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## CHAPTER II

### PUBLIC WORKS IN NEW YORK CITY

Public, like private construction, lagged in this country considerably during the war and did not begin its strong upward movement until after 1922. The low level of expenditures in New York City from 1919 to 1922, shown in the following tabulation, reflected not only the influence of general economic conditions, but also the adoption in 1916 of a new financial policy by the city government. "The outbreak of war in Europe, the temporary closing of the Stock Exchange, and generally unsettled banking conditions

Year	Expenditures On Public Works (thousands)	Estimated Population (thousands)	Per Capita Expenditures
1919	\$29,774	5,570	\$5.35
1920	39,208	5,620	6.98
1921	71,467	5,670	12.60
1922	56,635	5,720	9.90
1923	75,769	5,770	13.13
1924	120,944	5,820	20.78
1925	132,871	5,870	22.64
1926	131,394	5,920	22.19
1927	143,545	5,970	24.04
1928	132,721	6,020	22.05

here and abroad left the city unable to borrow for temporary needs or permanent improvements. The city's bonds had hitherto been sold extensively in foreign markets. These were now closed. An appeal had to be made to the banking institutions of the city. A syndicate was formed to loan the city \$100,000,000 for three years at six per cent. In granting this loan the syndicate stipulated that the city change its policy of financing permanent improvements" <sup>8</sup> by ceasing to borrow for permanent improvements that were not self-supporting.

<sup>8</sup> *Lehman*, pp. 209-210. The present chapter has drawn largely upon this report.

Because of the heavy burden which this pay-as-you-go policy for the financing of permanent improvements imposed upon the taxpayer, the method was soon abandoned and the city reverted in a number of instances to financing by long-term borrowing. This change, the pressing need for public works such as large public buildings and schools, and the rising tide of business, all contributed to the great increase in the expenditures on public construction in New York City in the years after 1922.

While the evidence is not conclusive, and is somewhat impaired by the lack of comparability between the measures of the volume of public construction in New York City and in the whole country, there is reason to believe that an increasing share of the total public construction of the United States is represented by New York City. The tabulation below, which shows the relation between the population of New York City and the population of 27 states,<sup>9</sup> on the one hand, and the relation between contracts awarded by New York City for public works and contracts for public construction awarded in the same 27 states, on the other, gives an interesting picture of the changing relative position of New York City.

Year	Percentage New York City Population is of Population of 27 States	Percentage New York City Contracts for Public Works are of Public Works Contracts in 27 States
1919	7.5	5.8
1920	7.5	10.4
1921	7.6	4.3
1922	7.5	8.1
1923	7.5	6.9
1924	7.4	7.6
1925	7.3	10.1
1926	7.3	12.0
1927	7.2	12.8
1928	7.2	14.4

Construction expenditures of New York City originate in a variety of administrative departments and are financed by diverse methods. A summary of these expenditures since 1919 and their

<sup>9</sup> The 27 states here included are those for which the F. W. Dodge Corporation publishes a continuous series of construction contracts awarded since 1919.

classification into principal types of work is given in Table 4.<sup>10</sup> In all years the bulk of spending is done for subways, streets, roads and parkways, and buildings, largely school buildings. In the last three years subways account for considerably more than one-third of the total.

**Procedure and Financing of Public Works.**—The methods employed by American municipalities in planning permanent public improvements and in carrying them through to final completion are the product of historical accident, changes in political structure, and exigencies of the moment. Although the steps required to undertake the complete public construction projects in New York City may differ in detail from the procedure that prevails in other cities, full description of the process in New York City will throw considerable light on the nature of public works programs everywhere and on the forces that, from time to time, retard or accelerate them. In New York City, as elsewhere in this country, the striking characteristic of public works procedure is the lack of the machinery for deliberate, forward planning, except possibly in the construction of subway and water-supply systems.

Budget-making for all of the ordinary expenditures of the city is still a more or less casual process. The budget document of New York City is little more than an itemized appropriation ordinance. It contains no estimate of the income that is expected to meet proposed expenditures. The steps involved in its preparation are as follows: early in the spring the Board of Estimate requests the heads of 165 departments, boards and bureaus to prepare and submit their estimates of all expenditures for the coming year. It is expected that the departmental estimates will be submitted by July 10th, although the time limit set by the City Charter for their submission is August 1st. They are not, however, all received even by the latter date, but keep coming in throughout July, August and September. Numerous supplementary departmental estimates not mentioned in the Charter are submitted even as late as October, the date when the Committee of the Whole of the Board of Estimate is required to approve of the tentative budget.

When received by the secretary of the Board, the departmental

<sup>10</sup> The figures in this table represent actual expenditures and are, therefore, not strictly comparable with the figures in Appendix A, Table 13, which are the Dodge record of public contracts awarded in New York City. Further analysis of these two sets of statistics are given below in Chapter V, pp. 120-124.

TABLE 4. — EXPENDITURES ON PUBLIC CONSTRUCTION IN NEW YORK CITY, 1919-1928\*  
(In thousands)

Purpose	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Subways.....	\$11,975	\$ 7,764	\$ 6,965	\$ 4,224	\$ 5,927	\$ 8,641	\$18,583	\$50,849	\$64,356	\$57,636
Streets, roads and parkways <sup>b</sup> .....	8,306	10,257	13,759	12,738	15,747	23,828	29,982	32,808	36,677	31,170
Buildings.....	3,346	5,791	13,227	14,500	25,155	59,441	48,831	22,373	22,003	24,201
Water supply systems, etc.....	2,096	2,430	6,365	10,704	14,501	12,145	8,919	7,833	7,701	6,215
Docks and ferries, etc.....	339	6,465	17,277	6,101	4,546	4,436	9,766	5,755	3,768	5,807
Borough presidents <sup>c</sup> .....	3,816	5,135	12,405	6,330	6,927	8,952	14,425	9,663	6,765	4,663
Parks and park buildings.....	61	1,200	1,445	1,895	2,860	3,501	2,275	1,763	1,775	1,970
Miscellaneous.....	15	166	24	143	106	.....	90	350	500	1,059
<b>Total expenditures.....</b>	<b>\$29,774</b>	<b>\$39,208</b>	<b>\$71,467</b>	<b>\$56,635</b>	<b>\$75,769</b>	<b>\$120,944</b>	<b>\$132,871</b>	<b>\$131,394</b>	<b>\$143,545</b>	<b>\$132,721</b>

Source: New York City, Comptroller's Annual Reports.

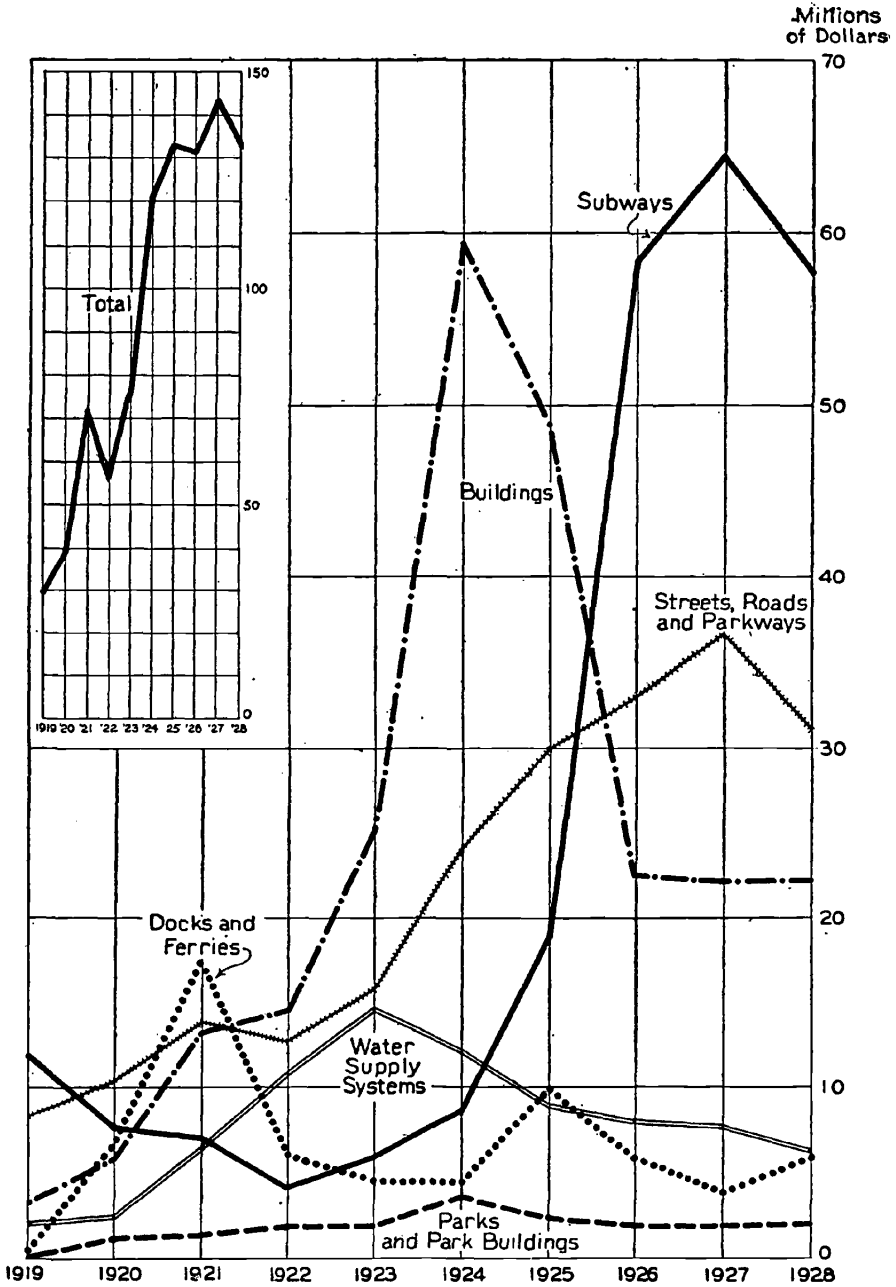
\* The figures include all expenditures, however financed, for new construction and reconstruction, but omit maintenance and operation costs.

<sup>b</sup> Includes expenditures by Borough Presidents from Special Revenue Bonds, all of which were for paving and repaving streets and avenues.

<sup>c</sup> Expenditures mainly for school construction.

<sup>d</sup> Excludes expenditures by Borough Presidents from Special Revenue Bonds included in footnote <sup>b</sup>. This class represents miscellaneous building to some extent but the greater part is for repaving and resurfacing streets.

