Situation

Between 1992 and 2002 the leadership in the UCO Physical Plant turned over four times. These changes caused unclear expectations and low employee morale. Routine (non-emergency) work orders took on average 24 days to complete. The Physical Plant had 3000 work orders open prior to the Lean Event. Confidence in the Physical Plant staff's timeliness and abilities to complete jobs were ranked poor in satisfaction surveys. Change was crucial to address the university's growing needs.

UCO took Lean Principles, which originated in the manufacturing world, and adapted the tools to the higher education environment. Lean is an improvement method that streamlines processes by identifying and eliminating waste.

Action

A team was comprised of Physical Plant employees and campus customers. They identified and implemented most of the changes in the process during a week long Lean Event. One of the Lean tools used to visualize the process was Value Stream Mapping (VSM). The current state VSM showed the time on task, quantity in queue, communication channels, and customer expectations existing prior to changes. The team remapped the process and defined the future state VSM, eliminating non-valued added steps and reducing the number of steps from 28 to 15.

The initial changes focused on restructuring the filing system, work order distribution and submission of work orders. The three-ply form previously used became an online form that allowed the submitter to track the progress of the work order. Obsolete copies were purged and training provided to users on the new system.

Upper management approval was eliminated for routine work orders. Shop supervisors use assignment boards to provide visual status of work orders for both the workers and managers. A first in, first out system (FIFO) was implemented, which is a move from the cherry picking of preferred jobs by the technicians. Sheets of paper used for one work order was reduced from 19 to 1.

"Customer satisfaction and employee morale improved. Our efforts became proactive or preventive, instead of reactive, resulting in significant savings."

Robert Nall, Assistant Vice President

Results

Application of Lean Principles in the Physical Plant work order system resulted in a reduction from 3,000 open work orders to 300 per month and reduced lead time for routine work order response calls from 24 to two days. These reductions were accomplished without increasing staff and in fact allowed two administrative positions to be reallocated to other departments on campus. Annually $15,000 is saved on paper alone and reallocation of staff time or savings on material is estimated at $1.2 M. The bottom line is that now the Physical Plant staff are able to address preventive maintenance issues instead of having a reactive response.

The 2008 campus satisfaction survey resulted in an overall 85% satisfaction rating. Restroom cleanliness and temperature control were primary concerns, both services that are outsourced. UCO continues to work on improving efficiency in the process and provide quality service so students will have a positive educational experience.