

DNREC GOES LEAN

BY LARRY NAGENGAST

Lean thinking isn't just for manufacturing. And it's not just for the private sector either. For an example, just look at Delaware's Department of Natural Resources and Environmental Control (DNREC), where a cumbersome process for approving air-quality permits was slowing down businesses that wanted to make operational changes and was diverting the department's experts away from monitoring air quality.

The system was "incredibly duplicative and wasteful," DNREC Secretary John A. Hughes says.

Permit applicants didn't have a clear idea of what information they were supposed to provide DNREC, and internal reviewers sometimes tended to focus on "nickel-and-dime matters" like missing signatures and misplaced pages rather than whether the applicant's information satisfied the department's technical criteria, Hughes says.

Then, after representatives of Delaware's auto and chemical industries raised some of these issues through the Delaware Economic Development Office in 2005, DNREC turned to the Delaware Manufacturing Extension Partnership (DEMPEP). With the help of training sessions and ongoing coaching by DEMPEP and input from businesses that are subject to the permit process, the DNREC staff was able to identify where the review system was bogging down – and why. Using Value Stream Mapping and Lean manufacturing concepts to eliminate non-value added activities, they were able to develop a streamlined system – adding easy-to-understand forms and instructions and removing wasteful and redundant steps – that cut processing time in half.

As a result, DNREC has learned how to move paperwork from desk to desk as smoothly as a new car glides down a General Motors or Chrysler assembly line.

In addition, with assistance from DEMPEP, DNREC is

implementing similar procedures for virtually all its permit categories, including brownfields, wetlands, underground storage tanks and storm water, giving staff more time to work on higher-value activities more directly linked to environmental protection.

None of the changes in processing applications has any impact on federal or state environmental-protection standards,

says DNREC manager Bob Zimmerman, who coordinated the Value Stream Mapping project. In fact, he says, DNREC didn't jump into Value Stream Mapping until it had checked with its counterparts in Michigan, where the Michigan office of the Manufacturing Extension Partnership, known as MMTC, and GM had previously suggested that environmental regulators use mapping principles to improve their procedures.



With DNREC's new system, paperwork moves as smoothly as a new Pontiac Solstice moves down the General Motors assembly line. *Photo provided by General Motors*

"Anytime you talk about permitting process, there's a fair amount of suspicion or skepticism, fear that integrity of the process would be compromised," Zimmerman says. But the Michigan regulators were enthusiastic about how the effort turned out, and assured Delaware that streamlining wouldn't give industry an opportunity to skirt environmental standards.

The DNREC mapping effort charted every step in the permit process – from the applicant completing the forms through final approval of the application. Each step was analyzed: what was done, how long it took and how much time was wasted between steps.

The project involved two separate work groups, DNREC engineer Amy Mann explains. The internal applications group included managers who reviewed the permit requests; the external applications group included representatives from the industries that filed the applications.

The groups identified numerous problems, but two stand out. First, Mann said, only 1 percent of the air quality applications

DNREC was receiving were complete when they were filed. Second, DNREC managers didn't have a clear understanding of responsibilities at each step in the review, so virtually every application was being kicked back somewhere in the process to someone who had already handled it.

To solve the first problem, DNREC created a new application form as well as a checklist that helps applicants understand exactly what they need before their paperwork is submitted.

"An applicant needs to know what we're looking for and what we think is important," Hughes says. "And, if you're a dry cleaner in Laurel, you don't need to fill out the same forms as an oil refinery."

That, of course, is what they were doing before. Now, instead of a one-size-fits-all form, the application consists of a series of "building blocks [that applicants] can put together like a set of Legos," Mann says. Operators of dry cleaning plants and auto body shops no longer have to wade through complex forms that chemical manufacturers must complete.

These improvements have eliminated much of the preliminary back-and-forth of DNREC managers prodding applicants to supply missing information. The result: about 60 days saved in the process.

As for the internal review issues, Zimmerman says the study helped managers identify where staffers were counting on others to resolve matters they could have been handling themselves – a wasteful "upward delegation" of responsibility.

Industry representatives like what they've seen of the new procedures.

"The application is more user-friendly, DNREC is now talking with companies before the applications are submitted, and they're coming in technically complete," says John Peronti, a senior environmental engineer at GM's Boxwood Road plant near Wilmington. Faster processing of permits, he adds, will make it easier to make adjustments at the plant when market conditions dictate.

Lou Graham, an environmental, health and safety operator at Dow Reichhold Specialty Latex LLC in Dover, said he learned a lot about DNREC procedures and the concerns of other industries as he participated in the external applications work group. And he's pleased that he helped create new forms that are "easier to use and a lot more intuitive."

Another executive who has seen the benefit of DNREC's value stream mapping is Bill Smith, principal of Environmental Alliance Inc., an environmental engineering firm specializing in groundwater and soil remediation projects.

In real estate development, time is money and "the certainty of

time" – knowing for sure when specific parts of a project can be accomplished – is a critical element in development, Smith says. When DNREC, developers and consultants like him know what is expected of everyone involved in the permitting process, and how long each step will take, projects move ahead smoothly and efficiently, he explains.

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As an example, Smith points to the work his firm is doing for an out-of-state developer who is building off-campus student housing units near the University of Delaware in Newark. Permitting for the first two phases of the project under DNREC's old processes took longer than the most recent application, which was filed

after Value Stream Mapping was initiated. "We had a large-scale remediation project, and we knew we had to do it in the summer, when fewer students would be around," he said. "With Value Stream Mapping, we knew how long the components [of the application process] would take, and we were able to complete the process and schedule the work for the first three weeks in August."



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