Managing for Results

An integrated management system can improve operations, control costs and improve service to the community.

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Managing a public works, road, utility or other maintenance agency can be a challenge. Not only are they responsible for maintaining valuable assets and resources, they also provide essential basic services such as water, sewer and sanitation. And, they are frequently "first responders" during an emergency or disasters. Add equipment maintenance, inventory control, service requests, reporting and several other day-to-day tasks and it's easy to see the challenge these departments face.

Faced with tight budgets, increased workloads, escalating costs and increasing community expectations, departments are constantly looking for ways to improve services and save money. In an environment where maintenance needs often exceed available funding, a new approach is needed. Improved efficiency and effectiveness is the key to success and new technology tools can make it a reality.

Studies show an integrated management system can improve operations, control costs, manage assets and resources more effectively and improve service to customers and citizens. It can increase productivity 20%, cut labor costs 10 to 20% and reduce maintenance budgets 5 to15%. It can be very cost-effective and could pay for itself within one year of full implementation with additional savings in future years.

An integrated management system combines two important concepts together; Maintenance Management and Business Process Improvement. Both are powerful management tools that help improve efficiency and effectiveness, but working together, they address both the *functional* requirements of the department (e.g., fix a pothole) and the *"process"*… <u>how</u> we do work.

Maintenance Management

Maintenance management evolved from an early model developed by DeLeuw, Cather/Roy Jorgensen in the 1960's. It is an activity-based work planning and budgeting approach that plans, schedules, assigns, performs and evaluates work. It builds work cost and performance standards and identifies resources needed to do the work.

In the last several years, new business processes have been used to set performance targets, measure outcomes and identify agency strengths and weaknesses. Implementing a comprehensive maintenance management system is the first step to Managing for Results.

Maintenance management is a four-step process: Planning, Organizing, Directing and Controlling. It's performance-based and results-oriented. It's a systematic approach that determines what work needs to be done, when it should be done, what labor, equipment and material resources are needed, and what it should cost to do the work. It helps agencies meet mandates and accountability requirements, justify resource and budget needs and answer everyday questions.

While it's conceivable a manual system could be developed to plan and evaluate work, new technology tools have greatly improved the process. A Computerized Maintenance Management System (CMMS) is a well-defined approach that plans work by activity, builds cost and performance benchmarks, balances work scheduling to maximize resource availability and produces an annual budget that is based on sound analysis. It handles work requests and tracks actual labor, equipment and material costs for planned versus actual analysis.

A properly implemented maintenance management system has several major benefits. It helps identify and budget work. It sets cost and performance benchmarks. These standards help rate the quality of service and the levels of service required. They help balance resource usage and requirements. They track actual work costs and accomplishments and compare operations on a planned vs. actual basis.

An Enterprise CMMS system does require some set-up and a clear management focus. Many of the systems are already in place, but they probably exist as "data islands"; spreadsheets, data bases, and other data files that handle parts and pieces of the operation, but don't share data with other files.

An effective CMMS requires definitions for activities, assets and resources (labor, equipment, material, contractors & fund accounts) at a minimum. Asset management and work management have been tightly related for years but the maintenance management model was only recently expanded to include resource management and "process improvements".

Maintenance Management Model
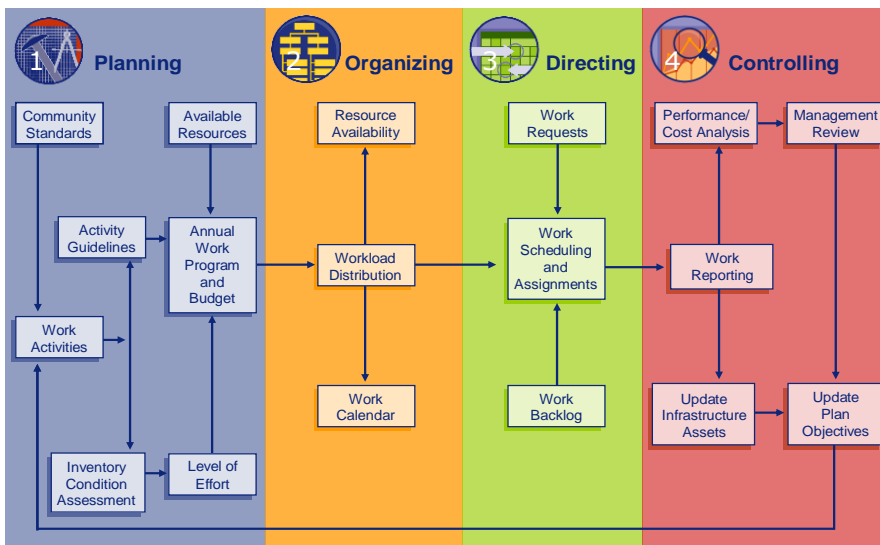
An effective CMMS requires management focus. In the early stages, staff input from all levels helps define objectives. Comments help identify department needs and functions. Workflow, processes and expected outcomes help identify areas of improvement.

