Implementing a

**Developing and sticking to a budget
is one of the biggest challenges
any local government faces.
The Alabama Productivity Center (APC),
based at the University of Alabama,
used Target Budgeting
to help get one town back on track
and ready for the future.**

BY MARCO LAM, MIKE CARVER, AND DAVID MILLER

PRATTVILLE IS A SMALL CITY just outside the state capital of Montgomery, Ala. It's fast-growing, with a population of about 25,000. The city plans to annex a neighboring area in the year 2010, which will increase Prattville's size by approximately 30%. The planned annexation and aging property, plant, and equipment have created a challenge: how to continue to provide a high level of services in view of limited resources. In 2004, Mayor Jim Byard, Jr., approached the Alabama Productivity Center (APC) to see if it could help him prepare the city for the upcoming annexation. APC is a nonprofit organization that helps local businesses solve a variety of problems. Its mission is "to focus university resources on the enhancement of productivity and quality in Alabama firms through applied, problem-solving oriented research and technical assistance." Our team at the Center took on the project. We analyzed the departments that would be most affected. In addition, Prattville had built up a signif-

icant deficit over the previous five years, compounding the issue. To improve its financial position, we proposed implementing a Target Budgeting process.
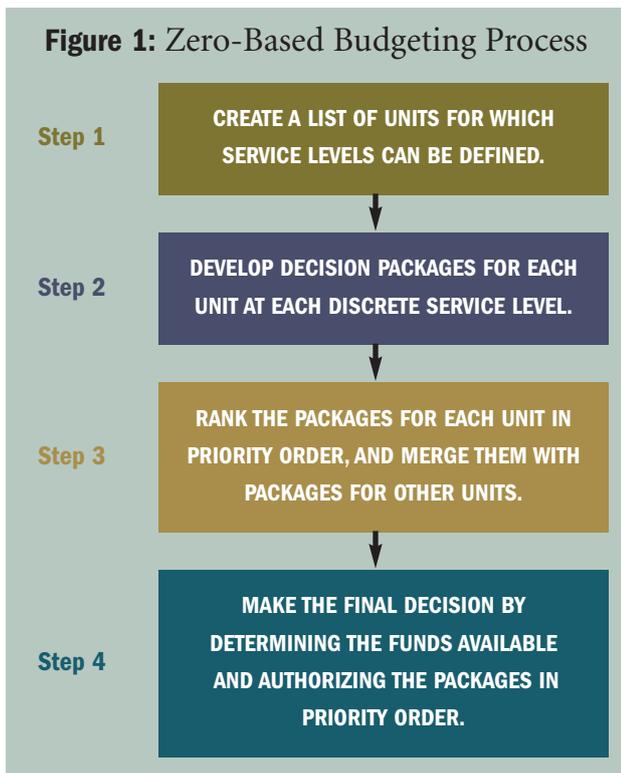
THE BUDGETING PROCESS

As management accountants know, the budgeting process is critical for controlling and allocating resources. For a municipality, the budget serves as the control tool for using the city's resources. The budget also provides a written document for the public that plainly describes the expenditures that will be undertaken during the next fiscal year and the sources of income. By law, the city council must adopt an annual budget and conduct the financial affairs of the city in strict conformance with that budget. This means that spending funds that haven't been formally appropriated can occur only after a budget amendment has been adopted by the city council. Hence, the budget serves as a short- and long-term planning tool

Target Budget for Prattville, Alabama

Figure 1: Zero-Based Budgeting Process

Step 1 — CREATE A LIST OF UNITS FOR WHICH SERVICE LEVELS CAN BE DEFINED.

↓

Step 2 — DEVELOP DECISION PACKAGES FOR EACH UNIT AT EACH DISCRETE SERVICE LEVEL.

↓

Step 3 — RANK THE PACKAGES FOR EACH UNIT IN PRIORITY ORDER, AND MERGE THEM WITH PACKAGES FOR OTHER UNITS.

↓

Step 4 — MAKE THE FINAL DECISION BY DETERMINING THE FUNDS AVAILABLE AND AUTHORIZING THE PACKAGES IN PRIORITY ORDER.

as well as a day-to-day operations guide.

The dominant budgeting process for governments is still making incremental adjustments to last year's allocations. This approach is facilitated by the line item budget format. Many governments and companies have recognized the issues with incremental budgeting and have adopted alternative approaches, such as Zero-Based Budgeting (ZBB) and Activity-Based Budgeting (ABB). Our approach is a hybrid of the two.

