

## **Expand Preventative Maintenance of College Facilities**

Over the last twelve years, Mt. San Antonio College has invested hundreds of millions of dollars in new and modernized facilities. Included within each of these upgraded facilities are numerous individual equipment items. Each requires regular attention from skilled technicians to ensure that the expected life is maximized, and life-cycle cost of the system and facility is minimized. While some efforts have been made to develop preventative maintenance services, the vast majority of campus equipment is only attended to upon failure or imminent failure. This is the most costly approach to maintenance, and students, faculty and staff are frequently impacted by service failures of mechanical, electrical, conveyance, and other systems failures. While these events may seem rare at this time, they can be expected to increase in frequency and severity as the recently constructed and modernized facilities reach their first decade of use. A significant deferred maintenance backlog already exists for the Language center, Health Careers center, and Student Health Center facilities constructed in 2004.

Consistent with the 2014 – 2015 strategic plan (objective 9.4, process objective 9.4.1), over 2,500 individual pieces of equipment across campus have been surveyed and cataloged, and the maintenance requirements for each have been listed. A new computerized maintenance management has been implemented, and new processes for workflow within the maintenance department have been instituted. **The next required step is to incorporate the preventative maintenance work into the regular activities of the maintenance department.**

Preventative maintenance activities for over 2,500 pieces of equipment cannot be suddenly added to the already significant workload of the department. These activities must be prioritized and added to the workload through a transitional process. This project will, over a period of 30 months, expand preventative maintenance activities while slowly replacing reactive maintenance. The department goal is to increase preventative maintenance to 80% of available staff time, and reduce reactive maintenance to less than 20% of available staff time. The remaining time will be allocated to predictive maintenance efforts. (These percentages do not include non-productive time, shop time, training time, time allocated to support construction efforts, and meeting time).

It is clear that with current staff levels, each and every preventative maintenance activity cannot be completed on the recommended time schedule. This project will prioritize, adjust and customize planned preventative maintenance activities to provide a reasonable balance between an ideal maintenance program and available resources. Mission critical equipment such as cooling systems for the data center and

communications rooms, classroom cooling and lighting, central plant systems, and high cost equipment will be prioritized over lower cost, less crucial systems. Internal processes must be developed, tested and refined to ensure that preventative maintenance work adds value to the campus physical plant, and ultimately reduces the life cycle cost of campus facilities. These efforts will also prepare the maintenance team to accept responsibility for the increasingly complex and maintenance intensive systems such as thermal energy storage and photovoltaic systems, planned for the next two years.

The project will require a temporary project manager for 30 months, consultant services to assist with the import, revision, and organization of large quantities of data to the new computerized maintenance management system, and some supply costs. **The project will result in lower life-cycle cost of operations for facilities over time, improved performance and reliability of building systems, and significantly reduced deferred maintenance backlog. Secondary effects will include a more accurate, predictable, and responsible staffing plan for the maintenance department; better developed technical skills for the maintenance staff, and maintenance cost reporting suitable for predictive maintenance and budgeting.**

**Not completing this project will result in significant increases in future deferred maintenance costs, increased interruptions in teaching spaces due to service failures, and significantly reduced usable life of the new and modernized facilities funded with general obligation bonds.**