facility maintenance, such as installing or repairing instructional equipment, assembling office furnishings and performing remodel/improvement activities. The College responded that non-maintenance work requirements often conflict with the staff's routine maintenance activities.

In many effective maintenance organizations, functions such as office furniture and accessory installation, and other related functions are typically performed by lesser compensated staff, such as custodians, both to reduce the cost of these functions and to optimize maintenance staff productivity on core maintenance functions. Similarly, non-capital remodel work is often contracted, as many maintenance organizations have discovered that this strategy is actually more cost-effective than relying on in-house performance. The college indicated that major HVAC equipment and mechanical service/repair work is typically contracted out. However, if collective bargaining agreements prevent this type of work from being contracted or performed by other staff, the College may need to look at hiring additional maintenance staff.

Maintenance Staffing Benchmark Comparisons

Since 1999 the survey consultant has been comparing community and technical college maintenance staffing data with data developed by professional organizations in an attempt to establish some meaningful benchmarks for analyzing staffing adequacy. Several professional organizations, most notably the Association of Higher Education Facilities Officers (APPA) and the International Facility Management Association (IFMA) have undertaken initiatives in the last several years to benchmark various aspects of facility management and maintenance. One area of focus of these benchmarking efforts is maintenance staffing. APPA and IFMA publish periodic comparative data gathered through in-depth surveys of a wide variety of maintenance organizations. For APPA the last major comparative facility operating cost and staffing report for educational facilities was completed in 2004 and is titled "2003-2004 Facilities Performance Indicators." For IFMA, the last major facility operations and maintenance survey was completed in 2004 and is titled "Benchmarks IV - Research Report #25".

The APPA survey provides data on FTE maintenance staffing by type of educational institution and size of student enrollment. The average FTE staffing for two-year institutions provided by the latest APPA survey is presented below. The APPA survey does not provide data on GSF of buildings maintained per staff person--another comparative staffing benchmark that is often used.

IFMA similarly provides maintenance FTE staffing data from its survey. In addition, IFMA breaks this data down across several ranges of physical plant sizes. For comparison with the community colleges, the size range of 250,000 to 500,000 SF was selected from the IFMA data as representative of the average size of a state campus. The average staffing reported by IFMA for this size of plant is also presented below:

	<u>2004 APPA</u>	<u>2004 IFMA</u>
Skilled workers	8.0	9.0
Unskilled workers	2.0	*

** The IFMA survey no longer breaks down workers by skilled and unskilled. The number provided under "Skilled Workers" represents the total.*

Since the IFMA survey provides the FTE staffing data by physical plant size range, dividing the upper end of the selected range (500,000 GSF) by the staffing FTE provides an approximation of the number of GSF maintained per staff person. In this case, that figure is 1:55,555 GSF counting both skilled and unskilled workers.

The data supplied by Green River CC indicates that each of the six full-time equivalent maintenance staff at the college is responsible for approximately 82,400 GSF of space. This is roughly **46% more** space responsibility than the 55,555 SF comparative average of the IFMA survey.

The APPA average staff of 10.0 workers is also **1.67 times greater**, and the IFMA average staff of 9.0 workers is **1.5 times greater** than the six staff at Green River. What is unknown is what size range of physical plant the average APPA data reflects. APPA staffing data is, however, also available based on ranges of student enrollment. For the enrollment range of 5,000 FTEs to 5,999 FTEs, which encompasses the 5,275 state-supported FTEs at Green River in 2004/2005, the APPA data indicates a staff of 613 which is only 2.17 times **greater** than staffing at Green River.

The differential in space maintained per staff and staffing compared to the benchmarks ranges from moderate to high. However, based only on the student FTE benchmark the differential is quite significant. Based on the data an assumption can be made that maintenance staffing at the college is inadequate. However, what is unknown is how the use of temporary help and independent outside contractors by the college affects this comparison.

Maintenance Funding Benchmark Comparisons

A second important question for the community and technical colleges is whether funding for preventive and routine maintenance and repair of facilities, typically allocated to a college as M&O funding, is adequate. Though the issue of what constitutes an adequate level of routine maintenance funding is difficult to resolve, in recent years facility maintenance organizations in both the public and private sectors have begun to rely on benchmarking studies as a way to evaluate the adequacy of their facility operating funds.