ZERO-BASED BUDGETING

Over the years, several state governments (e.g., Georgia, Montana, Texas) and large corporations (e.g., Boeing, Xerox, BASF) have used Zero-Based Budgeting. ZBB requires each department to examine its activities every year and consider new ways to improve output and reduce cost. This involves four steps (see Figure 1). The first involves identifying units for which service levels or

options can be identified. For example, in the Sanitation Department, two service levels for garbage collection that can be identified are:

◆ One collection per week and
◆ Two collections per week.

Note that usually there's a trade-off between a higher level of service for an activity and the resources (or costs) required to provide that service.

The second step is developing a decision package for each unit at each level of service that can be carried out. The initial package is the survival level, or minimum level at which the service can be performed. Usually this level is about 75% of the current level.

The third step is assigning a priority to each unit and rank ordering the packages for the unit or department according to the assigned priority.

The last step is the final decision: When the level of funds available is determined, packages are accepted in priority order until no more funds are available.

ACTIVITY-BASED BUDGETING

Noted researchers Robin Cooper and Robert S. Kaplan have defined Activity-Based Budgeting (ABB) as Activity-Based Costing (ABC) in reverse. ABC traces costs from products to activities and then from activities to resources. The first step in ABB is analyzing the activities that are performed in each department. The cause (or activity initiator) and output (or result) of the activity are identified for each activity. Next, the number of times an activity will be performed in the upcoming period and the number of outputs are forecasted. Based on the forecast, the resource requirements are estimated, and resources are allocated to the various activities. The main advantage of ABB over other budgeting systems is that it provides greater insight when the demand for resources and the sales volume aren't linearly related.

TARGET BUDGETING

The term Target Budgeting has been narrowly defined in the past. In particular, it has been used to indicate that the proposed expenditures can't exceed the available revenues. We define Target Budgeting as a structured approach of allocating available resources to activities such that desired service levels are achieved.

Prattville has two possibilities when forecasting next year's revenues. It can use last year's actual revenues or projected revenues. When projected revenues are used, a 10% contingency fund needs to be included in the budget, and the budgeted expenditures can't exceed the pro-

Figure 2: Target Budgeting Conceptual Model

PROJECTED REVENUES

BUDGETED EXPENDITURES

ACTIVITIES APPROVED

ACTIVITIES PROPOSED
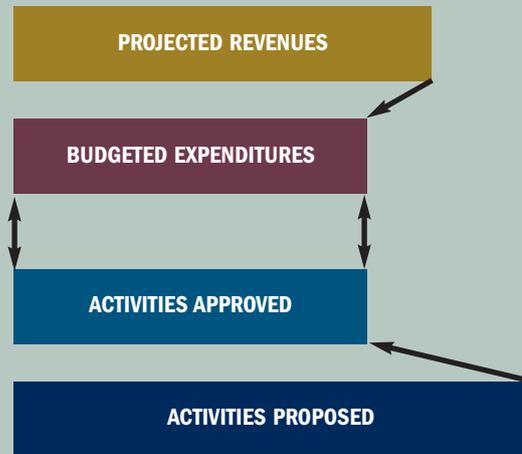
When *projected* revenues are used in the budgeting process, a contingency needs to be built in. Hence, the budgeted expenditures are less than the projected revenues. Alternatively, last year's revenue numbers can be used. In that case, a contingency isn't required. Activities include both services that are provided as well as requests for new tools, equipment, and new hires.

jected revenues (see Figure 2). Our definition of Target Budgeting is much closer to the Target Costing concept. Robin Cooper defined Target Costing as "a structured approach to determining the cost at which a proposed product with specified functionality and quality must be produced in order to generate the desirable level of profitability at the product's anticipated selling price." In our case, the expected revenues compare to the selling price, and the provided services compare to the product features. Our approach differs from other budgeting approaches in that all the activities and their costs are identified and approved individually. In a sense, this is similar to approving features in the Target Costing process.

Activity Packages are created for all the proposed activities. We define an Activity Package as a service or activity that is independent or stands on its own—for example, mosquito fogging. If the Activity Package isn't approved, none of the other activities performed by the Street Department are affected. The stand-alone aspect is very important. For instance, if the activity includes an overhead charge and the activity isn't approved, insufficient funds would be available to account for overhead costs. The same holds for activities that would require the fund-

ing of another package.

An Activity Package contains an estimate of all the resources that would be required for the forecasted demand or output level, including all direct labor and materials. Alternatives are analyzed at this stage. The resources required include existing staff as well as potential new hires, use of equipment and machinery, etc. To ensure better planning, the Activity Packages also include cost estimates for the upcoming years.