CHART 4.—EXPENDITURES ON PUBLIC CONSTRUCTION IN NEW YORK CITY, 1919-1928.



estimates are assigned to the 35 examiners of the Board of Estimate. Each examiner studies the estimates under his jurisdiction and holds conferences with the specified department head and the Director of the Budget. Estimates with attached recommendations are then forwarded on or before October 4th to the Committee of the Whole of the Board of Estimate. This body holds hearings with departmental heads on the estimates, and on or before October 10th adopts a printed tentative budget. Public hearings are again held later to consider principally additions to the tentative budget. Before October 20th the Board must file with its secretary a budget known as the Proposed Budget. Before this filing date items of the budget may be increased or new ones added, but after October 20th revision can only be downward or by elimination. After public hearings are held on the proposed budget, the final budget is adopted on or before October 31st. Five days after the budget has been passed by the Board of Estimate it must go to the Board of Aldermen, which is given twenty days for its consideration. But this body has practically foresworn any part in budget-making. Deliberations on the budget, so far from twenty days, consume on some occasions no more than twenty minutes. Not over four or five times in the past thirty years has the Board of Aldermen made any change in a budget.

**Capital Outlays on Public Improvements.**—The budget includes very few items for permanent improvements. The several small items for permanent improvements included in it, such as armory buildings, park improvements, construction of a municipal airport, expenses of engineering forces engaged on construction and designing of the new subways amount, in the aggregate, to a sum relatively not large. Capital outlays on permanent improvements are financed, for decidedly the greater part, by issue of long-term corporate stock or bonds. If emergency funds were required in times of depression for the relief of unemployment through an increased volume of expenditures on public works, it would matter little that the procedure involved in making budget appropriations is long and cumbersome, provided only that these unusual expenditures did not come out of current revenue but were financed by the issue of long-term bonds or by temporary borrowing. Capital expenditures in New York City are not planned in any comprehensive manner, except in the case of subways and water supply. Various projects are authorized from time to time during the year,

and the tax budget is adopted in November with no indication of the outlays which the city will make from the proceeds of the sale of bonds.

The procedure involved in the authorization of capital issues is as follows: the various departments submit, at its request, to the Board of Estimate, usually in December (but also at various times during the year for specific projects), a list of items deemed urgent and their requests for a given amount of corporate stock or tax notes for these desired improvements. These items are placed either on the current calendar of the Board or else on a special calendar of the Committee of the Whole printed early in the year—the so-called corporate stock and tax note calendar. As new items are added the calendar is revised or supplements to it are prepared. Items are picked from this calendar, acted upon by the Board of Estimate and approved early in the year. Thereafter specific new items are received and then considered by the Board through the Committee of the Whole. No special order is observed in the consideration of the items, except when the corporate stock budget is considered, nor is an attempt made to formulate a budget or program of capital expenditures. Authorizations are thus made in a piecemeal fashion and not all at one time as is the case with tax budget expenditures.

The city is not required to issue bonds and have cash actually in hand before proceeding with the execution of a project. The authorization is itself considered as equivalent to an appropriation and contracts may be immediately awarded. When obligations incurred in this way become payable, that is, when the contractors present their bills, money is secured by the issuance of corporate stock notes which mature within a period of one year, unless renewed or converted into long-term stock.

In short, the procedure is as follows:

1. Requests by the departments are made to the Board of Estimate directly or indirectly.
2. Authorizations are made by the Board at any time during the year.
3. Contracts are awarded.
4. Corporate stock notes are issued in liquidation of the obligations incurred.
5. These notes are converted into long-term stock.



Borrowing by New York City is usually preceded by the issue of corporate stock notes. Long term obligations therefore are not incurred until the expenditures have been made. It is argued that such an arrangement is more economical than that obtaining in many cities which issue bonds when the project is authorized and in advance of its execution, since it enables the city to choose the most favorable time for the issuance of its long term stock or bonds. It may also put its obligations on the market in large blocks of \$50,000,000 or \$60,000,000 to attract active bidding.

Should no sale of long-term stock occur before their maturity, corporate stock notes may be renewed and the renewals redeemed from the next sale of stock. The total amount of such notes and renewals must at no time exceed four-fifths of the amount of corporate stock or serial bonds authorized to be issued.

Thus the city is in a position to provide, rapidly and at short notice, for the financing of any public project which it desires to undertake. Large funds can thus be raised in the New York money market at almost a moment's notice on the authorization of the Comptroller. At times when the conditions for borrowing are considered unfavorable—as in the recent period of inflation and high interest rates—it is still possible, if the money is urgently required, to issue short-term certificates—corporate stock notes—which need not be converted into long-term issues for a year, or if renewed, for longer periods. Granted willingness, therefore, on the part of the city authorities to enlarge their volume of borrowing for an increased volume of public works, the only restriction that might hamper speedy action by them would be the limitation set by the state constitution to the city's outstanding indebtedness.

**The Forms of Temporary Borrowing.**<sup>11</sup>—There are, strictly speaking, four varieties of temporary borrowing; one of these is in anticipation of taxes, and one of long term borrowing; the others are for appropriations supplemental to tax budget appropriations.

1. Revenue bills are issued in anticipation of the collection of taxes. They run for short periods of varying duration, at rates of interest depending on the state of the money market.

2. Corporate stock notes, the second form of anticipatory temporary borrowing, are short term obligations issued pending the flotation of long term bond issues.

3. Special revenue bonds provide for supplementary appropria-

<sup>11</sup> See Appendix C.

tions. They must be redeemed out of the tax receipts of the succeeding year, and the necessary appropriations for their redemption must be made in the current budget. They are used for a variety of purposes but, in the main, where cost cannot easily be estimated in advance, as for the removal of snow. They are likewise issued to meet certain emergency appropriations. Only in the case of appropriations to the Armory Board are special revenue bonds issued by the city for capital improvements.

4. Tax notes, the most recent form of temporary borrowing, were first used in 1916. They resemble special revenue bonds in that they must be redeemed in the budget of the next succeeding year. They can be issued for any non-revenue-producing public improvements approved by the Board of Estimate.

**The Forms of Long Term Borrowing.**—There are three categories of long term borrowing:

1. Corporate stock,<sup>12</sup> properly so called, is redeemed by the payment into a sinking fund of annual amortization charges.
2. Serial bonds are characterized by the annual maturity and retirement of a specified, usually equal, part of the total issue.
3. Assessment bonds are used to assist in the financing of the

<sup>12</sup> The term "Corporate Stock" is loosely used to designate both ordinary varieties of long term bonds (whether serial bonds or corporate stock properly so called). It is so used as a heading for accounts of expenditures financed in this way in the *Annual Reports* of the Comptroller; nor do these itemized accounts of expenditures by departments specify the precise type of "Corporate Stock" issued to finance the given work in question. The usage of the Comptroller's reports has therefore been followed in making up tables. It should consequently be observed that these corporate stock fund accounts include expenditures financed by serial bonds. The financing of the expenditures shown was in fact for very much the greater part by means of corporate stock issues, properly so called. Serial bonds have hitherto been used to a much lesser extent. It should further be observed with regard to Table 5, that though corporate stock is the ordinary type of long term bond issue, expenditures financed in this way are usually financed in the first instance by the issue of corporate stock notes (i.e., by temporary anticipatory borrowing) pending the issuance of the bonds themselves. The figures in the corporate stock fund accounts are for expenditures on public works financed in this manner irrespective of whether or not the corporate stock notes had yet been converted into long term corporate stock. Table 7, also, includes expenditures financed by means of assessment bonds, another method of long term borrowing. Assessable improvements are financed through two revolving funds, the Street Improvement Fund (used for physical improvements) and the Fund for Street and Park Openings (for acquisition of property). These two funds are recouped by the payments of assessments to the city, but the Comptroller can issue ten year assessment bonds (which form part of the city's debt), to be redeemed out of the funds. For fuller details regarding each of the above methods of financing public works, see Appendix C.

Street Improvement, and the Street and Park Opening Funds, which defray the cost of paving, curbing, sewer-building, drainage, and other similar assessable improvements, together with the cost of lands acquired for these purposes. The greater part of the assessment bonds outstanding are held by the city sinking funds.

New York borrows annually for public improvements well over \$100,000,000 through long term obligations. Corporate stock is generally issued for a term of 50 years; serial bonds usually for shorter terms; and assessment bonds have maturities of ten years or less.

**Sources and Nature of Expenditures on Permanent Improvements.**—With these classifications of the forms of temporary and permanent borrowings in mind, it is possible to survey the total expenditures by New York City for public works, in terms of the methods whereby they are financed by the administrative agencies that make the expenditures. A summary of the situation is shown in Table 5, which is a consolidated tabulation of the detailed items. It is clear from this table that the bulk of permanent improvements is financed out of corporate stock, serial bonds and assessment bonds. The city accounting is such, however, that it is impossible to break this category down.

Some notion of the confusion involved in the expenditures by New York City, and for that matter by most agencies of government, is shown in Tables 6-9, where these expenditures are classified both by the type of financing and by the administrative department concerned with the execution of the work.<sup>13</sup> The use of the expression "warrants paid" in Tables 6-9, requires further explanation. In the reports of the Comptroller a number of different columns are given against each appropriate item. With regard to the expenditures, three columns are of particular interest. They are headed, respectively, Net Vouchers Registered, Net Warrants Registered, and Warrants Paid. The figures in Tables 6-9 represent totals of warrants actually paid during the year. There is usually only a very slight difference between the figures for the same item which appear in the three columns, so that it does not make a great deal of difference which one is used. The vouchers registered perhaps better represent the actual volume of work executed in any given year, since the vouchers are presented as soon as payment is due. The warrants paid, however, give the exact figure for actual expenditures in any year. The time lag between the regis-

<sup>13</sup> For explanatory notes to Tables 5-9, see Appendix B.