Once department needs and objectives have been defined, the next step is to evaluate available technology solutions. Buying a fully developed system is usually preferable to designing and building an application from scratch. Flexibility becomes an important issue here because it's doubtful any system will meet all the desired requirements "out-of-the-box". Having the ability to modify screens and reports without calling the vendor saves money and expands long-term possibilities.

An integrated approach

While CMMS is a powerful tool, it's not the total solution. Business Process Improvement (BPI) principles are being used to improve operations and the maintenance management model. Where the maintenance management model usually evaluates "functional" aspects of doing work, BPI improves the process.

For example, annual work plans form the basis of maintenance management. New plans based on past history, customer comments, inspection results, asset condition and other factors should be created each year. That seldom, if ever, occurs with manual systems. It's too difficult. New budgets are just created by taking last years costs and adding 10%. Hardly a well-thought conclusion. Using past cost and performance statistics to create future plans improves the process. This is but one example of several process improvement techniques that yield solid results.

Integrating processes streamlines how work is planned, scheduled, assigned and evaluated. It ties resources to work and asset management. As equipment or inventory is used, equipment preventative maintenance scheduling and inventory reordering occur as part of the total process.

Process Integration
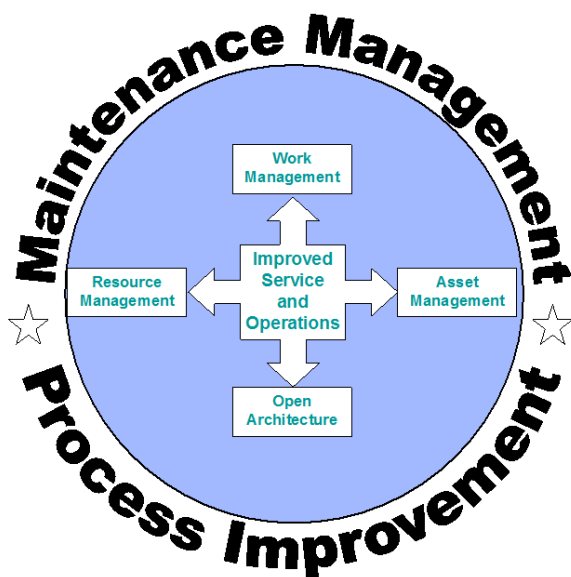
This diagram illustrates how work management, asset management, resource management and open architecture that shares data between systems can improve service and operations.

New technologies are changing how departments work. Web-based service requests can improve customer relationships. GIS maps can help pinpoint where work needs to be done or analyze work costs and performance. Handhelds, barcode readers, wireless devices, CCTV, SCADA and other control systems are all changing how people and computers relate with each other.

An important element in using and leveraging technology is the role a Technology Partner can play. Today, computer systems are more powerful, but success ultimately boils down to how people use technology. People want to use it, not be controlled by it. In order to truly leverage the power of technology, a qualified, user-oriented Technology Partner can insure the system meets objectives today and in the future.

Expected Results

It takes time, money and focus to implement a comprehensive maintenance management system. But, experience has shown it's worth the effort. Maintenance organizations have shown an integrated management system can improve productivity and cut costs by up to 20% per year. That's a significant improvement that can pay for a system in less than a year with continued improvement savings year after year.

But, beyond that, it's a step toward Managing for Results. Tangible, real-world work plans set cost and performance benchmarks. These are evaluated against actual work results and can produce long-term improvements.

In addition to improving productivity and controlling costs, an integrated system streamlines and simplifies data collection and reporting. One entry in a common data form captures all the information needed to manage work, assets and resources. Data can be consolidated to give "Big Picture" views of operations and help bridge "data islands" that exist in legacy systems. GIS maps, automated fuel systems, financial accounting and other enterprise-based applications can improve overall organizational effectiveness as well as improving customer service response.

The success or failure of an integrated management system lies with management. It requires senior management focus and support. It requires a champion; someone who understands the importance of the system and insures the processes and procedures are in place to collect, process and evaluate information. It requires comprehensive user training that explains its purpose and function to all levels of the department from management to data entry. And, finally, it requires a commitment from the Technology Partner and the department.

Successfully implementing a system is more than just buying software. Software is just a tool that's part of a bigger on-going process. Every year, the system should help the agency improve productivity, efficiency and effectiveness. It should improve service and help hold the line on skyrocketing costs. It should help departments do a better job with fewer dollars.