To ensure that funds are available for capital outlay, Activity Packages are also created if the department wants to request new equipment. If the department intends to replace equipment, the requested amount would reflect the estimated purchase price and necessary modifications minus any cost savings (e.g., reduced maintenance cost and gas usage). If the new equipment is added to the asset base, the requested amount would reflect the purchase price and all additional costs (e.g., routine operating and maintenance expenses). Note that while most Activity Packages will have a net cash outflow, this isn't necessarily the case. For instance, when a police car is sold and not replaced there will be an upfront preparation cost (i.e., stripping), but there will be a larger cash inflow when the car is sold.

The Activity Package concept is similar to the Decision Package concept used in ZBB. The main difference is that we didn't ask the budget preparers to create packages for different service levels. Because the funding requests are linked to output levels, the funding for different service levels could be deduced if someone wanted to do that. Rather, we asked the preparers to specifically consider alternatives in the cost management stage (see Figure 3, Step 4). This has two advantages. First, it cuts down on the department's workload. Second, it challenges the department to consider performing the services at different service levels and to consider outsourcing or alternatives. For instance, Prattville's Street Department could start an herbicide program to reduce the amount of mowing required.

In our experience, employees are more likely to include budgetary slack if they feel that the resource level they prefer for the activity might not be allocated. Budgetary slack is defined as the difference between the requested budget and the predicted budget. As Kenneth Merchant

has pointed out, budgetary slack is one of the main problems in budgetary control. Therefore, we anticipate that the department head would request more funds for the low service-level package than are necessary. Including budgetary slack is less likely when the department provides the amounts required to maintain the current service level because these numbers can be verified by accounting.

The best way to allocate overhead is an ongoing debate. Should we use Activity-Based Costing and allocate all costs to cost centers and then to products and services? Should we use an allocation base and allocate costs based on staff-hours used? When we have operational assets, which depreciation method should we use? And how does all this affect our costs?

By definition, an Activity Package stands on its own. Hence, if overhead is allocated to the activity and the activity isn't approved, there aren't enough funds available to cover the expenditures. Therefore, overhead isn't allocated in our process but instead is included in a Base Package. Note that the forecasted labor usage (in hours) is included in the Activity Package. Thus, while the labor overhead expense isn't allocated, the usage is known.
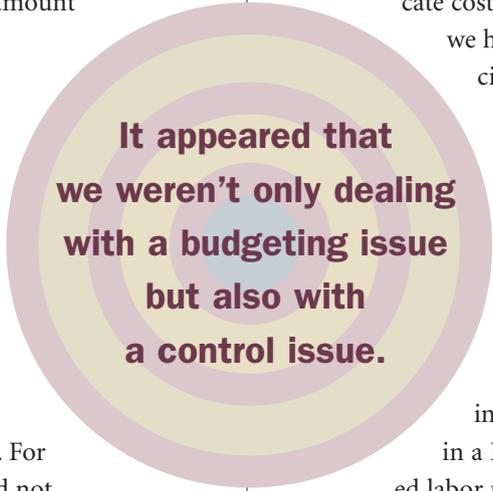
> **It appeared that we weren't only dealing with a budgeting issue but also with a control issue.**

TARGET BUDGETING IN PRATTVILLE

We started our project by meeting with all the department heads. For the new process to be effective, it was essential for the city employees to take ownership of it. Budget participation has been shown to positively affect job satisfaction, motivation, performance, and job attitudes. In this and other meetings, department heads expressed their concern that, "As always, the budget wasn't going to be followed." Hence, it appeared that we weren't only dealing with a budgeting issue but also with a control issue. Because the budget is the primary control device for municipalities, this wasn't unexpected. Also, because we are dealing with elected officials, politics plays a role in the process.

We decided to first get the budgeting process under way and then to look into the control issue (see Figure 3). For the first step, the Finance Department provided us with the forecasted revenues. Because the city uses forecasted revenues rather than last year's actual revenues, a contingency is included. In Alabama, the contingency

amount equals 10% of forecasted revenues. Thus, the budgeted expenditures can't exceed the forecasted revenues minus the contingency (Step 2). These budgeted expenditures are the outflow of the activities approved by the mayor and council members.

In Step 3 of the process, we worked with the department heads and their subordinates responsible for the department's budget to identify all the activities their departments perform and services they provide. For each activity or service identified, the departments created an Activity Package.

In Steps 4 and 5 we worked with the departments to consider alternative service levels, outsourcing, and alternative ways to achieve the desired outcomes. Outsourcing could include both outside parties and/or other departments. In Prattville's case, outsourcing would be more expensive, and the service level would be lower, so the city didn't pursue outsourcing. The benefit in this case is that the decision makers have more and better information from which to make decisions even if the end result is the same. Without the new Target Budgeting process, these questions wouldn't have been asked, and the information wouldn't be available.