TABLE 5. — EXPENDITURES ON PUBLIC CONSTRUCTION, CLASSIFIED BY COMPREHENSIVE TYPES AND DIFFERENT METHODS OF FINANCING IN NEW YORK CITY, 1919-1928  
(In thousands)

Purpose	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
<b>Special Revenue Bonds</b>										
Buildings.....	\$395	\$1,267	\$1,342	\$842	\$688	\$1,366	\$875	\$123	\$235	\$190
Borough presidents, five boroughs.....	15	166	.....	143	77	.....	90	551	963	403
Miscellaneous.....								350	500	650
Total Special Revenue Bonds.....	\$410	\$1,463	\$1,342	\$985	\$765	\$1,366	\$965	\$1,024	\$1,698	\$1,243
<b>Corporate Stock, Serial Bonds and Assessment Bonds</b>										
Subways.....	11,795	7,764	6,965	4,213	5,927	8,641	18,566	50,733	64,146	57,455
Water supply systems, etc.....	2,086	2,430	6,354	10,704	14,474	12,141	8,886	7,823	7,668	6,095
Streets, roads and parkways.....	7,190	7,742	10,579	13,721	13,721	20,844	26,887	30,285	26,850	22,006
Docks and ferries, etc.....	339	6,465	16,666	5,626	3,758	4,051	8,654	4,024	2,285	3,236
Buildings.....	3,346	5,791	12,939	14,218	24,268	58,046	47,264	19,981	19,642	22,427
Parks and park buildings.....	61	1,200	1,296	1,426	1,526	2,043	1,110	526	270	141
Borough presidents, five boroughs.....	3,816	5,135	8,413	5,628	5,524	4,262	4,393	1,593	2,533	2,237
Total Corporate Stock, Serial Bonds and Assessment Bonds.....	\$28,643	\$36,527	\$63,853	\$52,394	\$69,198	\$110,028	\$115,760	\$114,965	\$123,394	\$113,597
<b>Tax Notes</b>										
Subways.....	b	b	.....	11	.....	.....	17	116	210	181
Water supply systems, etc.....	b	b	11	.....	27	4	33	10	33	120
Streets, roads and parkways.....	b	b	.....	.....	.....	3	497	247	14	18
Docks and ferries, etc.....	b	b	611	475	788	385	1,112	1,731	1,483	2,431
Buildings.....	b	b	288	282	887	1,395	1,567	2,269	2,011	1,482
Parks and park buildings.....	b	b	149	469	1,334	1,458	1,165	1,237	1,505	1,829
Borough presidents, five boroughs.....	b	b	3,992	702	1,403	4,690	10,032	8,070	4,232	2,426
Miscellaneous.....	b	b	24	.....	29	.....	.....	.....	.....	409
Total Tax Notes.....	b	b	\$5,075	\$1,939	\$4,468	\$7,935	\$14,423	\$13,680	\$9,488	\$8,896
<b>Special Accounts</b>										
Buildings.....	.....	.....	.....	.....	.....	.....	.....	.....	115	102
Docks.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	140
Restoring and repaving streets, borough presidents	721	1,218	1,197	1,317	1,338	1,615	1,723	1,725	1,850	1,743
Total Special Accounts.....	\$721	\$1,218	\$1,197	\$1,317	\$1,338	\$1,615	\$1,723	\$1,725	\$1,965	\$1,985
Expenditures from Current Revenue.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,000
Grand Total.....	\$29,774	\$39,208	\$71,467	\$56,635	\$75,769	\$120,944	\$132,871	\$131,394	\$143,545	\$132,721

SOURCE: New York City, Comptroller's Annual Reports.  
 \* These are, strictly speaking, tax budget appropriations for repaving and resurfacing streets.  
 \* No separate statement is given during 1919 and 1920. During these two years expenditures financed out of tax note issues are included in the Corporate

TABLE 6. — EXPENDITURES ON PUBLIC CONSTRUCTION FINANCED BY BOND ISSUES IN NEW YORK CITY, 1919-1928\*.

SPECIAL REVENUE BOND FUND ACCOUNT  
(In thousands)

Purpose	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Army Board.....	...	...	...	...	...	...	...	\$123	\$235	\$190
President, Borough of Brooklyn.....	\$19	\$229	\$470	\$170	\$92	\$81	\$120	119	67	59
President, Borough of Manhattan.....	118	587	213	181	240	695	345	171	635	303
President, Borough of Queens.....	106	63	273	271	175	150	105	53	80	15
President, Borough of Richmond.....	77	227	124	53	54	77	9	28	30	7
President, Borough of The Bronx.....	75	191	262	167	127	363	296	180	151	19
Miscellaneous.....	15	166	...	143	77	...	90	350	500	650
Total.....	\$410	\$1,463	\$1,342	\$985	\$765	\$1,366	\$965	\$1,024	\$1,698	\$1,243

Source: New York City, Comptroller's Annual Reports, Statement Q 1.

\* Figures are for warrants paid during the course of each year. Expenditures on the acquisition of land have been excluded throughout.

TABLE 7. — EXPENDITURES ON PUBLIC CONSTRUCTION FINANCED BY BOND ISSUES IN NEW YORK CITY, 1919-1928.

CORPORATE STOCK, SERIAL BOND AND ASSESSMENT BOND FUND ACCOUNTS  
(In thousands)

Purpose	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Armory Board.....	\$ 167	\$ 78	\$ 136	\$ 122	\$ 487	\$ 140	\$ 133	\$ 190	\$ 66	\$ 3
Bellevue and Allied Hospitals.....	9	60	.....	12	12	588	2,671	1,208	1,200	2,104
Department of Public Welfare.....	919	195	1,275	597	306	152	181	706	1,212	1,438
Construction of New County Court House, Manhattan.....	.....	507	942	773	3,259	503	2,450	2,923	1,414	153
Department of Plant and Structures <sup>b</sup> .....	.....	528	2,549	2,899	2,791	3,470	5,251	2,422	885	1,280
Department of Public Markets.....	.....	.....	.....	.....	307	1,560	2,352	1,554	1,350	444
Department of Correction.....	363	151	51	15	20	8	.....	.....	.....	.....
Board of Education.....	1,577	4,679	10,069	12,010	3,060	52,614	38,313	13,068	13,709	17,006
College of the City of New York.....	4	.....	.....	.....	.....	.....	.....	.....	.....	922
Board of Higher Education.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27
Public libraries.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47
Department of Parks, Manhattan.....	41	759	415	505	1,149	1,187	872	480	219	77
Department of Parks, Brooklyn, The Bronx, etc.....	20	441	881	921	377	856	238	46	51	64
Westchester County Park (Bronx Parkway) Commission.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brooklyn-Richmond Tunnel.....	162	747	1,160	567	435	1,483	333	45	.....	.....
Department of Health.....	30	22	36	197	789	1,100	108	.....	.....	.....
Police Department.....	15	2	6	88	98	32	.....	54	406	185
Department of Street Cleaning.....	32	1	65	224	290	450	315	160	83	80
President, Borough of Brooklyn.....	1,096	1,187	2,324	1,511	1,111	1,809	733	76	190	18
President, Borough of Manhattan.....	1,150	1,618	2,954	1,746	2,189	1,580	3,609	1,355	490	696
President, Borough of Queens.....	516	1,150	1,004	1,402	1,402	1,402	80	99	1,530	1,245
President, Borough of Richmond.....	322	318	555	257	678	445	518	92	249	244
President, Borough of The Bronx.....	732	1,471	1,576	257	468	384	62	43	260	51
Board of Water Supply <sup>a</sup> .....	1,848	1,729	5,048	8,743	11,567	6,707	3,985	2,619	1,365	1,107
Department of Water Supply, Gas and Electricity.....	248	701	1,306	1,961	2,907	5,434	4,901	5,204	6,303	4,988
Department of Docks.....	189	5,937	14,117	2,727	967	171	3,403	1,602	1,400	1,956
Fire Department.....	230	96	359	324	318	.....	102	42	.....	.....
Board of Transportation (Rapid Transit Construction Fund) <sup>c</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Contract No. 1.....	.....	.....	.....	.....	144	162	60	133	26	11
Contract No. 2.....	.....	.....	.....	.....	.....	728	.....	.....	.....	.....
Contract No. 3.....	.....	.....	.....	.....	2,853	4,590	4,782	3,271	.....	1,960
Contract No. 4.....	.....	7,764	6,925	4,016	2,141	2,018	7,357	10,100	10,100	6,876
Other contracts (Ft. Washington Route, etc.).....	.....	.....	.....	.....	.....	43	6,259	39,431	52,060	50,103
Street Improvement Fund <sup>d</sup> .....	7,028	6,995	10,060	9,992	13,286	19,361	26,554	30,240	26,850	22,006

SOURCE: New York City, Comptroller's Annual Reports, Statement R.

\* Figures are for warrants paid. Cost of land has been excluded throughout.

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Includes ferryboat construction and purchase, which cost.....	....	....	\$632	\$202	\$424	\$560	\$627	\$950	\$188	\$430
Excludes expenditures on acquisition of sites, which cost.....	\$942	\$395	855	1,580	2,520	3,886	4,705	6,060	3,606	7,039
Excludes expenditures on acquisition of land, which cost.....	531	628	471	333	343	144	119	81	235	326
Excludes acquisition of sites, which cost.....	....	....	....	....	....	....	....	....	17,000	....
Excludes expenditures on acquisition of land which came out of Fund for Street and Park Openings (Assessment Bonds), as follows.....	4,348	11,324	4,430	2,305	2,310	2,387	10,006	8,847	12,425	24,354

TABLE 8. — EXPENDITURES ON PUBLIC CONSTRUCTION FINANCED BY BOND ISSUES IN NEW YORK CITY, 1921-1928\*.

TAX NOTE FUND ACCOUNTS  
(In thousands)

Purpose	1921	1922	1923	1924	1925	1926	1927	1928
Army Board.....	\$ 10	\$ 12	\$ 19	.....	.....	.....	\$ 74	\$ 51
Bellevue and Allied Hospitals.....	.....	11	.....	.....	.....	.....	.....	2
Board of Transportation (subways).....	.....	114	17	.....	17	116	210	181
Department of Public Welfare.....	85	.....	.....	49	152	901	663	179
Westchester County Park (Bronx Parkway) Commission.....	.....	450	713	363	497	247	14	18
Department of Plant and Structures.....	588	.....	.....	.....	1,102	1,731	1,460	2,010
Department of Correction.....	29	5	4	9	.....	.....	23	80
Department of Docks.....	23	25	75	22	10	.....	23	421
Board of Education.....	7	15	535	787	685	.....	287	121
Department of Health.....	2	.....	.....	.....	109	103	75	5
Department of Parks, Brooklyn.....	5	135	586	689	315	205	445	603
Department of Parks, Manhattan.....	133	161	355	407	359	475	479	506
Department of Parks, Queens.....	.....	91	155	71	154	185	353	309
Department of Parks, Richmond.....	.....	42	24	23	45	104	114	165
Department of Parks, The Bronx.....	11	40	214	268	292	268	114	246
Department of Street Cleaning.....	33	35	40	4	2	3	23	361
Department of Water Supply, Gas and Electricity.....	11	.....	27	4	33	10	33	120
Queens Borough Public Library.....	.....	.....	.....	.....	.....	.....	.....	185
Fire Department.....	115	78	240	414	403	461	706	450
Miscellaneous.....	24	.....	29	.....	.....	.....	.....	409
Police Department.....	7	23	32	132	216	487	160	48
President, Borough of Brooklyn.....	1,153	35	216	822	2,082	1,921	1,200	706
President, Borough of Manhattan.....	1,546	368	525	1,862	3,902	2,587	1,255	659
President, Borough of Queens.....	648	77	83	294	1,690	1,295	756	353
President, Borough of Richmond.....	279	95	313	294	455	856	404	305
President, Borough of The Bronx.....	366	127	266	1,356	1,903	1,411	617	403
Total.....	\$5,075	\$1,939	\$4,468	\$7,935	\$14,423	\$13,680	\$9,488	\$8,896

Source: New York City, Comptroller's Annual Reports, Statement R. 1.

