

from other public functions and have control over their funds in separate accounts. To finance large capital additions, they have authority to issue revenue bonds. Their revenues after operating and maintenance expenses must be adequate to pay the interest and redemption.

2. *Tax-supported enterprises.*—Typical of this group is the utility that is budgeted and accounted for within the city's overall operations. Revenues from water sales are deposited in the general municipal fund together with other receipts, including tax receipts, out of which the expenditures for all city operations, including the water utility, are made. In such cases, taxes are levied to meet payments on bonds issued to expand the water system. The bonds would be general obligation bonds backed by the taxing power of the municipality.

Regardless of the type of financial organization—and there are a number of variations—revenues from water rates are employed to a large extent to pay the costs of doing business, including operation and maintenance expenses, taxes, debt service, payments to the general fund (municipally owned utilities) or dividends (investor-owned utilities), and payments to reserves and surplus.

Water utilities obtain most of their income from water sales. A study in 1955 covering 78 municipally owned utilities showed that water sales furnished 92 percent of total income, with residential customers providing 56 percent, commercial customers 18 percent, industrial users 17 percent, and municipal service 1 percent. The largest single source of income after water sales is fire service. Most investor-owned and about one-half of the municipally owned utilities, according to a 1960 AWWA survey, levy a charge for fire service, usually in the form of a hydrant rental in the range of \$10 to \$50 per fire hydrant per year.

Revenue sources and disposition for 875 municipally owned and 90 investor-owned utilities of all sizes in 1960 are shown in Table 10.

TABLE 10.—*Water utility revenue sources and disposition*<sup>1</sup>

| Item                               | Municipally owned           |         | Investor owned              |         |
|------------------------------------|-----------------------------|---------|-----------------------------|---------|
|                                    | Dollars per million gallons | percent | Dollars per million gallons | percent |
| Revenue:                           |                             |         |                             |         |
| Water sales.....                   | 302                         | 91.5    | 382                         | 95      |
| All other.....                     | 28                          | 8.5     | 20                          | 5       |
| Total.....                         | 330                         | 100.0   | 402                         | 100     |
| Disposition:                       |                             |         |                             |         |
| Operating and maintenance.....     | 174                         | 53.0    | 188                         | 47      |
| Taxes.....                         | 3                           | 1.0     | 88                          | 21      |
| Debt service.....                  | 62                          | 19.0    | 35                          | 9       |
| Current capital additions.....     | 48                          | 14.0    | 35                          | 9       |
| To general funds or dividends..... | 20                          | 6.0     | 33                          | 8       |
| Reserves and surplus.....          | 23                          | 7.0     | 23                          | 5       |
| Total.....                         | 330                         | 100.0   | 402                         | 100     |

<sup>1</sup> H. F. Seidel and J. L. Cleasby, "A Statistical Analysis of Water Works Data for 1960" (unpublished).

The income of the municipally owned group averaged \$330 per million gallons, of which \$174 was spent for operation and maintenance and the remainder for taxes, debt service, current capital additions, de-