635

ANNUAL REPORT

OF THE

PUBLIC WORKS DEPARTMENT

FOR THE YEAR 1932

[Document 24—1933]

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[Document 24 — 1933.]

ANNUAL REPORT

OF THE

PUBLIC WORKS DEPARTMENT

FOR THE

YEAR ENDING DECEMBER 31, 1932.

Boston, January 2, 1933.

Hon. James M. Curley,
Mayor of Boston.

Dear Sir,— In compliance with the Revised Ordinances, the annual report of the operations and expenses of the Public Works Department for the year ending December 31, 1932, is respectfully submitted. The Public Works Department, created by Ordinances 1910, chapter 9, now chapter 27 of the Revised Ordinances of 1925, was formed by consolidating the Engineering, Water and Street Departments.

Organization.

The department is composed of six main divisions, viz.:

Central Office.— The Central Office is composed of the accounting force of the entire department under the charge of the chief clerk.

Bridge and Ferry Division.— This division, under a division engineer, has the charge and care of all bridges used as highways which are in whole, or in part, under the control of the city; and the care and management of the ferries owned by the city, including boats, slips, drops and buildings.

NOTE.— The Boston and Cambridge Division, so called, is not, strictly speaking, a division of the Public Works Department, as this work is in charge of a commission of two, one member appointed by the Mayor of Boston and the other by the Mayor of Cambridge, under the provisions of chapter 412 of the Acts of 1904; but because of the fact that the present Commissioner of Public Works is the Boston member of this commission and also because one half of the expense of the commission is defrayed by the Bridge Service, it is in this report treated as a division of this department.

Highway Division.— This division under a division engineer, has charge of the construction, reconstruction and maintenance of roadways and sidewalks, and the care of lamps and lighting of streets, parks and alleys.

Sanitary Division.— This division, under a division engineer, has charge of the collection and removal of ashes, garbage and refuse, street cleaning and the oiling and flushing of streets.

Sewer Division.— This division, under a division engineer, has charge of the construction and maintenance of sewers, catch-basins and waterways.

Water Division.— This division, under a division engineer, has the care of water pipes, installation of meters, water service, laying and relaying of water mains and the high pressure fire service.

GENERAL.

The end of this year closes the three-year program of extensive street construction inaugurated by legislative grants of loans outside the debt limit and conditional upon amounts raised within the debt limit and through the tax levy.

Accompanying this large program of street construction was a comparatively large expenditure for sewerage works.

For the first time in many years we have completed all the contracts awarded for street work, with the exception of two small streets which will go over into next year.

For some time past negotiations have been carried on for a reduction in lighting rates, both for streets and for domestic services, and it is expected shortly that both public utilities will voluntarily grant decreases in

their rates. The Gas Company has reduced street lighting rates by approximately 5 per cent beginning January 1, 1933.

HIGHWAY DIVISION.

During the past three years there has been authorized in loans outside the debt limit for the reconstruction and repair of streets a total of $2,975,000, $1,000,000 inside the debt limit, and $1,000,000 from the tax levy. In addition, $225,000 has been appropriated from the tax levy for the replacement of dirt sidewalks with granolithic, which makes a grand total of $5,200,000.

For new streets there has been appropriated $2,500,000 outside the debt limit; $1,250,000 inside the debt limit. and $250,000 from the tax levy, making a total of $4,000,000 for the construction of new streets.

There is no doubt but what the expenditure of this large amount of money for construction has relieved the unemployment situation in this city, and it is strange that the policy of spending large amounts on public works, which appeared to meet the approval of the Legislature in 1930, has changed so that at present it is difficult to convince the very same public officials that this policy was right, and that a penurious retrenchment should not supersede it.

The cost of contract work during the last two years has been comparatively so low as to justify a continued expenditure for necessary street construction. We know we are getting street work done now for one half the cost in 1918 and at a great reduction from that of recent years.

During the past three years we have reconstructed so many of the main arteries that it is the exception now to find a poor surface on these streets to drive or walk over.

