

and maintenance facilities. The value per sanitary landfill is calculated at an average size of 15 to 30 acres, the cost per acre being \$1,500. Land costs are estimated to represent about 40 to 45 percent of the total sanitary landfill value, including operating equipment. Thus, the past investment value per average sanitary landfill can range from \$50,000 to \$112,000. Open dumps, finally, are valued at land cost alone. Considering the large number of open dumps in small rural communities and the smaller sizes of open dumps, it is estimated that each open dump represents an investment of about \$500. In contrast to open dumps, most sanitary landfills are located in urban areas where the land prices are substantially higher.

In accordance with the foregoing discussion, the value of refuse collection equipment and disposal facilities at actual acquisition costs is estimated as follows:

TABLE VIII.—*Investment value (at cost) of refuse collection equipment and disposal facilities, 1965*

	<i>Millions of dollars</i>
82,000 tons of incinerator capacity.....	205. 0-246. 0
1,071 sanitary landfills.....	53. 5-120. 0
19,372 open dumps.....	9. 5- 9. 5
30,000 to 40,000 collection vehicles.....	300. 0-400. 0
12 percent equipment storage and maintenance facilities.....	36. 0- 48. 0
Total.....	604. 0-823. 5

Source: APWA estimates and calculations.

The foregoing data on sanitary landfills exclude the investment value of completed sanitary landfill areas which are still held as property of the community. In case of a sanitary landfill, the land value usually increases because of land improvements produced by proper sanitary landfill operations. Thus in a strict sense the current value of a sanitary landfill cannot be compared to the current value of an incinerator installation.

B. COST AND USER CHARGES

1. CONSTRUCTION COST AND OPERATING COSTS

(a) *Construction Cost for Facilities of Long-Time Durability*

Construction costs per ton of incinerator capacity have customarily been estimated to range from \$3,000 to \$6,000. However, a 1966 survey of eight incinerators just completed or still under construction indicates an average construction cost of \$4,500 per ton/24-hour daily capacity. Construction cost increases considerably if air pollution control equipment, automated process controls, highly mechanized operations, and adequate storage facilities for the raw refuse are provided. The current construction costs for an incinerator utilizing the improvements available from modern technology are estimated to average \$5,000 to \$7,000 per ton/24-hour daily capacity. The cost could go as high as \$8,000 to \$10,000 per ton/24-hour daily capacity for plants incorporating heat recovery systems and buildings suitable for cold climates.

The development "construction" cost for sanitary landfills includes access roads, water, drainage facilities, equipment sheds, fencing, lighting, and site beautification. A 1964 survey of 10 sites in Penn-