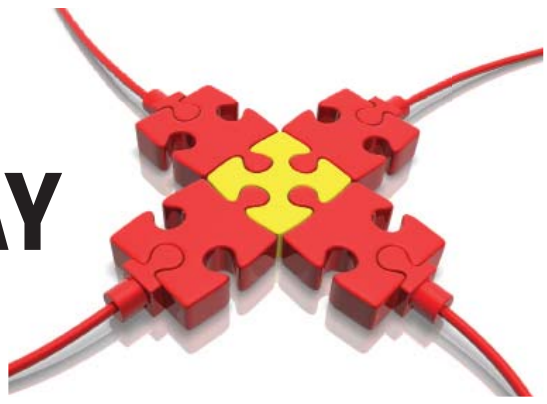
SPECIAL REPORT



By John F. Infanger, *Editorial Director*

PLUG 'N PLAY PLANNING

Pennyslvania, DMJM Aviation tweak the 2002 system plan and uncover a new tool

Every four years, the Pennsylvania Department of Transportation updates its airport system plan. Two years ago, it brought in Larry Bauman, associate vice president with DMJM Aviation's eastern region office in Philadelphia, to enhance its 2002 study. "They basically said, 'We want a better way to prioritize projects that would be competing for the same funds,'" recalls Bauman. "And, to take it a step further they said, 'What we want to be able to do is a down-and-dirty cost/benefit analysis because FAA's guidelines to cost/benefit analysis are very extensive and complex. They're costly.' So, the state wanted the ability to have a rule of thumb assessment of which projects might be better than others, along the guidelines of the FAA's cost/benefit analysis." Along the way, DMJM and PennDOT developed the project contribution calculator that provides regulators a 'plug n' play' analysis tool that others may find beneficial.

A block grant state, Pennsylvania has an aviation development program that serves as a state and local development funding source, and which is financed by a two cents/gallon flowage fee in a dedicated fund.

Explains Edie Letherby, planning manager for the state's aviation department, "PENNDOT has a 12-year planning process; we meet with our public-use airports every year and identify all of their airport needs, from maintenance to new development. The airports identify their needs; we have an airport master plan for every airport. We sort of line them up based on not only their need but how they benefit the system."

The latest 2002 system plan was developed by Wilbur Smith Associates, whom Bauman calls the "household name" when it comes to system planning.

Bauman explains that much of the focus was on the general aviation airports in the system, saying that typically the state doles out only some 5 percent of block grant monies to commercial airports in the state. "The larger airports have greater access to funds," he says.

PennDOT's Letherby says the contract with DMJM, which cost $295,000, sought to accomplish four tasks. "Probably the biggest one was we recognized after we went through and classified our airports in 2002 that, by lumping our commercial service in with our general aviation airports, we had a large advanced classification that wasn't working exactly as we expected," she explains. "It was too broad of a perspective."

Letherby says the purpose of this study was to pull out the commercial service airports and identify criteria for that particular class, as well as fine-tuning the advanced and intermediate classifications, making them more objective — using the performance characteristics rather than subjective criteria.

"We focused really on what was the airport's major purpose and what type of airplanes would normally use that type of service," she says.

PennDOT also wanted to look specifically at its NPIAS [National Plan of Integrated Airport Systems] airports, some 62 in all. "We wanted to identify the coverage that we had, how well they were located across the commonwealth," explains Letherby. "Did we have them located in areas that provide the greatest coverage for users? Did we have duplication?

"We took a look at about eight airports that we wanted to look at more in depth, and make sure that when we were evaluating them for inclusion into the NPIAS that we were using the FAA criteria and had some tools that would aid us. DMJM came up with a process and mapped it out for us. They did a sort of decision tree for us."

The third task of the study was to analyze capacity needs in the state, according to Letherby. "As you look across the commonwealth, the only airport that has an issue with capacity is Philadelphia," she says. "We wanted to look at what the costs and benefit would be to the system as a whole for extending these general aviation airports beyond their existing lengths to accommodate higher end aircraft — business jets, etc.

> ***PennDOT also wanted to look specifically at its NPIAS airports, some 62 in all.***

One airport over another may benefit the system more, she explains, even though there are no pressing capacity issues.

Larry Bauman

Comments Letherby, "We really didn't have, apart from FAA's cost/benefit analysis, a tool to help us evaluate those from a numbers standpoint. DMJM actually put together an airport project capacity calculator, and if we put in certain information into the calculator it will give us an idea of what cost per increased annual operation will be at a particular airport. Also, if we put all of the airports that are looking for the same kind of runway extensions into the calculator, we can sort of get a ranking as to which one would be the most beneficial to the system as a whole.

"It's not really a capacity calculator; it's really a project contribution calculator."