\* Figures are for warrants paid. Cost of land has been excluded throughout. Figures are not given separately for 1919 and 1920 in the Comptroller's Reports but are included in Corporate Stock Fund Accounts for these two years. The total volume of tax notes issued in 1919 amounted to \$2,050,000.



TABLE 9. — EXPENDITURES ON PUBLIC CONSTRUCTION FINANCED OUT OF SPECIAL ACCOUNTS  
IN NEW YORK CITY, 1919-1928\*

(In thousands)

Purpose	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Construction and reconstruction										
Construction of library building,									\$115	\$102
City College.....	..	..	..	..	..	..	..	..	..	..
Department of Docks — recon-	..	..	..	..	..	..	..	..	..	140
struction.....										
Restoring and repaving streets	\$326	\$637	\$485	\$465	\$461	\$587	\$577	\$493	570	517
President, Borough of Brooklyn...	297	406	561	622	610	735	680	703	753	605
President, Borough of Manhattan.	29	48	55	68	84	113	275	331	317	380
President, Borough of Queens.....	25	41	37	55	65	65	62	67	79	97
President, Borough of Richmond..	44	86	59	107	118	115	129	131	131	144
President, Borough of The Bronx..										
Total restoring and repaving	721	1,218	1,197	1,317	1,338	1,615	1,723	1,725	1,850	1,743
streets.....										
Grand Total.....	\$721	\$1,218	\$1,197	\$1,317	\$1,338	\$1,615	\$1,723	\$1,725	\$1,965	\$1,985

SOURCE: New York City, Comptroller's Annual Reports, Statement S.  
\* Figures are for warrants paid. Cost of land has been excluded throughout.

tration of the voucher or the warrant and the payment of the warrant is naturally very short. The difference between voucher action and warrant action is explained as follows: "All bills presented to the city must be accompanied by a voucher from the department concerned certifying to the acceptance of the supplies or services performed. This voucher is immediately charged against the proper appropriation or other account. The Finance Department, however, must investigate or inspect the services represented by the voucher and satisfy itself as to the correctness of the bill. It has the power to reduce the amount if it deems it excessive. Having determined the amount which it will pay, the Department then prepares a warrant permitting the money to be drawn from the city treasury. The warrant must be signed by the Comptroller and the Mayor or his chief clerk. The check, which is part of the warrant, must be signed by the Chamberlain."<sup>14</sup>

**The City's Debt.**—The growth of the debt of New York since 1830, and the purposes for which it was incurred, have already been described.<sup>15</sup> The phases through which the development of permanent improvements passed are clear and well-defined. From 1835 to 1842 the rise in the debt was chiefly due to the Croton water supply; from 1860 to 1865, to the extraordinary outlays resulting from the war. In the period of Boss Tweed, from 1869 to 1874, the debt was piled high. Borrowings for public buildings and school and bridge construction increased in the seventies. Between 1893 and 1914 a new water supply system and the growing requirements of transit facilities were the principal sources of rising expenditures and increased indebtedness; and in the past decade subway construction, school buildings, street and sewer construction were responsible for the bulk of public expenditures.

Long-term borrowings, which fell substantially during the war, run after 1923 at the rate of more than \$100,000,000 a year. The total of bonds issued and of the issue of tax notes annually from 1910 to 1929 is shown in Table 10. Tax notes, at the outset designed to constitute a new method of pay-as-you-go financing, in the form of short-term obligations for financing public improvements, have failed to take the place of long-term borrowing. Table 11 gives the purpose of the new debt contracted yearly.

**Tax and Debt Limits.**—In the financing of permanent improvements and, indeed, the normal functions of government,

<sup>14</sup> *Lehman*, pp. 9-10.

<sup>15</sup> Chapter I, pp. 8-10, 13.

state, city and county governments are usually restricted by constitutional provisions in their power to raise taxes and to incur debts. The Constitution of New York State (Article VIII, Section

TABLE 10. — BONDS AND TAX NOTES ISSUED ON ACCOUNT OF EXPENDITURES FOR PERMANENT IMPROVEMENTS BY NEW YORK CITY, 1910-1929

(In thousands)

Year	BONDS ISSUED <sup>a</sup>			TAX NOTES ISSUED	TOTAL LONG-TERM BONDS AND ONE YEAR TAX NOTES ISSUED
	Non-exempt <sup>b</sup>	Exempt <sup>c</sup>	Total		
1910.....	\$40,560	\$22,463	\$63,023	....	\$63,023
1911.....	39,286	22,504	61,790	....	61,790
1912.....	48,351	20,050	68,401	....	68,401
1913.....	38,678	24,300	62,978	....	62,978
1914.....	59,270	21,425	80,695	....	80,695
1915.....	57,759	15,300	73,059	\$361	73,420
1916.....	50,745	6,650	57,395	538	57,933
1917.....	58,013	6,000	64,013	4,600	68,613
1918.....	2,327	....	2,327	3,000	5,327
1919.....	7,710	....	7,710	2,050	9,760
1920.....	6,324	....	6,324	4,250	10,574
1921.....	108,618	....	108,618	5,000	113,618
1922.....	28,264	20,000	48,264	2,500 <sup>d</sup>	50,764
1923.....	11,000	....	11,000	3,700	14,700
1924.....	110,372	26,135	136,507	7,000	143,507
1925.....	109,233	....	109,233	18,500 <sup>e</sup>	127,733
1926.....	85,218	23,870	109,088	16,500	125,588
1927.....	161,743	10,770	172,513	10,500	183,013
1928.....	158,285	11,715	170,000	10,500	180,500
1929.....	171,731	10,369	182,100	12,000	194,100

SOURCE: New York City, Comptroller's *Annual Reports*, Schedule B.

<sup>a</sup> Includes Corporate Stock, Serial Bonds and Assessment Bonds.

<sup>b</sup> Obtained by deducting figures of Exempt Bonds Issued from Total Bonds Issued.

<sup>c</sup> Water-supply Bonds.

<sup>d</sup> Exclusive of \$600,000 taken up during 1922 from proceeds of renewal bonds of similar amount.

<sup>e</sup> Exclusive of \$13,113,000 taken up during 1925 from proceeds of renewal notes of similar amount

10) limits the rate of taxes which may be levied for city and county purposes, exclusive of interest and amortization charges on the funded debt, to 2 per cent of the assessed valuation of real and

## 36 PLANNING AND CONTROL OF PUBLIC WORKS

personal property subject to taxation for county and state purposes. The same section of the Constitution fixes the limit of the net debt of counties and cities in the State of New York, with certain important and quite considerable exceptions in the case of New York City, at 10 per cent of the assessed valuation of real property subject to taxation. No county or city, therefore, is allowed to become indebted to an amount which, including existing

**TABLE 11. — PURPOSE OF NEW DEBT CONTRACTED YEARLY  
BY NEW YORK CITY, 1925-1929**

(In thousands)

	1925	1926	1927	1928	1929
January 1st each year—outstanding debt . . .	\$1,459,589	\$1,565,854	\$1,660,994	\$1,761,819	\$1,858,548
Add: new debt added during each year . . . . .	126,033	126,933	132,118	134,796	169,254
<b>Total . . . . .</b>	<b>1,585,622</b>	<b>1,692,787</b>	<b>1,793,112</b>	<b>1,896,615</b>	<b>2,027,802</b>
Less: redemptions of debt during each year . . . . .	19,769	31,793	31,292	38,068	58,909
December 31st each year—outstanding debt . . . . .	\$1,565,853	\$1,660,994	\$1,761,819	\$1,858,548	\$1,968,893
Yearly percentages of increase of debt . . . . .	....	6.1%	6.1%	5.5%	5.9%
<b>General Purposes of New Debt</b>					
Rapid transit . . . . .	\$20,360	\$51,351	\$64,661	\$61,041	\$99,404
Water supply . . . . .	9,960	7,660	7,970	7,015	11,369
Dock improvements . . . . .	6,925	2,350	17,003	3,132	7,071
School construction . . . . .	41,788	19,199	16,975	25,781	41,610
Various municipal purposes, hospitals, Brooklyn Municipal Building, etc. . . . .	26,950	35,724	18,510	12,828	8,260
Brooklyn-Richmond Tunnel . . . . .					
(abandoned—work discontinued) . . . . .	50	500	....	....	1,540*
Construction of sewers, highways, etc. . . . .	20,000	10,145	7,000	25,000	....
<b>Total . . . . .</b>	<b>\$126,033</b>	<b>\$126,933</b>	<b>\$132,118</b>	<b>\$134,796</b>	<b>\$169,254</b>
Assessed valuation of taxable real estate . . .	\$11,901,349	\$12,907,581	\$14,539,838	\$15,845,506	\$17,133,817
Yearly percentages of increase of taxable real estate . . . . .	....	9.211%	11.866%	8.980%	8.130%

SOURCE: New York City, Department of Finance, *Bureau of Accounting*.

\* Awarded by Supreme Court for acquisition of land.

indebtedness, exceeds 10 per cent of the assessed valuation of the real estate of the county or city subject to taxation. To this Article, however, there are certain general exceptions. Debts incurred for these purposes are outside of the debt limit in all cities of the state. Such are certificates of indebtedness or revenue bonds issued in anticipation of the collection of taxes; likewise debts contracted to provide for water supply facilities.