Until the expenditures for public welfare are greatly reduced, we must depend upon loans inside the debt limit to continue street reconstruction, as it is not likely that the Legislature will approve further loans outside the debt limit.

During the past three years we have expended for the reconstruction of old streets and for granolithic sidewalks a total of approximately $5,000,000.

For 250 new streets — practically all residential — and for the four "specials" for Morton street, Centre street, Charles and Cambridge streets, and Summer and

L streets, we have expended a total of $3,164,000 for the Street Laying-Out Department.

We have inaugurated the policy of replacing defective brick sidewalks in the older parts of the city with granolithic. Included in this work was every brick sidewalk in the North and West Ends, which greatly reduced the large amount previously paid for personal injuries. The total length of replacements in three years is approximately thirty-three miles.

The total yardage of granite block and bituminous pavements laid in three years is approximately 2,100,000 square yards and of granolithic sidewalks 688,000 square yards.

Bridge and Ferry Divisions.

The widening of Arlington street required the construction of a new bridge at Arlington square, the contract for which was awarded and finished this year.

Asphalt plank, which now can be bought for a very low price, has been substituted for spruce on many bridge roadways with good results.

Plans have been prepared for major repairs on several bridges to be done in 1933.

The dangerous condition of Chelsea North Bridge fixed spans has caused the introduction of bills into the Legislature the past two years without any action. Another bill will be introduced this year and it is hoped with better results.

It is expected that the East Boston Teaming Tunnel will be open for traffic late this year, at which time one of the East Boston ferries will be withdrawn from service. The receipts from vehicles and passengers at the North Ferry this year will not exceed $10,000, and if it were discontinued better service could be extended at the South Ferry. By closing the North Ferry on April 1 next a saving of over $50,000 can be effected for the balance of the year, and we see no reason for a justifiable protest by the people of East Boston, considering the present financial condition of the city.

Sewer Division.

During the past three years we have spent for sewerage works a total of $3,750,000, provided as follows: $3,200,000 inside the debt limit; $500,000 outside the debt limit, and $50,000 from the tax levy. A large part of this was expended for surface drainage for our extensive street construction.

A second 40,000,000-gallon electric-driven centrifugal pump is being erected at the Calf Pasture pumping station, and it is advisable to replace the existing uneconomical No. 1 and No. 2 pumps by larger electric units. This station will then operate normally with electric power and the present No. 5 steam unit will be used only for emergencies.

We continued our policy of not refusing any reasonable request for sanitary sewers, and we have made considerable progress towards providing sewers for the Germantown district.

The customary loan of $1,000,000 inside the debt limit for sewerage works should be provided early next year.

WATER DIVISION.

This division has been active in laying and relaying street mains for our construction program, in continuing the policy of relaying old small-size laterals with larger pipes, and replacing domestic hydrants with the new type. The disappointing number of new services required this year (about one fourth the number in 1931) is an index of the small number of new buildings constructed.

The scheme of reinforcing the water pressure in parts of Roxbury and Dorchester, by laying a new main connecting with the Metropolitan District Commission's high service supply at Prince street and extending down the Arborway, along Forest Hills street and along Glen road, through Franklin Park and thence to Geneva avenue and Columbia road, and connecting with our domestic system, has been considered inadvisable until such time as the Metropolitan District Commission agrees to lay a second main from Prince street along the Arborway and allow us to connect with this main at Forest Hills street. This will eliminate the necessity of having three large mains in the Arborway, a duplication which is indefensible. It is thought that we may get the commission to cooperate with the city and save a substantial amount in our construction.

SANITARY DIVISION.

A new ten-year garbage and refuse disposal contract went into effect on July 1, 1933. The contractor and the method of disposal are identical with the previous ten years.

We must look forward very soon to providing incineration in at least two of the contract districts, as the dumping facilities within a comparatively short haul are disappearing.

COOPERATION WITH THE WELFARE DEPARTMENT.