In Steps 6 and 7 the budget is finalized. The mayor decides which activities to recommend for inclusion in the budget, then forwards his budget to the city council for approval.
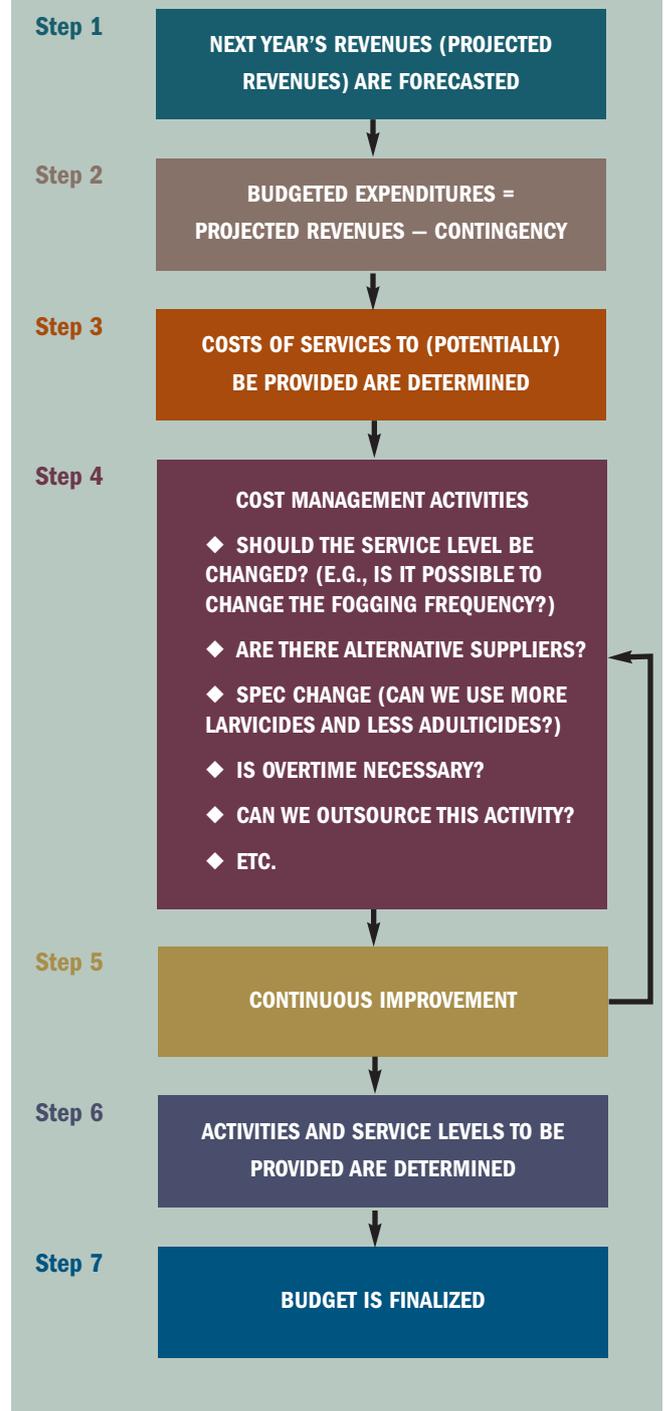
EXAMPLE ACTIVITY PACKAGES

As outlined above, activities include both services and requests for capital outlay and employees. An example of the services provided by Prattville's Street Department is mosquito control. The department uses larvicides and adulticides. Larvicides are placed in standing water every month from March to September. Adulticides are sprayed with ULV foggers five nights a week, three hours per night, between May and September.

First, the cost of providing the current activity at the current service level is calculated. Prattville needs two equipment operators/truck drivers (600 staff-hours per year) for fogging and one operator/truck driver (40 staff-hours per year) for placing the solid larvicide in standing water. The expenditures for this service include material expense (larvicides and adulticides), fuel and maintenance for the foggers and vehicles, and overtime for the equipment operators.

The next step is cost management. Several alternatives should be considered here.

◆ **Service-level change:** Is it possible to reduce the fog-

Figure 3: Target Budgeting Process

Step 1 — NEXT YEAR'S REVENUES (PROJECTED REVENUES) ARE FORECASTED

Step 2 — BUDGETED EXPENDITURES = PROJECTED REVENUES — CONTINGENCY

Step 3 — COSTS OF SERVICES TO (POTENTIALLY) BE PROVIDED ARE DETERMINED

Step 4 — COST MANAGEMENT ACTIVITIES
◆ SHOULD THE SERVICE LEVEL BE CHANGED? (E.G., IS IT POSSIBLE TO CHANGE THE FOGGING FREQUENCY?)
◆ ARE THERE ALTERNATIVE SUPPLIERS?
◆ SPEC CHANGE (CAN WE USE MORE LARVICIDES AND LESS ADULTICIDES?)
◆ IS OVERTIME NECESSARY?
◆ CAN WE OUTSOURCE THIS ACTIVITY?
◆ ETC.