**The Debt Limit of New York City.**—In computing the debt incurring power of the city within the debt limit, the following deductions from its gross indebtedness are to be made:

1. Bonds issued by the city to be redeemed out of the tax levy for the next year succeeding the year of their issue, provided that the amount of such bonds which may be issued in any one year in excess of the debt limitation does not exceed one-tenth of one per cent of the assessed valuation of the real estate of the city subject to taxation.

2. Sinking Fund accumulations, since the indebtedness referred to by the constitutional amendment is net and not gross indebtedness.

3. The debt of the counties consolidated into New York City, as it existed at the time of the consolidation, which is exempted by an amendment to the Constitution in 1899.

4. Water bonds and water corporate stock notes issued after December 31, 1903, exempted by constitutional amendment of 1905.

5. Certain revenue producing improvements for New York City which, after deduction of all repairs and maintenance, netted a revenue in excess of debt charges, exempted by constitutional amendment of 1909. In effect, this means that some subway and dock bonds were exempted from the debt limit to the extent that they were self-sustaining. This exemption is available only for rapid transit and dock improvements.

6. Debts not exceeding \$300,000,000, incurred by the city after Jan. 1, 1928, for the construction and equipment of subways, exempted by constitutional amendment in November 1927.

After making these deductions there have to be added to the resulting figure the non-funded contract and land liabilities and open market orders. The sum obtained is the total indebtedness within the debt limit, and after this is subtracted from the total debt-incurring power of the city within the debt limit (that is, 10 per cent of the assessed valuation of taxable real estate), the difference is the constitutional debt-incurring power of the city within the debt limit as of a particular date. This debt margin naturally fluctuates from year to year. An increase in assessed valuation increases the margin. On the other hand, it is reduced by the inauguration of new public improvements.

On frequent occasions the debt limit has proved to be highly embarrassing to the city, and repeated constitutional amendments have been adopted for the purpose of increasing the borrowing powers of the city. These substantial increases, however, have not removed the fear of like difficulties in the future. The city could not have proceeded with its subway construction program had not subway debts to the extent of \$300,000,000 been specifically exempted by the constitutional amendment of November 8, 1927. Thus a city in the position of New York might, in times of emergency, when it is desired to expand public construction, be prevented from increasing capital expenditures by borrowing, in consequence of the nearness of its debt to the debt limit, unless the cumbersome procedure involved in first obtaining an exemption through an amendment to the state constitution be invoked.

Increases in the city debt-incurring power may also come from a rise in the total valuation of taxable property. "There is also available a third method [of expanding the debt limit] which, while it does not make possible a larger outstanding debt at any given moment, does make it possible to borrow a larger aggregate amount in a given period of time, at the cost of increasing current revenues by the same amount. . . . This third method consists of shortening the term of new bonds issued and/or of redeeming [them] before maturity, or merely through the accumulation of larger resources in the sinking funds,"<sup>16</sup> which are deductible from gross income in computing the city's net indebtedness. "By issuing fifty year bonds, the city has frozen its credit so that its program of permanent improvements is seriously menaced. . . . Shorter terms for city bonds would make the borrowed moneys revolve more quickly. The same amount of constitutional debt-incurring capacity would therefore permit the city to perform double the amount of work."<sup>17</sup> A fourth method was employed when, in 1927, the Board of Estimate decided "to attempt to work out the financing of the Tri-Borough Bridge without using public credit through the creation of a Bridge Authority," such as the Port of New York Authority, which would have the power "to issue bonds to be paid from the tolls of the bridges. Inasmuch as most of the city's available credit is being earmarked for its subway program, it is

<sup>16</sup> *Lehman*, p. 216.

<sup>17</sup> *Lehman*, pp. 220-221.

difficult to see how bridges or tunnels or other major improvements can be financed without some such device." <sup>18</sup>

A summary of New York City's outstanding indebtedness and of its additional debt-incurring power on the first of January from 1920 to 1929 is given in Table 12. Here the first column shows total

TABLE 12. — TOTAL INDEBTEDNESS, DEBT INCURRING POWER AND UNRESERVED DEBT MARGIN IN NEW YORK CITY, 1920-1929

(In thousands)

YEAR <sup>a</sup>	TOTAL INDEBTEDNESS WITHIN DEBT LIMIT	CONSTITUTIONAL DEBT INCURRING POWER	UNRESERVED DEBT MARGIN <sup>b</sup>
1920.....	\$ 772,354	\$70,478	\$21,439
1921.....	799,098	63,514	35,233
1922.....	822,032	175,267	133,643
1923.....	851,818	173,181	128,515
1924.....	911,283	148,323	67,116
1925.....	991,458	123,424	47,011
1926.....	1,088,387	101,748	42,175
1927.....	1,172,614	127,144	101,521
1928.....	1,253,064	200,920	162,410
1929.....	1,269,969	314,582	266,504 <sup>c</sup>

SOURCE: New York City, Comptroller's *Annual Reports*.

<sup>a</sup> Figures as of January 1st.

<sup>b</sup> These figures were obtained by deducting the total indebtedness within the debt limit (gross funded debt minus debt excluded from limit, in accordance with the state constitution) from an amount equal to 10% of the assessed valuation of the taxable real estate of New York City. The result constitutes the debt incurring power; whatever part of this amount was not specifically authorized by the Board of Estimate and Apportionment is represented by the unreserved margin.

<sup>c</sup> In addition to this amount there is a still unencumbered balance of \$198,887,000, out of a \$300,000,000 credit, without the constitutional debt limit, which may be used by the city "for the construction or equipment, or both, of new rapid transit railroads."

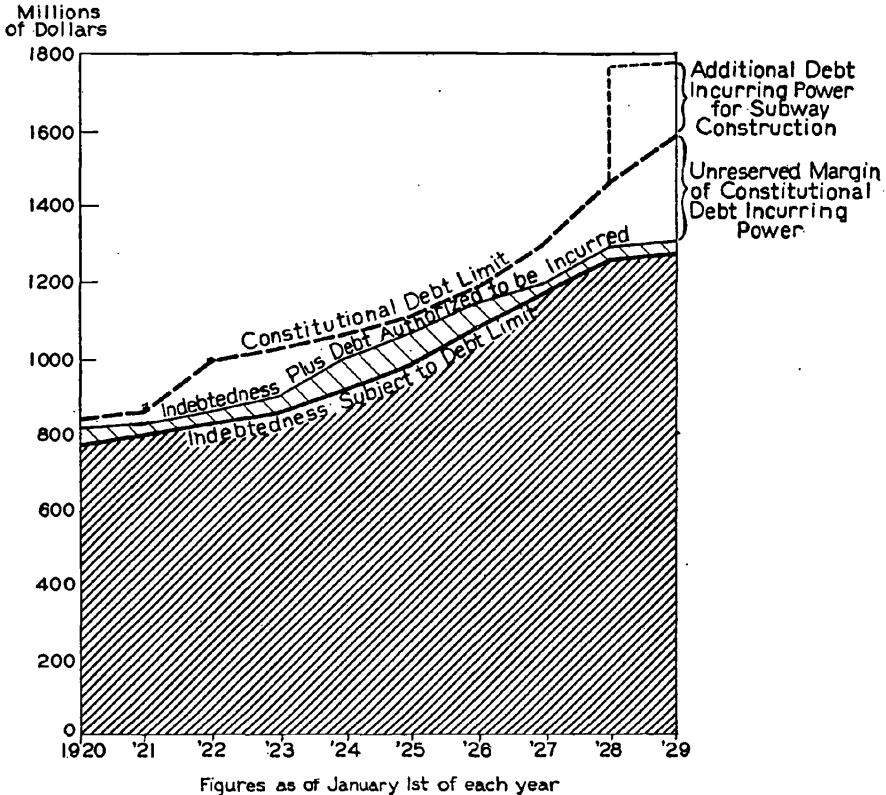
indebtedness within the debt limit, the second the debt-incurring power, and the third that portion of the debt-incurring power still not earmarked by the Board of Estimate. As is pointed out in the note to this table, it does not include an unencumbered balance of \$198,887,000, out of a \$300,000,000 credit, exempted from the

<sup>18</sup> *Lehman*, p. 221. The construction of the Holland Tunnel was a project financed by New York State in conjunction with New Jersey, which entailed no financial obligations upon the city. In the case of similar city projects, however (such as the Tri-Borough bridge), a question arises whether the obligations of such a creature of the city would not be an indirect obligation of the city and be a charge to the city debt limit.

## 40 PLANNING AND CONTROL OF PUBLIC WORKS

debt-limit provision, for the construction and equipment of rapid transit facilities.

CHART 5.—TOTAL INDEBEDNESS, DEBT INCURRING POWER, AND UNRESERVED DEBT MARGIN IN NEW YORK CITY, 1920-1929.



The other cities of New York State have frequently found constitutional debt limitations embarrassing. The position of a selected group of these cities in the years 1925 to 1927 is described in Table 13.

**The Purchase of Supplies and Equipment.**—It is impossible from the available sources to prepare a satisfactory account either of the types of supplies and of equipment, in physical units, annually purchased by the departments of New York City, or of even the total amount spent for these items. "The budget of New York



TABLE 13. — TOTAL BONDED AND TEMPORARY INDEBTEDNESS AND CONSTITUTIONAL MARGIN OF DEBT INCURRING CAPACITY IN SELECTED CITIES IN NEW YORK STATE, 1925-1927

(In thousands)

YEAR	TOTAL BONDED INDEBTEDNESS	TOTAL TEMPORARY INDEBTEDNESS	CONSTITUTIONAL MARGIN OF DEBT INCURRING CAPACITY
<b>BUFFALO</b>			
1925.....	\$68,409	\$1,994	\$28,820
1926.....	74,696	2,027	42,376
1927.....	82,296	6,278	39,069
<b>ROCHESTER</b>			
1925.....	45,815	6,524	5,444
1926.....	50,387	6,416	10,743
1927.....	53,712	7,750	10,959
<b>SYRACUSE</b>			
1925.....	23,495	900	3,147
1926.....	28,100	400	9,118
1927.....	32,362	500	5,324
<b>YONKERS</b>			
1925.....	20,329	4,042	3,423
1926.....	25,927	....	4,646
1927.....	21,584	6,990	11,315
<b>ALBANY</b>			
1925.....	16,558	750	2,677
1926.....	18,482	....	4,408
1927.....	20,796	1,625	5,199
<b>UTICA</b>			
1925.....	6,904	120	6,178
1926.....	8,696	170	4,403
1927.....	9,288	250	4,088

SOURCE: New York State, *Annual Reports of the State Tax Commission*.