As part of their efforts to provide operations and maintenance benchmarks, APPA and IFMA also provide operations and maintenance cost data against which organizations can compare their facility operating costs and evaluate the adequacy of their funding. These costs are provided per gross square foot (GSF) of space, and are derived through detailed member surveys conducted by both APPA and IFMA. The most recent benchmarking efforts by both IFMA and APPA were completed in 2004. Operating cost categories covered by the IFMA and APPA surveys include maintenance, utilities, roads and grounds, security and administration. However, the IFMA and APPA surveys do not cover all of the same categories. In addition, IFMA does not provide data on capital renewal, while APPA provides capital renewal costs as a separate category. The APPA data is provided separately for private and public colleges, while IFMA only provides data for educational institutions as a group that includes private institutions.

To look at individual cost categories, the costs that are common to both the IFMA and APPA surveys are presented below. These costs include janitorial, maintenance, utilities and grounds/roads. Only public college data from the APPA survey is included.

	<u>2004 APPA</u>	<u>2004 IFMA</u>
Janitorial	\$1.39	\$1.24
Maintenance (excludes Capital Renewal)	\$1.36	\$1.49
Utilities	\$1.46	\$1.51
Grounds/Roads	\$0.13*	\$0.30

**The APPA costs reported are for landscape maintenance only*

The cost category titled "Maintenance" above includes only preventive, recurring and routine maintenance and repair costs. It does not include capital renewal or renovation costs. IFMA does not survey or track capital renewal or renovation costs for facilities. APPA does track capital renewal and renovation/modernization funding and reports this data separately from maintenance costs as a percent of Current Replacement Value of facility assets. Since the differential in the "Maintenance" cost category between the two surveys is only 9.5%, the average, which is **\$1.42**, is used as a basis for comparison with the state's two-year colleges.

The average M&O funding for the 03-04 and 04-05 fiscal years at Green River was \$588,029, or approximately **\$01.19 per GSF** of space maintained. This is **\$0.23 per GSF** or **16% less** than the APPA/IFMA average. If the APPA and IFMA data is used as a benchmark for M&O funding, the case that can be made for Green River is that **M&O funding is somewhat inadequate**.

If adequate funding for preventive and routine maintenance and repairs is not maintained, over time, it will result in a situation where capital repair and renovation funding are increasingly required to correct deferred routine maintenance as facility condition deteriorates. This is a self-fulfilling outcome that occurs when routine maintenance is under funded for so long that, eventually, facility and equipment deterioration become so severe that they can only be fixed with capital repair dollars. At that point, repair costs will usually be far greater than if adequate routine maintenance funding had been provided in the first place.

Management Philosophy

The overall maintenance management philosophy at Green River Community College appears to be shifting from a focus on primarily reactive maintenance and "putting out fires" to a more proactive process with an increased emphasis on preventive maintenance. The maintenance organization appears to recognize the importance of blending reactive and preventive maintenance. The maintenance staff is also balancing the need for repair of systems in older buildings scheduled for replacement with the fact that these buildings are going to be replaced at some point in the next few biennia and there isn't much reason to pour money into them.

The college maintenance organization was also asked to identify key maintenance issues that it feels affect the college both short and long term, and they identified three main issues of concern:

- 1) The primary issue involves establishing a computerized PM system. The staff has been struggling for years to implement the FM1 Maintenance Management system, but the system has proved fraught with problems. They are now just beginning to work with the most recent version which is web based and will try one more time with it to get a viable automated PM system in place. If this version does not work, they will begin the process of looking for another computerized management system. Meanwhile, limited manual tracking of PM operations for belts, filters, etc is done using electronic spreadsheets (Excel) and hand-scheduling.
- 2) There is an emerging need for training of our trades staff. The facility maintenance industry is rapidly becoming a technically demanding business and requires training and certification for the multiplicity of systems that require service and maintenance. One approach to this issue would be to turn to outside vendors at greater cost and lack of responsive capability. It is the position of the maintenance staff that using qualified organic staff to perform these operations will significantly improve performance of these systems and reduce cost.
- 3) There is a rapidly growing regulatory requirement such as Surface Water and Hazardous Waste Management. This is rapidly becoming one of the greatest budgetary concerns and accounts for a growing percentage of the staff time dedicated to the maintenance management operations.

One very effective tool for maintenance management and long-term maintenance/repair programming is the multi-year maintenance plan. A multi-year maintenance plan is typically intended to serve as a guidance document by which an organization identifies and allocates resources for a five-year planning period for the maintenance, repair and renovation of building systems and components. A maintenance plan should identify specific maintenance and repair requirements on an annual basis, lay out a proposed sequence for funding and provide annual cost estimates and programming recommendations in an integrated fashion. The college appears to have a solid multi-year maintenance planning process, as well as a well conceived facility master plan.