Able-bodied men receiving welfare aid work from one to four days in our activities and, necessarily, require extra tools and supervision. The net gain from their services is the reduction in permanent labor pay rolls by not replacing those retired or otherwise leaving the service. The maximum number of men working in this department at one time was 4,000. The broad gain is the maintenance of a good morale through these men thinking they are rendering an equivalent for the welfare aid.

APPROPRIATIONS.

The money assigned for the maintenance work of the Public Works Department during the year 1932 was derived from the income of the city raised by taxation. In December, 1931, the department estimates were submitted to the Mayor, in segregated form, who made such allowance for each item in the budget as he considered necessary and submitted them to the City Council. The total maintenance appropriations as passed by the City Council and approved by the Mayor are shown below.

Central Office	$87,200 00
Bridge Service	447,899 84
Ferry Service	532,739 00
Lighting Service	1,012,728 00
Paving Service	1,429,452 64
Sanitary Service	3,216,443 72
Sewer Service	660,589 00
Water Service	1,637,852 17
Total	$9,024,904 37

The expenditures under the several appropriations for the different services for the year 1932 were as follows:

DIVISIONS AND SERVICES.	Current Expenses.	Special Appropriations.	Total Expenditures.	Balance December 31, 1932.
Central Office	$85,938 64	.....	$85,938 64	
Bridge Service	431,746 39	$100,466 78	532,213 17	$57,387 07
Ferry Service	522,866 29	10,413 26	533,279 55	59,599 94
Lighting Service	1,024,810 12	.....	1,024,810 12	
Paving Service	1,384,024 29	[3] 2,082,701 46	3,466,725 75	[1] 358,959 63
Sanitary Service	3,095,424 80	.....	3,095,424 80	
Sewer Service	601,781 01	1,080,111 11	1,681,892 12	[2] 385,049 09
Water Service	1,588,803 85	91,363 62	1,680,167 47	58,413 16
Totals	$8,735,395 39	$3,365,056 23	$12,100,451 62	$919,408 89

[1] $295,000 authorized, but not issued.
[2] $200,000 authorized, but not issued.
[3] Includes $39,266.49 work done by Park Department on Centre street.

Yours respectfully,

J. A. ROURKE,
Commissioner of Public Works.

Cost of Maintenance of the Public Works Department Since 1923.

Division and Services.	1923-24.	1924-25.	1925. (11 months.)	1926.	1927.	1928.	1929.	1930.	1931.	1932.
Central Office	$84,717 60	$86,511 11	$81,432 27	$89,009 05	$88,214 06	$87,166 21	$89,413 93	$89,937 12	$86,174 74	$85,938 64
Bridge Service	387,220 23	426,330 81	396,596 57	445,564 07	452,916 60	451,024 62	455,411 38	443,173 33	450,235 11	424,195 05
Boston and Cambridge Bridges	30,832 74	31,740 49	19,309 12	18,983 08	16,496 35	15,584 52	14,893 33	10,193 85	10,238 78	7,551 34
Ferry Service	498,684 78	523,527 46	472,240 69	516,316 65	552,328 81	558,335 56	554,744 35	548,567 65	560,744 34	522,866 29
Lighting Service	747,191 63	830,736 90	820,768 34	927,329 94	953,642 82	977,195 76	1,010,513 01	1,018,777 86	998,042 63	1,024,810 12
Paving Service	1,140,959 74	1,208,503 43	1,230,788 13	2,252,030 79	1,396,279 48	1,567,712 85	1,511,609 52	1,568,071 57	1,372,518 26	1,301,479 46
Removal of Snow	364,713 64	349,375 57	75,494 95	1,234,123 87	786,521 98	313,692 83	641,255 20	230,214 07	† 254,847 76	152,084 55
Sanitary Service	1,895,984 45	*2,073,913 32	1,877,228 67	2,050,603 65	2,089,907 75	2,087,116 27	2,177,678 60	2,207,807 64	2,128,811 57	2,287,465 40
Sewer Service	605,796 63	635,928 74	592,155 15	688,876 44	699,708 79	688,722 54	716,638 53	693,107 93	654.430 64	601,781 01
Street Cleaning Service	607,583 55	592,615 85	719,296 18	696,834 10	740,599 35	790,641 45	775,287 28	803,516 15	743,140 28	707,858 56
Street Watering and Oiling Service	108,842 33	79,476 90	53,420 88	51,458 88	49,375 06	41,700 49	46,366 66	59,753 80	38,211 61	30,561 12
Water Service	1,229,573 73	1,608,320 10	1,309,163 72	1,511,407 58	1,483,018 23	1,598,068 76	1,585,134 62	1,753,218 23	1,679,667 56	1,588,803 85
Totals	$7,702,101 05	$8,447,000 68	$7,657,894 67	$9,382,538 10	$9,309,009 28	$9,176,962 86	$9,578,946 41	$9,426,339 20	$8,977,063 28	$8,735,395 39