City is not designed to show accurately and precisely how much is spent annually for supplies, materials and equipment. Appropriations are made to each spending agency for 'supplies, equipment and materials,' but this does not tell the whole story. A separate budget allotment termed 'contract or open order service' is made to each department for repairs, alterations, replacements, and

new construction projects, and includes labor as well as commodities. Supplementary appropriations which are made throughout the year by the Board of Estimate and Apportionment still further complicate the situation. For this reason, it is exceedingly difficult to secure definite figures on the total spent by each using agency, or by the entire city government for supplies, materials and equipment.

"The largest buyers in the city government are the Department of Education, the Department of Public Welfare and the Department of Street Cleaning. These spent, during 1926 respectively nearly \$6,000,000, over \$3,000,000, and over \$2,000,000. These figures include not only the amount appropriated for supplies, materials and equipment, but also approximately that proportion of the appropriation for contracts or open order service which was spent for commodities." <sup>19</sup>

**Purchasing Agencies in New York City.**—"Since the establishment of the Department of Purchase, it is commonly believed that the city government has a centralized purchasing agency. Such is by no means the case. . . . The Department of Purchase is not a real purchasing agency; nor does its limited jurisdiction extend to all the city and county agencies within Greater New York. Some of these agencies purchase independently; others share that responsibility with the Department of Purchase. The main purchasing agencies now are the Department of Purchase, the Borough President's office, in each of the five boroughs, the Board of City Record, and the Bureau of Supplies of the Department of Education." <sup>20</sup>

The Department of Purchase was established by Chapter 890 of the Laws of 1923. The department has jurisdiction over the purchasing procedure and practices of all the Mayor's departments, except the Department of Education. Its authority extends therefore only to the Mayor's departments. The city and county courts, the supreme courts, the public libraries, the Board of Water Supply, the Board of Transportation and the Transit Commission purchase independently by virtue of special statutes or charter provisions. Several semi-public agencies, such as museums, buy through the Department of Purchase when the expenditures come from city funds but independently if the expenditures are derived from their private funds.

<sup>19</sup> *Lehman*, p. 104.

<sup>20</sup> *Lehman*, p. 106.

During 1926 the following volume of purchases was made through the Department: contracts \$12,707,000; informal awards \$408,000; open market \$2,358,000; making a total of \$15,473,000.

"The supplies purchased by the Borough Presidents' offices are in the main for street paving and repair, sewer construction and maintenance, motor equipment and repairs, fuel supplies, and [in Queens and Richmond] supplies necessary for street-cleaning activities. All stationery and printed supplies used by the Borough Presidents' offices are secured through the Board of City Record."<sup>21</sup>

The Board of City Record is given power to purchase and distribute all printing and stationery supplies, in addition to publishing the *City Record*, the city's official daily newspaper. But the following agencies of the city buy their printing and stationery supplies independently: The Department of Education, the Board of Elections, City College, Hunter College, the Board of Transportation, the Transit Commission, the Board of Water Supply, the supreme courts, museums and libraries. The budget appropriations to the Board of City Record were as follows for 1927: for the city, over \$1,300,000; for the counties, over \$1,400,000.

The Bureau of Supplies of the Department of Education buys all books, supplies, fuel, scientific apparatus and equipment for the school system of the city with the exception of furniture installments, replacements and repairs which are furnished through the Bureau of Construction and Maintenance. Hunter College and City College also buy their supplies independently. During 1925 the total expenditures of the Bureau of Supplies amounted to \$5,741,000. In addition the school system spent \$3,357,000 for furniture and equipment through the Board of Construction and Maintenance.

"The Department of Purchase cannot anticipate requirements and thereby take advantage of favorable market conditions, because it has no contact with store records and no account of stocks on hand in individual departments. In all cases the Department of Purchase, before proceeding to buy, must wait until requisitions are received. . . . The Borough Presidents' offices, generally speaking, buy nothing until requisitions are received, and make no attempt to profit by favorable market conditions."<sup>22</sup>

The Lehman Committee on Plan and Survey of New York

<sup>21</sup> *Lehman*, pp. 107-108.

<sup>22</sup> *Lehman*, p. 113.

TABLE 14. — TAX BUDGET APPROPRIATIONS OUT OF CURRENT REVENUE, FOR PUBLIC WORKS AND FOR SUPPLIES, EQUIPMENT AND MATERIALS, IN NEW YORK CITY, 1919-1929  
(In thousands)

Purpose	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Streets, highways and bridges, care and maintenance (personal service).....	\$5,154	\$6,244	°	\$6,645	\$7,348	\$7,339	\$8,253	\$8,955	\$10,094	\$11,273	\$9,644
Reparing and maintenance; resurfacing of streets and avenues (contracts).....	...	...	°	...	...	...	...	...	7,000	7,000	8,500
Public buildings and offices; care and maintenance (personal service).....	398	488	°	480	506	526	572	627	687	743	764
Public buildings and offices; care and maintenance (contracts).....	...	...	°	1,043	1,267	1,510	1,743	2,075	2,725	3,079	3,184
Construction and equipment of new municipal airport.....	...	...	°	...	...	...	...	...	...	...	2,500
Protection of life and property (contracts)	4,049	4,152	°	3,235	3,372	3,746	4,015	4,332	4,621	5,018	5,596
Consumable supplies											
Educational (schools, colleges and libraries).....	2,649	3,883	°	4,447	4,920	5,224	4,719	4,959	4,985	5,438	5,371
Health and sanitation.....	2,768	2,933	°	2,526	2,519	2,543	2,624	2,830	3,231	3,312	5,642
Protection of person and property.....	643	671	°	804	984	855	1,030	983	1,074	1,108	973
Correctional purposes.....	794	783	°	628	636	584	551	648	690	691	726
Public welfare (charitable purposes).....	2,417	2,779	°	2,292	2,222	2,399	2,318	2,492	2,739	2,732	416
Care and maintenance of streets.....	803	844	°	317	344	348	315	377	424	455	454
Operation and maintenance of docks and ferries.....	24 <sup>b</sup>	38 <sup>b</sup>	°	897	1,063	1,002	915	986	1,097	1,402	1,443
Other purposes.....	1,350	1,681	°	1,254	1,782	1,832	1,647	1,652	1,746	1,834	1,768
Total of consumable supplies.....	\$11,448	\$13,612	°	\$13,166	\$14,470	\$14,787	\$14,119	\$14,927	\$15,986	\$16,972	\$16,793

FOR SUPPLIES, EQUIPMENT AND MATERIALS, IN NEW YORK CITY, 1919-1929—Continued

(in thousands)

Purpose	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
<b>Equipment</b>											
Educational (schools, colleges and libraries).....	\$ 624	\$496	"	\$1,241	\$1,781	\$1,688	\$1,587	\$1,648	\$1,683	\$1,951	\$2,134
Health and sanitation.....	487	675	"	596	603	641	1,213	1,304	1,496	2,008	1,465
Protection of person and property.....	246	630	"	382	1,006	881	1,320	959	1,132	1,004	1,021
Correctional purposes.....	174	197	"	108	126	120	164	166	175	175	183
Public welfare (charitable purposes).....	367	404	"	413	417	432	397	436	489	469	64
Care and maintenance of streets.....	114	263	"	140	232	205	330	402	462	415	457
Operation and maintenance of docks and ferries.....	2 <sup>b</sup>	5 <sup>b</sup>	"	51	88	135	97	129	139	210	191
Other purposes.....	164	383	"	259	393	406	452	537	576	562	545
<b>Total of equipment.....</b>	<b>\$2,178</b>	<b>\$3,053</b>	<b>"</b>	<b>\$3,190</b>	<b>\$4,646</b>	<b>\$4,508</b>	<b>\$5,560</b>	<b>\$5,581</b>	<b>\$6,152</b>	<b>\$6,794</b>	<b>\$6,060</b>
<b>Materials, repairs and replacements</b>											
Educational (schools, colleges and libraries).....	1,003	2,454	"	3,447	3,441	3,365	3,292	2,848	2,680	2,716	3,253
Health and sanitation.....	583	932	"	1,311	1,287	1,331	1,566	1,740	1,891	2,030	2,332
Protection of person and property.....	354	594	"	837	935	957	1,570	1,113	1,197	1,261	1,127
Correctional purposes.....	119	202	"	168	156	123	117	125	145	159	159
Public welfare (charitable purposes).....	192	780	"	428	482	400	389	339	455	467	58
Care and maintenance of streets.....	1,351	1,908	"	1,096	952	986	1,132	1,179	1,246	1,452	1,431
Operation and maintenance of docks and ferries.....	139 <sup>b</sup>	190 <sup>b</sup>	"	392	479	641	540	533	651	689	651
Other purposes.....	365	992	"	818	848	938	965	1,006	1,151	1,339	1,406
<b>Total of materials, repairs, etc.....</b>	<b>\$4,106</b>	<b>\$8,052</b>	<b>"</b>	<b>\$8,497</b>	<b>\$8,580</b>	<b>\$8,741</b>	<b>\$9,571</b>	<b>\$8,883</b>	<b>\$9,416</b>	<b>\$10,113</b>	<b>\$10,417</b>

Source: New York City, Department of Finance, Bureau of Accountancy. Table of Budget Appropriations, published by Board of Estimate and Apportionment in Annual Budgets.

<sup>a</sup> Figures are not available for 1921 because of a change in the form of the budget of that year

<sup>b</sup> Figures are for docks only.

City's Finances made the following recommendations in its report with regard to purchasing methods:

"The Department of Purchasing should be given the power to make purchases under favorable market conditions in anticipation of subsequent needs of the several departments. For this purpose, a revolving fund should be created by tax appropriation. When supplies which have been purchased out of this fund are issued to any department the funds would be reimbursed out of that department's appropriation for such supplies. It might indeed be desirable to make all appropriations for supplies and standard equipment subject to disbursement by the Department of Purchasing rather than the consuming units. The purchase of supplies and equipment for the offices of the Borough Presidents and for the county governments should unquestionably be given to the Department of Purchasing."<sup>23</sup>

Such summary as can be made of the annual purchase of supplies and equipment by New York City is presented in Table 14 in the form of annual appropriations. Because of the difficulty of collecting actual expenditures, the statistics of annual appropriations are probably the best available index of the amounts spent out of tax receipts on repairs, maintenance, supplies and equipment. The Comptroller's office believes that budget appropriations and actual expenditures correspond very closely and advises using appropriations as a satisfactory measure of expenditures.

