ment provides loans through the public facility loans program (which is administered by the Department of Housing and Urban Development). Under the PFL program 224 loans have been made through December 1965 to local public agencies involving $102 million for the construction of sewage collecting systems, and waste water treatment plants. In addition, 141 loans have been made for construction projects involving both water and sewer facilities estimated to cost $76 million. The Department of Housing and Urban Development also administers a program of advances for public works planning, which provides noninterest bearing advances to enable communities to prepare plans for needed public works. The advances become due and repayable only when the planned work is placed under construction. Over 2,400 advances have been processed under this program providing about $57 million to local public agencies to assist in planning of needed sewer facilities, having an aggregate cost in excess of $3.3 billion.

In addition to the Federal assistance, approximately one-third of the States have adopted legislation to provide financial aid for sewerage facilities in the form of grants and/or loans. Most of the State grant programs are keyed to the Federal Water Pollution Control Act, either for purposes of establishing eligibility or determining the amount of aid to be provided. California, Indiana, New Jersey, Ohio and Oregon have loan programs to assist communities to design and/or construct sewerage facilities. Delaware, New Jersey, New Mexico, New York, Pennsylvania, and Vermont have enacted grant programs to communities to assist in the development of sewage systems or part thereof. New Hampshire guarantees loans for sewer facilities and participates in a program of annual payments to defray amortization and operating expenses as do New York and Pennsylvania. The effects of the State aid programs have not been evaluated.

The balance of financing for sewer collecting systems construction which amounts to approximately 25 percent of all sewer construction undertakings, or 37 percent of the municipal undertakings, is obtained from three general sources. They are in order of importance, short term public borrowings, revolving construction funds or sinking funds related to previous borrowings and direct appropriations or "pay-as-you-go" arrangements. The exact amount of each category is unknown, but the general use of short-term public borrowings by municipalities for all purposes has increased from $2.7 billion in 1956 to $6.5 billion in 1965 or an increase of over 140 percent during the last 10 years. The "pay-as-you-go" principle is not adaptable to the sewer collection field generally because of the need to create large surpluses or reserves before construction can be undertaken. However, in areas where small additions to existing systems are to be made, the "pay-as-you-go" method is often employed.

D. Needs and Prospective Capital Outlays

1. FACTORS TAKEN INTO ACCOUNT

President Lyndon B. Johnson in an address at the University of Michigan (Ann Arbor, Mich., May 22, 1964) stated:

> In the remainder of this century urban populations will double, city land will double, and we will have to build homes, highways, and facilities equal to all those built since this country was settled.