* Includes $142,724.96 paid by Street Cleaning and Oiling Service.
† Does not include $122,723.84 paid for snow removal from Special Appropriation.

REVENUES, 1932.

On Account of the Public Works Department, as Per Auditor's Statement.

Bridge Service:			
Maintenance of Chelsea bridges		$10,257 32	
Northern Avenue Bridge, repairs		489 93	
Meridian Street Bridge		9,628 70	
Clerical services		83 34	
Rent		200 00	
		$20,659 29	
Charlestown Bridge:			
Rents		1,645 00	
Morton Street Bridge:			
Received from New York, New Haven & Hartford Railroad for part cost of construction		38,500 00	
			$60,804 29
Ferry Service:			
Tolls		$74,058 95	
Rent		579 50	
Commission on telephones		118 39	
Cleaning telephone booths		48 00	
			74,804 84
Lighting Service:			
Damage to posts			374 00
Paving Service:			
From assessments on abutters for cost of laying sidewalks in front of their premises, including material for the same		$59,426 61	
Permits		12,108 48	
Sale of material		2,184 86	
Labor and materials, chapter 27, section 9, Revised Ordinances, 1925		33 00	
Labor and materials furnished, etc.		76 93	
Use of rollers		505 93	
Rent of signs		25 00	
Repairing signs		88 43	
Refund of gasolene tax		148 65	
Overpayment on bill		23 13	
Refund automobile registration		1 50	
			74,622 52
Reconstruction of Streets:			
Reimbursement on contract			173 24
Sanitary Service:			
Collection of commercial waste		$33,974 96	
Sale of manure		1,912 10	
Labor and material		1 99	
Removal of dirt		1,373 75	
Oiling streets		167 51	
Cleaning dumps		705 00	
			38,135 31
Sewer Service:			
Pumping sewage, amount received from Commonwealth,	$11,998 37		
Entrance fees	2,365 18		
Carried forward	$14,363 55		$248,914 20

Brought forward	$14,363 55		$248,914 20
Sewer Service:			
Labor and materials furnished,	703 23		
Sale of junk	465 00		
Sale of coal	817 15		
		$16,348 93	
Sewerage Works:			
Assessment under chapter 450, Acts of 1899	$59,098 93		
Interest on ditto	16,573 09		
Services of Inspector	212 65		
Rent	260 00		
		76,144 67	
			92,493 60
Total			$341,407 80
Water Service:			
Water rates due:			
For the year 1932 and prior		$4,485,991 57	
Service pipes for new water takers, extending, repairing, etc.		49,836 43	
Labor and materials		12,342 25	
Elevator and fire pipe connections		13,405 81	
Fees on overdue rates		14,047 72	
Shutting off and letting on water		566 00	
Interest on deposits		237 90	
Testing meters		347 63	
Relocating hydrants		682 35	
Damage to hydrants		424 25	
Board of horse		547 50	
Abandoning main pipe		929 43	
Sale of property		235 40	
Refund on bonds		50 00	
Services of flagman		43 56	
Use of derrick		14 00	
Damage to automobile		82 18	
Vending machines		3 54	
Total			4,579,787 52
Grand total			$4,921,195 32

Area of Pavements.

