

AUTOMATION ACCOUNTING, BUDGETING, PERSONNEL, AND OTHER INTERNAL ADMINISTRATIVE ACTIVITIES

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BUDGETING

A problem with budgets that is common to all but a very few states is that of obtaining legislative sanction, i.e., appropriations. Getting appropriations approved requires an educational process because nearly every session of a state's general assembly has new members on the committees that review requests. The makeup of the assembly changes each election; therefore, a different degree of friendliness will exist after each election, and the education of the administrators as well as of the legislators will require revision. To meet the requirement of educating legislators and their staffs, we explain to the members of the committees with whom we deal our budgetary objectives and the financial cycle within the budget year. We use a package that explains these objectives and includes an actual example of a budget status report. We believe that this helps ensure that the members of the Illinois General Assembly who are most directly concerned with the Division of Highways' appropriation are aware of our objectives and that we manage the highway user revenues on a business-like basis.

In regard to functions that may be included in the area of fiscal management I believe that the budgetary activity of preparation, execution, and monitoring is by far the single most significant function. The budget function is, or should be, the beginning of the chronological order of events to assemble and direct all other functions whether they are general accounting, cost accounting, staffing, auditing, or reporting. This is to say that all other systems must be consistent with and complement the organization's budgeting system.

The Illinois Division of Highways is divided into approximately 100 budget (organizational) units, each of which is responsible for the preparation and justification of its own annual budget and the eventual allocation of this budget into quarterly allotments. The Budget Section of the Bureau of Fiscal Management assists these units in their budget preparation as well as in scheduling and conducting hearings between top and operating management. The individual budgets are reviewed and modified as necessary and then consolidated to arrive at a total appropriation request for the Division of Highways.

After the rigors of obtaining legislative appropriations are completed, the operating budgets must be finalized and each budgetary responsibility must be allotted its share of the funds. Again, automation is a valuable adjunct to management in monitoring operations through the current year. We make a tentative apportionment to a given budgetary responsibility for its share of an appropriation and request that those responsible submit their quarterly allotment request. These are reviewed briefly, and the data are entered into the computer system. The chief of each budget unit is responsible for seeing that his unit operates within the approved budget. To help him in this responsibility, the data processing section prepares a monthly budget status report, a copy of which is also given to the budget officer.

Basically, the information in a budget status report shows how much of the current quarterly allotment for each appropriation limitation has been obligated, committed, and expended and how much is still available for the balance of the quarter. The budget officer also reviews each of the reports to determine whether each unit is properly operating within its budget. When any overexpenditure or unusual underexpenditure

in an appropriation limitation is noted, the unit chief must explain and justify the reason for the situation. Corrective measures are taken for continued unjustified budget violations.

The unit chiefs are given an amount of flexibility in the operation of their budgets by having a portion of their total allotments carried in a reserve rather than allocated to a specific quarter. The allocation of any part of this reserve, however, must be approved by the chief highway engineer. Any changes to the approved budget and allocation plans must be submitted to the budget officer.

Without automation of budget status reporting and analysis, the monitoring and compliance (planned versus actual program accomplishments) activity of an otherwise sound budget system will be rendered ineffective. This is to say that the budgetary activities of preparation, justification, and execution will be only as effective as the organization's ability to perform status reporting and analysis of the original program objectives.

PERSONNEL

A few features that we are using in our personal services control system are of considerable importance to management. As mentioned earlier, the Illinois Division of Highways has approximately 100 organizational units that have specific budgetary responsibilities. Figure 1 shows an actual page of the personal services control system (PSCS) report for one of these organizational units, the Data Processing Section. Position title and code, location, employee's name, work basis, and monthly salary are indicated, and the number of positions authorized, budgeted, and filled is indicated. For example, under one of the position codes for data processing analyst II, two are authorized, two are budgeted, and two are filled, and under another position code for data processing analyst II, two are authorized, one is budgeted, and two are filled. In summary, we have four authorized, three budgeted, and four filled. More positions filled than budgeted would indicate to the manager that, unless there were sufficient offsets elsewhere in budgeted positions, his budget would show a deficit at the end of the fiscal year. In short, PSCS reports give the manager his dollar projections. Also, this system can be used to project annual budgets. Many different summary reports of benefit to management may also be obtained through automated techniques. For example, we could list positions by classification for the entire division, list a given classification such as the number of clerk typists, or list positions by categories such as professionals, laborers, and clerks.

We are developing an automated personnel management system that should produce many benefits. For example, additional training or education received by employees would be added to their master file. If a particular skill were called for in a given task, the computer would search records quickly to determine who possesses the required skill. Or, if certain skills needed to be developed further, the file could be easily scanned to determine which employees possessed the prerequisites for the additional training.

ACCOUNTING

Timeliness of accounting information is one of the key elements to good management control, and in this area automation can give significant dividends. Teleprocessing applications whereby data may be entered on-line from a district or field location is becoming more widespread. These applications sometimes consist merely of up-dating a file; in other cases they may consist of printing a voucher, recording the transaction on a summary tape, and making both the hard copy and tape available to management. The system cannot yet make direct entry for payment to vendors, but we are actively pursuing this application and have a target date of June 30, 1972.

Currently, we are entering from field terminals certain cost distribution, such as the labor reporting, that gives us the information required to prepare federal billings. Other computer applications are organized in the following general areas: bid lettings, contractors progress payments, federal billing system, on-line payroll system, employee position control system, budget status system, vendor expenditure analysis, and cash flow. The following applications are being worked on: on-line vendor voucher

Figure 1. Position status report.

