



The City of



Performance & Analytics

FACT SHEET

Library Material Sorting Process Improvements

As part of an initiative to improve the City's library services, Performance & Analytics (P&A) led a team of Central Stores staff and management from the Purchasing & Contracting Department (P&C) to shorten the time to hand sort and deliver library materials (such as books and CDs) requested by patrons among the branches. This project followed the Lean Six Sigma model of **define, measure, analyze, improve, and control** to achieve a 42% improvement in the amount of time dedicated to hand sorting, thereby shortening the wait time of patrons for their requested materials.

Define. Despite significant investments in overtime and supplemental staffing, P&C has been unable to sort and deliver library materials as required by Library Department specifications on a consistent basis. A Voice of the Customer survey confirmed the desire of branch librarians for more consistent and faster service. P&A and P&C staff conducted a waste walk and a root-cause analysis to identify areas of improvement and potential solutions.

Measure & Analyze. P&A worked with P&C to collect baseline data on the sorting process. Process flow maps, a motion ("spaghetti") diagram, a Design of Experiments, and run charts were prepared and used to measure and analyze the current process and identify the process factors contributing most significantly to the delays. Based on this analysis, the team focused on the "table clearing" portion of the sorting process that consumed a lot of time daily because of the amount of no value-added moving and carrying it required the sorters to do to prepare the materials for delivery.

Improve. P&C and P&A conducted a modified Kaizen event to brainstorm and pilot a modification to the sorting process that eliminated the "table clearing" portion. The team modified the process and floor setup so that sorters could place the materials directly into the moving bins as they sorted, eliminating the need to subsequently clear their sorting tables. The time saved could then be dedicated to more sorting.

Control. To sustain the benefits of the new process, a control plan was prepared and signed off by P&C management, which calls for adhering to the new process as outlined in process flow maps and using data collected continuously and analyzed statistically to monitor and react to out-of-control situations. The control plan also recognizes the impact of staffing levels and management to fully addressing the delays.

The results of this effort will tie in with future efforts streamline the library material sorting process in the branch libraries themselves, as well as delivery logistics. In sum, the quantitative results include:

- Annual soft savings of \$121,953 (estimate only)
- Productivity increased by 42%
- Process simplified by 35%
- Motion space reduced by 96%

