

Table 4. Pattern of contract expenditures for highway projects.

Type of Contract	Cumulative Percentage of Total FY Expenditure Through:											
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June
Maintenance												
FY 1979-1980	9	21	32	42	56	66	74	77	80	82	89	100
FY 1980-1981	11	24	40	57	68	79	83	85	88	90	94	100
Two-year avg	10	23	36	50	62	73	79	81	84	86	92	100
Construction												
FY 1979-1980	9	20	29	39	51	61	69	72	78	81	90	100
FY 1980-1981	12	18	31	39	46	58	63	68	72	80	89	100
Two-year avg	11	19	30	39	49	60	66	70	75	81	90	100

of new-car sales. Pennsylvania's inauguration of staggered vehicle registrations and four-year driver's licenses with photographs had beneficial cash-flow impacts during the implementation periods of these programs.

"Other motor receipts," which account for about \$60 million annually, include fines, vehicle safety inspection sticker sales, and interest income. With high interest rates and quicker turnaround of federal funds, interest income is now approaching \$15 million annually.

#### GENERAL OBSERVATIONS ON DISBURSEMENTS

The three largest disbursement categories--payroll, construction contracts, and maintenance contracts--account for well over half the total MLF expenditure.

The payment schedule for debt service is not subject to change. The MLF payment schedule for State Police, however, may be adjusted from month to month as long as the total amount is paid by the end of the fiscal year.

Payroll is the largest single cash-disbursement item; it accounted for \$330 million in the 1981-1982 fiscal year. For the past three fiscal years, the Department has held payroll to about 4 percent average annual growth in order to provide as much money as possible for road contracts.

Comparison of actual versus forecast for other disbursement items provides an independent management check on the pace of key activities. All cases of unusually low or high payments are investigated. Claim settlements can have significant disruptive effects. The Department's Chief Counsel provides immediate input to the cash-forecasting system on major cases and negotiates payout schedules based on the Department's fiscal capabilities.

Forecasts for the construction and maintenance contract payments rely on the Department's new computerized project management system (PMS). This system is extensively described, including its cash-forecasting modules, in a paper by Kutz and Zeiss (2). The computer generates payment forecasts for each of the Department's 11 engineering districts, with past forecasts checked against actual data. Where the correlation has been poor, the technically responsible individual may override the District's forecast until the situation can be corrected.

The "vouchers payable" entry represents the Department's "float"--checks authorized for payment but not yet paid. Although there have been short

periods when the MLF's cash balance has dropped below the "vouchers payable" amount, the Department has never had to delay a payment since the advent of cash forecasting in April 1979.

Table 4 shows the pattern of contract expenditures for both maintenance and construction projects through FYs 1979-1980 and 1980-1981. Pennsylvania's expenditure pattern, which may be typical for snow-belt states, shows that 66-79 percent of maintenance contract expenditures are incurred in the July-December period. Construction contract expenditures are more uniformly spread, with about 60 percent incurred in the July-December period.

#### CONCLUSIONS

Each state has unique financial arrangements for supporting transportation needs. Some states have earmarked transportation funds, whereas other states get appropriations from general funds. Practices to reserve state funds for projects and to account for federal aid differ considerably from state to state. There are three basic lessons of PennDOT's cash-management experience, however, that have broad applicability.

First, regardless of the financial situation, cash-flow forecasting is an excellent tool to gain greater management control. Deviations from expected cash performance are often early warning signals of problems that merit top management attention.

Second, the flow of federal reimbursements is critical to cash performance. These reimbursements are not automatic nor are they always prompt. Management should know precisely what federal reimbursements are outstanding and when they are scheduled for collection.

Third, Pennsylvania has shown over the last three years that it is possible to run a fiscally responsible highway program with minimum cash balances. Cash cushions can be converted into additional road projects but only after establishment of tight cash-management controls.

#### REFERENCES

1. Highway Statistics 1979. FHWA, 1979.
2. S. Kutz and W.W. Zeiss. Improved Highway Program Management Through Use of Integrated Information Systems. TRB, Transportation Research Record (to be published).

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