APPROPRIATION 6017 - elec. Data Processing
 RESPONSIBILITY 8015 - Central D.P. Staff

REPORT NUMBER APS-RO04
 REPORT DATE 02/28/71
 RUN DATE 03/30/71

| TITLE SUMMARY TOTALS | POS TITLE | POS CODE | POS LOC | EMPLOYEE NAME | WORK BASIS | MONTHLY SALARY | ANNUAL DATE |
|----------------------|----------------|-----------------------|--------------|------------------|-------------------|-------------------|----------------|
| | | POS AUTHORIZED | 1 | | MAN-MONTHS WORKED | | |
| | | POS BUDGETED | 0 | | FUNDS DISBURSED | \$0 | |
| | | POS FILLED | 0 | | OVT FUNDS | \$0 | |
| ***** | | | | | | | |
| | DA IN SUPV II | 11412-23-02-202-22-01 | 084 | BAER, GERAL | 71 | 796 | |
| TOTALS | POS AUTHORIZED | 1 | POS BUDGETED | 1 | POS FILLED | 1 | |
| ----- | | | | | | | |
| TITLE SUMMARY TOTALS | | POS AUTHORIZED | 1 | | MAN-MONTHS WORKED | 1.0 | |
| | | POS BUDGETED | 1 | | FUNDS DISBURSED | \$796 | |
| | | POS FILLED | 1 | | OVT FUNDS | \$0 | |
| ***** | | | | | | | |
| | DA PR ANL I | 11421-23-02-201-10-01 | 084 | HEAD THOMA | 71 | 899 | |
| TOTALS | POS AUTHORIZED | 1 | POS BUDGETED | 1 | POS FILLED | 1 | |
| ----- | | | | | | | |
| | DA PR ANL I | 11421-23-02-202-10-01 | 084 | STRAHM FRE | 71 | 999 | |
| TOTALS | POS AUTHORIZED | 1 | POS BUDGETED | 2 | POS FILLED | 1 | |
| ----- | | | | | | | |
| TITLE SUMMARY TOTALS | | POS AUTHORIZED | 2 | | MAN-MONTHS WORKED | 2.0 | |
| | | POS BUDGETED | 3 | | FUNDS DISBURSED | \$1,896 | |
| | | POS FILLED | 2 | | OVT FUNDS | \$0 | |
| ***** | | | | | | | |
| | DA PR ANL II | 11422-23-02-201-10-01 | 084 | GIGANTI NI | 71 | 1081 | |
| | DA PR ANL II | 11422-23-02-201-10-01 | 084 | MESSINGER | 71 | 1081 | |
| TOTALS | POS AUTHORIZED | 2 | POS BUDGETED | 2 | POS FILLED | 2 | |
| ----- | | | | | | | |
| | DA PR ANL II | 11422-23-02-202-10-01 | 084 | PACK REBEC | 71 | 1025 | |
| | DA PR ANL II | 11422-23-02-202-10-01 | 084 | LAME HAROL | 71 | 1081 | |
| TOTALS | POS AUTHORIZED | 2 | POS BUDGETED | 1 | POS FILLED | 2 | |
| ----- | | | | | | | |
| TITLE SUMMARY TOTALS | | POS AUTHORIZED | 4 | | MAN-MONTHS WORKED | 4.0 | |
| | | POS BUDGETED | 3 | | FUNDS DISBURSED | \$4,091 | |
| | | POS FILLED | 4 | | OVT FUNDS | \$0 | |
| ***** | | | | | | | |
| | DA PR ANL III | 11423-23-02-201-10-01 | 084 | SUNDIN ROB | 71 | 1243 | |

system, personnel management system, contract cost estimating system, on-line budget status system, project control system, and right-of-way control system.

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Highway departments must be made aware of the many advantages that automation provides. Highway personnel, especially district engineers, must be shown that automated systems offer greater control over operational procedures than do manual systems, thereby creating more efficiency within the district and providing for a more economical operation.

Of particular concern to the district engineer is maintaining financial control over the many work programs and projects for which he is responsible. It should be quite apparent that, when data used for financial management are current, the district engineer is in a position to make better decisions and develop more efficiency in the district work program. When financial management information is received after work has been performed, the district engineer cannot be expected to exert much control

over his operations. A lack of current information is not an unusual situation in many highway departments; in fact, it is the rule, not the exception.

Consider the impact of a system that would provide current and useful data for all echelons from the chief administrative officer to the district engineer. How much more efficient would the highway organization be if useful current information could be provided through automated processes? Logical application of these data could include maintenance budget control or project costs, operational budgets, personnel information and records, and other items of a general administrative nature.

Such systems are within the reach of all highway departments. Conversion may require a reappraisal of current policies and a revision in management philosophy, but it can be done by improving the accounting system as follows:

1. Convert the current cash accounting system to an accrual system;
2. Increase the timeliness of financial information through implementation of non-cyclic accounting principles;
3. Develop management-oriented financial reports that engineers can understand;
4. Incorporate management by exception reporting throughout the financial task wherever possible;
5. Simplify user coding by placing more of the coding load on the computer; and
6. Design the basic accounting files in such a way that organizational units other than the accounting division can directly examine those files.

Changes in procedures are delicate operations and must be preceded by preparation for change. This is why selling the program is so important if successful implementation is to be achieved. This is true at the district-engineer level as well as at all other levels in the organization.