Step 5 — CONTINUOUS IMPROVEMENT

Step 6 — ACTIVITIES AND SERVICE LEVELS TO BE PROVIDED ARE DETERMINED

Step 7 — BUDGET IS FINALIZED

ging frequency? Is it possible to reduce the fogging period?
◆ **Specifications:** Can we use more larvicides and fewer adulticides and have the same outcome?
◆ **Planning:** Is overtime necessary? Can we outsource this activity?

Next, the activities to be funded are determined, and the budget is finalized. The department heads have prior-

itized their activities by rank ordering them. The mayor decides which activities to include in the budget proposal by considering the departments' priorities and the strategic plan of the city. These stages require a great deal of communication among the department heads and the mayor to establish overall priorities and examine trade-offs. When the budget proposal is finalized, it is sent to the city council for approval.

Another example of a service provided by the Street Department is street sweeping. The department owns two street sweepers. The cost of providing the street-sweeping service is included in an Activity Package. The costs include the salaries for the operators, gasoline, and maintenance. The current vehicles are old, and the department would like to replace a vehicle. One of the vehicles is estimated to be down 40% of the time, and its maintenance costs have been significant. Therefore, purchasing a new street sweeper is also an activity included in the Street Department's budget request. Because the new vehicle would be replacing an older one, many of the expenditures are included in the street-sweeping package. The necessary expenditures include the purchase price of the vehicle minus the estimated resale value and savings (e.g., reduced maintenance and fuel cost). If other expenditures (e.g., insurance) change, their effect will be included in the activity as well. In this case, purchasing the new vehicle would affect the service level. With more vehicle uptime, the sweeping frequency potentially could increase. Because the increased frequency also affects the expected life of the vehicle, fuel expenditures, etc., this should be considered in the cost management stage.

CONTROL

As indicated previously, the city had a budgeting *and* a control problem. When the city council approved the budget, cuts were made arbitrarily to "fit the budget in the available revenues." As a result, the departments were dealing with unrealistic budgets. For instance, the budget for one department included appropriations of $50,000 for electricity even though more than $100,000 was spent the prior year.

When a department wanted to make a purchase, a purchase order (P.O.) was first sent to the Finance Department and then to the mayor for approval. The mayor could approve the purchase even if funds weren't appropriated or had already been spent. Not surprisingly, the department heads ignored the budget from day one and just sent P.O.s to the mayor for approval.

Our Target Budgeting implementation ensured that the departments had a realistic budget, yet, without a strict adherence to the budget, the project probably would fail. The P.O. approval process we proposed placed the budget responsibility back with the city council. If a department doesn't have funds available but needs the item, the city council would have to amend the budget and increase the appropriations. After all, the budget is the responsibility of the city council.

LESSONS LEARNED

To date, the project has been a great success for Prattville and the mayor. But without the right controls in place, a realistic budget wouldn't have provided the desired results. With the new controls and budget in place, the city was able to start replacing old equipment while maintaining its services and reducing the deficit.

In the past, budgets were just increased by a percentage from year to year, so they weren't very useful for decision making. The current budget provides Mayor Byard and the city council with a tool to make informed decisions. Because all the departments submit activity packages for their requests for capital outlay, the process is also very effective for strategic planning. In addition, it gives the department heads a platform to communicate "their business" to the public. Funding is linked to activities, so the budget also clearly signals the council's intent for the day-to-day operations.

When the new budgeting process was started, it received a lot of attention in the local newspapers. Mayor Byard summarized the impact in a September 2006 story in the *Montgomery Advertiser* newspaper. "This budget is going to be very positive for the city," he said. "It will be exact, simple to understand, and transparent." The mayor added that, "This new way of budgeting means we will have fewer surprises at the end of the year." And this has helped Prattville better manage its activities. ■

Marco Lam, Ph.D., is an assistant professor of management in the Department of Business Administration at York College of Pennsylvania. You can reach him at (717) 815-1585 or mlam@ycp.edu.

Mike Carver is currently the continuous improvement manager at CRH North-America Inc. You can reach him at M.Carver@crh-group.com.

David Miller, Ph.D., is the director of the Alabama Productivity Center at the University of Alabama. You can reach him at (205) 348-8956 or dmiller@proctr.cba.ua.edu.