The calculator also helped with the study's fourth objective, she says,

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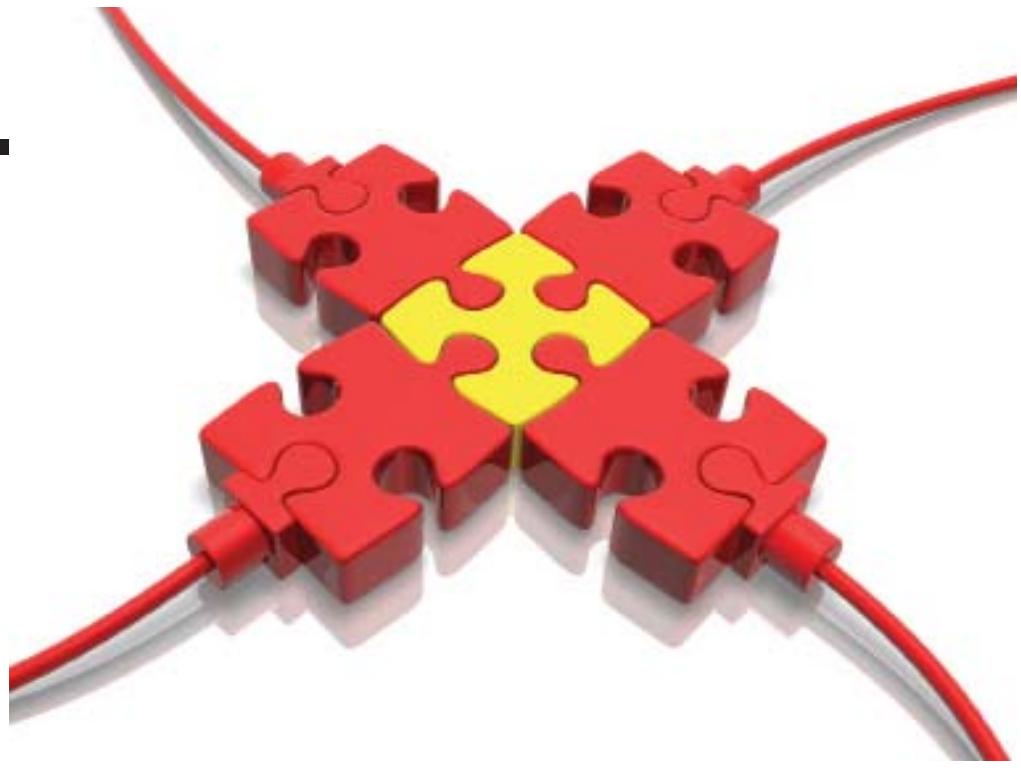

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which was to help PennDOT come up with a quick analytical tool it could use to justify budget requests to legislators.

"Working with DMJM we put together an average time it would take to do different types of projects, using the FAA's project purpose coding," says Letherby.

PennDOT maintains a programming database where it collects airport needs, from which it implements a four-year program to carve out projects that it judges as worth doing over a four-year period. Letherby says the agency can better evaluate funding needs over the four-year term and more clearly identify which airport projects bring more value to the state system.

Bauman relates that the study took some 16 months to finish, four months longer than projected. "They wanted to do a bit of a road show and go out for some meetings around the state and talk with the airport sponsors, which we hadn't contemplated at first," he explains. "There were really no glitches; it was just a matter of making sure there was time for everybody to get a review in of all the deliverables."

SURPRISES ALONG THE WAY

Bauman relates that among the surprises during the research, top of the list was that several states had come to similar conclusions as his study but had not taken them a step further. "There were numerous states that understood from an academic standpoint that in order to determine a project's benefits you have to boil everything down to a common denominator. That would typically be operational impact. Does it increase capacity? How much?

"What was a surprise was that I hadn't seen whether any other states had ever ventured this far. They all realized what the proper methodology was to do it, but I'd never seen anyone take it a couple of steps further than that.

"DMJM put together an airport project capacity calculator, and if we put in certain information it will give us an idea of what cost per increased operation will be."

- Edie Letherby, PennDOT

"This little spreadsheet tool came together nicely — that was kind of a surprise."

Bauman says that the initial intent was to focus on the term 'capacity', but as the research ensued it became evident that there was no capacity shortfall issue. "They were afraid to give it the wrong connotation, to imply that there was a capacity situation," he explains. "That's when we made the decision to call it an operational contribution calculator."

He says the calculator is purely a tool to look at groups of airports and competing projects at different airports, as opposed to looking at projects at a single airport. The exception, he says, is if a single airport is looking at a project on one runway versus another, then it is applicable. "It's absolutely set up to use as a tool for regional system planning," he comments.

CALCULATING THE BENEFIT

Projects are grouped under four headings, according to Bauman — runway length; parallel taxiway; parking/apron; and new hangar space. "Those were the projects we focused on," he says, "the reason being those are typically your high-priced items; they're typically large enough where they have to be funded over multiple years.

"It will calculate with very standard and reproducable algorithm that we developed from FAA documentation; it will calculate a whole range of different parameters. It will tell you what the operational contribution of that runway extension would be; it will tell you how many higher performance types of aircraft you can handle by extending your runway in 500-foot increments. If you input the cost of the project, it will then explain how much your paying in dollars per increased operational contribution — hence, a cost/benefit assessment. It will tell you how much additional benefit your dollar is buying."

A weighting factor was added, he explains, to rate the busier airports somewhat higher, the thought being that busier airports have a greater benefit on the system. Other parameters in the evaluation include the readiness of the sponsor; status of environmental planning; matching funds. That ranking is compiled by virtue of the sponsor filling out a checklist, explains Bauman. It is set to provide 'school' grading, A-F. The amount of economic impact an airport provides to the state, taken from a previous state study, is also inputted.

Both Bauman and Letherby say FAA has seen the calculator and has expressed interest is exploring its value for other states. And both express the view that other states could find value in using the calculator.