Strictly speaking, none of these appropriations are for new construction. All such work in New York City is financed by bond issues. In addition a large amount of repair and maintenance work is also financed out of bond issues. In New York City the volume of public works financed by tax receipts out of current income is a very small fraction of the total and almost negligible in comparison with construction financed through long-term indebtedness. The figures in Table 14, then, do not include all expenditures of this sort, made by New York City. Above all, expenditures on materials, supplies and equipment for construction work financed by bond issues—the predominant part of such expenditures—do not appear in this table at all. In others words, the figures do not show the amounts which the departments expended from other than tax budget funds.

<sup>23</sup> *Lehman*, p. XXXII.

**Future Projects.**—It is difficult, in the absence of a detailed future program of public works, to estimate with precision the annual expenditures on public construction during each of the next five years. Vast projects of infinite variety are constantly being planned and their costs estimated, but it is not clear where they fall into the schedule of appropriations and expenditures. In view, however, of the pressing needs for such permanent improvements as subways, tunnels, bridges, other forms of improved transit facilities, school buildings, water supply and sewage systems, it would do no violence to the facts to predict a rising level of expenditures during the coming years, particularly since many of the very large projects are either already under way or are about to begin. The further, also, that proposed permanent improvements are projected into the future, the vaster the total of these undertakings appears to become.

A survey of the estimated cost of projects, scheduled for completion during the fifteen years following 1927, would place the probable annual expenditures around \$200,000,000, or something like \$50,000,000 a year in excess of the expenditures of the past several years. The following items in this program,<sup>24</sup> however, do not include port and harbor trunk-line railroad improvements, highway and park improvements, and educational buildings.

New York City rapid transit.....	\$1,087,000,000
Suburban rapid transit.....	645,000,000
Bridges .....	510,000,000
Additional water supply.....	483,000,000
Incinerator plants, New York City.....	3,000,000
Sewage interceptors and treatment plants, New York City (assuming 2/3 of estimated cost required by 1940).....	81,000,000
Highway traffic improvements.....	130,000,000
Land for parks and parkways.....	40,000,000
Total.....	<u>\$2,979,000,000</u>

The following more detailed conspectus, made by the General Contractors' Association of New York,<sup>25</sup> while it is subject to revision as to specific projects and cannot be reduced to any time schedule, shows likewise an expanding budget for the city's perma-

<sup>24</sup> *Regional Survey of New York and Its Environs*, Volume II, p. 295.

<sup>25</sup> *The Bulletin of the General Contractors' Association*, New York City, Volume XX, No. 8, August, 1929.

ment improvements:

Subways under contract or authorized <sup>a</sup> .....	\$600,000,000
New subway system recently announced <sup>b</sup> .....	600,000,000
Delaware River water supply.....	300,000,000
Elimination of New York Central Railroad Tracks.....	175,000,000
Thirty-eighth Street Vehicular Tunnel.....	86,000,000
Narrows Vehicular Tunnel.....	78,000,000
New School Buildings.....	46,150,000
City Water Tunnel No. 2.....	42,692,000
Tri-Borough Bridge.....	25,000,000
West Side Elevated Express Highway.....	20,000,000
Ward's Island Sewerage Plant.....	20,000,000
Improvements connected with West Side Plan.....	11,995,000
Kings County Court House.....	10,000,000
Riker's Island Penitentiary.....	9,000,000
Bronx County Building and Jail.....	8,000,000
New Hunter College Building.....	6,000,000
Fire and Police Houses, Traffic Lights.....	6,000,000
Bellevue Psychopathic Pavilion.....	5,000,000
Kings County Hospital.....	5,000,000
New Wing, Metropolitan Museum.....	3,000,000
Barren Island Air Port.....	2,500,000
Brooklyn Central Library Wing <sup>c</sup> .....	1,000,000
New Wing, American Museum.....	1,000,000
Women's House of Detention.....	1,000,000
Total.....	\$2,062,337,000

<sup>a</sup> \$200,000,000 of this amount still remains to be spent.

<sup>b</sup> Includes equipment.

<sup>c</sup> This figure is not correct, and is estimated to be closer to \$8,000,000.

The plans of several individual administrative departments may furnish a more useful view of the magnitude of the future permanent improvements of New York City than can be got from a general list of undertakings extending far into the future. As in the past decades, the heaviest contemplated expenditures are for various forms of transit facilities. Unless the present congestion of the transportation facilities of the city is ameliorated by other means, the pressure for further construction of subways, bridges, tunnels and manifold highway improvements is bound to continue unabated during the predictable future.

Expenditures on subway construction in the years 1927 and 1928 were in round numbers \$63,000,000 and \$59,000,000. The program for recent subway construction began with a report to the Transit Commission in 1921. The first step for carrying out this program was taken in 1924-1925 with a plan for constructing 55 miles of route. Starting with the last six months of 1924, the total payments, exclusive of land, on vouchers approved and passed by



the Board of Transportation for all the city's subway systems were as follows:

1924 (six months).....	\$ 3,411,505
1925 .....	19,614,353
1926 .....	52,500,978
1927 .....	63,259,410
1928 .....	58,833,880
1929 <sup>a</sup> .....	78,185,132
Total <sup>b</sup> .....	\$275,805,258

<sup>a</sup> The figure for 1929 is preliminary. As in previous years, the 1929 figure represents vouchers approved and passed by the Board, for contracts 3 and 4, and for the Independent System through September 30; but from October through December, 1929, the figure for the Independent System includes vouchers certified by the Chief Engineer, a small amount of which may not be included in vouchers approved by the Board.

<sup>b</sup> It will be observed that the figures in this tabulation represent vouchers approved and passed by the Board and are not exactly equivalent to annual expenditures since there is a time lag between the issue of vouchers and expenditures by the city.

The second stage of recent rapid transit development is represented in future projects involving an estimated cost, exclusive of equipment and recapture, of \$436,800,000. These projects provide for subways from the lower tip of Manhattan to the upper districts of the Bronx and Sheepshead Bay, Rockaway Peninsula and several distant localities in Queens.

The table below is a summary of the mileage and estimated cost of this proposed system, without indicating the period in which the expenditures will be made.<sup>26</sup>

Borough	Route Miles	Track Miles	Estimated Cost
Bronx.....	19.04	51.32	\$ 78,000,000
Brooklyn.....	16.84	61.52	114,500,000
Manhattan.....	11.87	45.48	126,800,000
Queens.....	52.37	136.49	117,100,000
Total.....	100.12	294.81	\$436,400,000

Another source of vast public expenditures in a growing city arises out of the provision for adequate water supply. These expenditures have historically passed through phases of great expan-

<sup>26</sup> Release of the Board of Transportation, New York, September, 1929.

## 50 PLANNING AND CONTROL OF PUBLIC WORKS

sion and contraction as old supplies of water were exhausted and new ones had to be tapped. The record of the course of construction since 1906 is shown in Table 15.

**TABLE 15. — VALUE OF CONTRACTS AWARDED AND WORK DONE BY NEW YORK CITY BOARD OF WATER SUPPLY, 1906-1928**

YEAR	VALUE OF CONTRACTS AWARDED <sup>a</sup>	NUMBER OF CONTRACTS OPERATIVE	VALUE OF WORK DONE UNDER OPERATIVE CONTRACTS
1906.....	\$79,775	1	\$22,984
1907.....	16,912,086	5	228,133
1908.....	9,746,104	12	1,877,790
1909.....	38,233,463	39	7,713,423
1910.....	6,031,795	43	15,600,268
1911.....	22,250,129	54	19,104,290
1912.....	1,359,345	62	19,459,970
1913.....	2,471,850	58	15,053,256
1914.....	2,668,106	51	11,026,495
1915.....	727,194	47	4,309,893
1916.....	675,767	39	1,816,068
1917.....	12,906,304	43	815,007
1918.....	37,477	26	602,054
1919.....	7,034,427	15	1,300,993
1920.....	383,630	8	1,375,705
1921.....	6,282,523	11	4,545,769
1922.....	115,640	8	7,958,751
1923.....	5,457,866	13	10,884,181
1924.....	1,244,518	15	5,061,581
1925.....	3,598,062	12	2,818,278
1926.....	.....	6	1,522,292
1927.....	776,331	8	648,946
1928.....	42,752,851	13	205,545
Total.....	\$181,745,243	..	\$133,951,672

SOURCE: New York City, Board of Water Supply, *Annual Report, 1928*, Report of the Chief Engineer, p. 59.  
<sup>a</sup> Includes additional amounts certified to be expended on contracts awarded during previous years

The Board of Water Supply now has outstanding contracts amounting to over \$40,000,000, for the construction of a water supply delivery tunnel. In addition, the first steps have been

taken in a new program for the construction of additional sources of water supply for the city, known as the Delaware River Supply Plan. It is estimated that the cost of this plan during the next twelve years will be about \$273,000,000, to be expended roughly according to the following schedule.<sup>27</sup>

	Annual Cost	Cumulative Cost
1st year	\$ 3,000,000	\$ 3,000,000
2nd year	10,000,000	13,000,000
3rd year	20,000,000	33,000,000
4th year	40,000,000	73,000,000
5th year	45,000,000	118,000,000
6th year	45,000,000	163,000,000
7th year	40,000,000	203,000,000
8th year	25,000,000	228,000,000
9th year	15,000,000	243,000,000
10th year	15,000,000	258,000,000
11th year	10,000,000	268,000,000
12th year	5,000,000	273,000,000

Any time schedule for huge projects of this nature is naturally subject to revision as a result of many fortuitous circumstances. It is estimated, however, that of the four contracts for the delivery tunnel awarded on October 5, 1928, aggregating \$42,692,567 and known as contracts Nos. 224, 225, 226 and 227, the first will be completed in 67 months from October 15, 1928, the second in 68, the third in 70, and the fourth in 69 months.

In their present form, neither the general estimates of New York City's future projects, nor the more detailed plans of the Board of Transportation and of the Board of Water Supply can be used to forecast the probable annual expenditures on permanent improvements in each of the next five years. All of the data, however, do indicate an expanding program of public works during the next decade, and probably beyond that. It is a fair inference, then, that the existence of a detailed program of public works and of a more centralized authority for its execution, would allow a greater measure of control, either by way of retardation or acceleration, than appears feasible under existing conditions.

<sup>27</sup> New York City, Board of Water Supply, *Annual Report*, 1928, Appendix 1, p. 83.

**The Numbers Directly Employed on Public Works.**—Much of public construction in this country is usually done not directly by a public agency but by private contractors. The payroll records of these contractors are rarely available and it is, consequently, almost impossible to procure an adequate picture of the numbers employed directly on public construction in the United States, except by methods of estimate. A count of the number so employed in New York City during the autumn of 1929 was attempted and the results of this census are shown in Table 16.

TABLE 16. — ESTIMATED NUMBER OF EMPLOYEES ON PUBLIC WORKS IN NEW YORK CITY, FALL OF 1929

DEPARTMENT	ESTIMATED NUMBER EMPLOYED		
	On Payroll	Under Contract	Total
Armory Board . . . . .	0	100	100
Bronx, President of Borough of . . . . .	1,250	950	2,200
Brooklyn, President of Borough of . . . . .	1,700	1,600	3,300
Corrections, Department of . . . . .	30	100	130
Docks, Department of, Bureau of Engineering . . . . .	450	200	650
Education, Department of . . . . .	500	3,000	3,500
Estimate and Apportionment, Board of . . . . .	15	25	40
Fire Department . . . . .	0	200	200
Higher Education (C. C. N. Y. and Hunter) . . . . .	0	150	150
Hospitals, Department of . . . . .	200	300	500
Manhattan, President of Borough of . . . . .	1,500	1,500	3,000
Parks, Department of . . . . .	50	300	350
Plant and Structures, Department of . . . . .	400	400	800
Police Department . . . . .	0	100	100
Queens, President of Borough of . . . . .	2,000	1,800	3,800
Richmond, President of Borough of . . . . .	650	500	1,150
Transit Commission . . . . .	200	0	200
Transportation, Board of . . . . .	2,550	12,700	15,250
Water Supply, Board of . . . . .	150	1,400	1,550
Water Supply, Gas and Electricity, Department of . . . . .	1,200	700	1,900
<b>Total . . . . .</b>	<b>12,845</b>	<b>26,025</b>	<b>38,870</b>

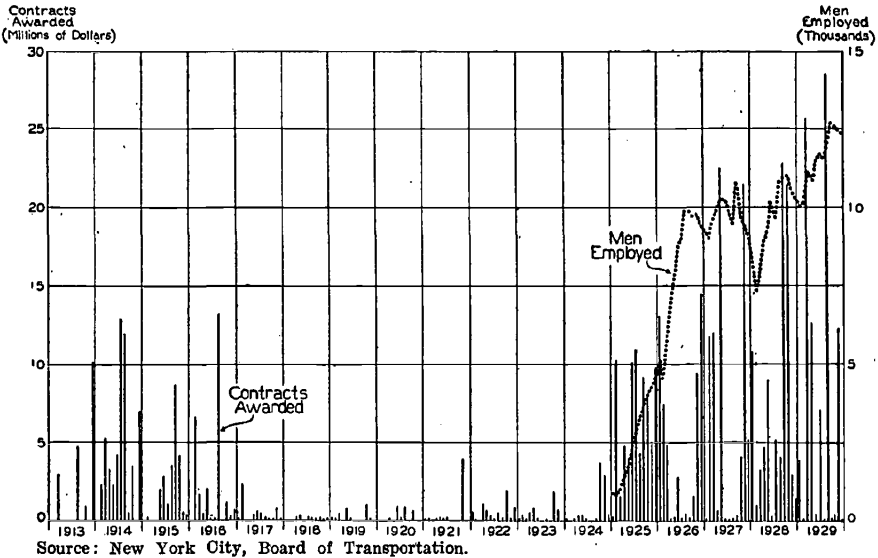
SOURCE: New York City *Civil List* and estimates of departments.

It is probable that the total of 38,870 is a considerable underestimate. Competent students estimate the number to be closer to 50,000. Contracts for public works awarded in New York City in 1928 amounted to \$225,000,000. If the total value of output of an

employee be placed at \$4,500, the numbers employed on these contracts would be about 50,000. A conservative estimate of the average number so employed in 1929, would, therefore, be about 40,000.

**The Total Numbers Employed by New York City.**—It should be of interest in this connection to obtain some estimate of the

CHART 6.—MONTHLY CONTRACTS AWARDED FOR SUBWAY CONSTRUCTION IN NEW YORK CITY, 1913-1929 AND AVERAGE NUMBERS OF MEN EMPLOYED THEREON, 1925-1929.



total number of persons employed by New York City in the administration of the normal functions of government,<sup>28</sup> on public works, and in the operation of the transit system of the city. The results of such an estimate are given in the following tabulation, which presents the average condition in 1929:

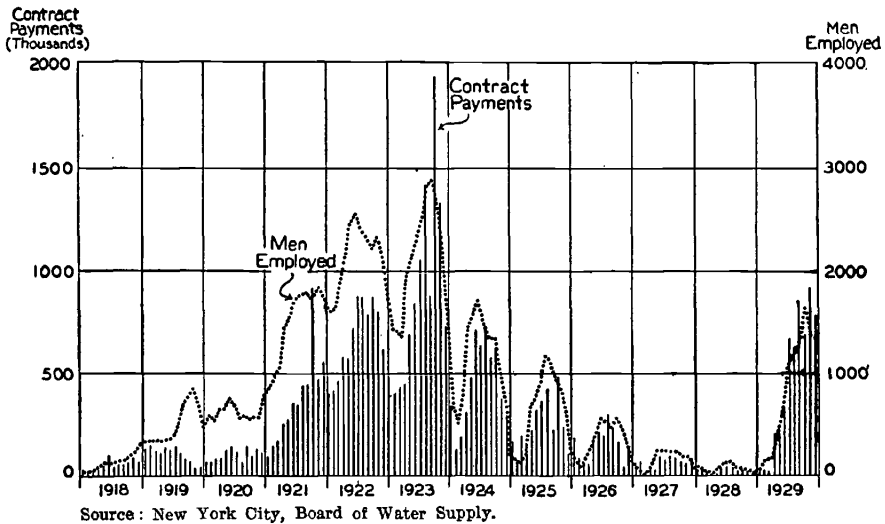
Officials and employees of New York City.....	131,667
Officials and employees in transit operations....	41,108 <sup>a</sup>
Directly employed on public works.....	40,000
Total .....	212,775

<sup>a</sup> This figure is for 1928.

<sup>28</sup> For the details of this category, see Appendix D.

**Control.**—There is hardly any tangible evidence of the exercise of control over public works by the administrative agencies of New York City. It is clear, however, that any comprehensive program of planning and control would involve radical changes in municipal organization and procedure. Much would depend also, as will be seen later, on the type of control which it is desired to employ. Acceleration of permanent improvements over short

CHART 7.—CONTRACT PAYMENTS FOR CONSTRUCTION OF WATER SUPPLY SYSTEMS IN NEW YORK CITY AND AVERAGE NUMBERS OF MEN EMPLOYED THEREON, MONTHLY, 1918-1929.



periods only, would impose emergency burdens on city departments that might easily be borne. The creation of reserves of public works, on the other hand, might run into greater difficulties. In general it is not easy to see how any control whatsoever can be exercised intelligently without provision somewhere in the city government for long-range planning and budgeting. Aside from these considerations, there will always be continuing obstacles to perfect control. Financial features of municipal public works operations, such as debt and tax limits, have already been mentioned and will be discussed at greater length later. In connection with a financial program, the Lehman Committee on the finances of New York City reported that "if it is possible, it is desirable that a city should prepare a financial program covering five or ten

years. Such a program should set forth the expenditures that would be necessary year by year by reason of the normal growth of the city's activities. The program would disclose the expenditures for permanent improvements which are contemplated and would indicate the method by which all expenditures would be financed. Few cities have ever prepared such a comprehensive program. The difficulties involved are great. . . . Such planning enables a city to decide more intelligently upon the projects that it will undertake than when the sifting of capital demands is left to a series of special sessions of appropriating authorities. A comprehensive plan will undoubtedly insure greater economies. It will keep steadily before the city officials the fact that a particular program will require at given dates tax levies which are known in advance."<sup>29</sup> But New York City, like many other American municipalities, is still far from depending on such far-sighted programs.

In the planning and execution of large-scale projects, more and longer steps are required than is normally realized.<sup>30</sup> Assuming that all legal obstacles are overcome, the building of a comprehensive water supply system involves procedure that cannot be avoided. Thus the New York City Delaware River Plan involves, first, the acquisition of the necessary land at the cost usually of lengthy condemnation proceedings. The engineers must then make studies of the locations of the dams, shafts, and tunnels. Contracts awarded to contractors, of whom there will be many, must be drawn up with the most detailed specifications. Each contract runs into hundreds of pages, and work on them cannot begin until the territory of the plan is adequately mapped out and the test borings are completed. The construction on this project will probably be on a three eight-hour shift per day basis.

A more serious difficulty and one not so easily overcome, encountered in this project, will be the removal of legal obstacles. The plan involves the use of the flood waters of the tributaries of the Delaware River. The Delaware River flows through Pennsylvania, New Jersey, and New York. Up to the present time, Pennsylvania and New Jersey have refused their consent to the New

<sup>29</sup> *Lehman*, pp. 74-75.

<sup>30</sup> For a summary of steps required in the development of the Catskill Mountain Water Supply, see brief chronology of this plan, Appendix E.

York plan. Litigation, still not adjusted, has passed through these stages:

1. The New York State Water Power and Control Commission approved the plan on May 5, 1929.

2. On May 20, 1929, New Jersey filed a bill of complaint against the State of New York and the City of New York, asking the Supreme Court of the United States for an injunction perpetually restraining the defendants from drawing any water from the Delaware River and its tributaries.

3. To this, the City filed an answer on October 7, 1929. On January 20, 1930, the State of New Jersey withdrew its motion for hearing on complaint and answer and withdrew its objections to the appointment of a master to take testimony.

With regard to the plan for grade-crossing elimination and river-front improvement on the west side of New York, a project estimated to cost \$140,000,000, a contract for the undertaking was executed between New York City and the New York Central Railroad on July 5, 1929. Work here was briefly delayed because the railroad company required permission of the Interstate Commerce Commission to relocate its tracks. This permission was granted by the Commission on December 11, 1929, and the final obstacle to the start of work was removed. It is said that, in this case, the Commission acted with unusual rapidity<sup>31</sup> because the Mayor of the City had asked the Commission for a prompt decision.

<sup>31</sup> *New York Times*, December 12, 1929.