Area in Square Yards and Character of Pavements on Accepted Streets January 1, 1933.

District.	Sheet Asphalt.	Asphalt Concrete.	Granite Block.	Wood Block.	Plank on Bridges.	Brick.	Concrete.	Macadam.	Gravel.	Not Graded.	Totals.
Year 1931 report	2,096,947	2,273,220	2,445,220	113,751	19,711	24,413	152,387	4,930,509	401,890	111,775	12,569,823
Per cent	16.68	18.09	19.45	0.91	0.16	0.19	1.21	39.22	3.20	0.89	100.00
January 1, 1933.											
City Proper	615,094	491,572	766,864	46,214	4,058	10,401	7,552	150,286	1,026	.....	2,093,067
Charlestown	10,218	23,515	247,769	2,011	1,999	.....	18,751	143,888	.....	.....	448,151
East Boston	76,690	67,349	134,775	187	854	771	.....	422,509	2,520	865	706,520
South Boston	122,257	76,471	379,675	10,420	4,797	3,004	3,642	335,671	6,503	34,550	976,990
Roxbury	433,166	252,924	383,018	4,640	1,022	3,864	15,379	589,776	17,154	862	1,701,805
West Roxbury	318,585	540,023	173,386	429	1,447	.....	33,295	1,076,117	42,457	19,042	2,204,781
Dorchester	486,282	531,432	229,435	6,073	1,765	5,506	31,704	1,397,788	51,798	3,257	2,745,040
Brighton	248,856	385,225	76,852	4,080	1,231	.....	41,425	399,302	37,072	3,611	1,197,654
Hyde Park	5,622	92,812	12,572	1,692	747	.....	.....	326,472	187,926	7,919	635,762
Totals	* 2,316,770	† 2,461,323	‡2,404,346	75,746	17,920	23,546	§151,748	‖ 4,841,809	346,456	70,106	12,709,770
Per cent	18.23	19.36	18.92	0.60	0.14	0.19	1.19	38.09	2.73	0.55	100.00

Note.— In the above table the city is subdivided substantially on the boundary lines between the districts as they existed when annexed to Boston. Territory annexed from Brookline is included in city proper.

* Of this amount 2,096 square yards is Biturock, and 1,323 square yards is Kyrock, and 470 square yards is Unionite.

† Of this amount 667 square yards is Amiesite; 170,279 square yards is asphalt concrete; 2,043,711 square yards is bitulithic; 959 square yards is Filbertine; 5,825 square yards is Simasco; 232,356 square yards is Topeka; 2,929 square yards is Carey Elastic asphalt plank; 3,132 square yards is Flintkote asphalt plank; 1,465 square yards is Johns-Manville asphalt plank.

‡ Of this amount 221 square yards is cobble, and 1,734,126 square yards is granite block paving on concrete base.

§ Of this amount 924 square yards is Blome Granitoid concrete blocked pavement.

‖ Of this amount 2,612,302 square yards is bituminous macadam.

33,644 square yards public alleys included in this table.

330,169 square yards public streets in charge of Park Department included in this table.

88,507 square yards public streets in charge of Commonwealth of Massachusetts included in this table.

In addition to this table there are 8,115 square yards of accepted footways.

Length of Pavements.

Length in Miles and Character of Pavements on Accepted Streets January 1, 1933.

DISTRICT.	Sheet Asphalt.	Asphalt Concrete.	Granite Block.	Wood Block.	Plank on Bridges.	Brick.	Concrete.	Macadam.	Gravel.	Not Graded	Totals.
Year 1931 report	111.74	111.69	92.15	5.13	0.87	1.15	9.01	300.68	25.61	2.06	660.05
Per cent	16.93	16.92	13.96	0.78	0.13	0.17	1.37	45.55	3.88	0.31	100.00
January 1, 1933.											
City Proper	31.34	20.92	31.83	2.07	0.15	0.44	1.00	9.24	0.03	.....	97.02
Charlestown	0.69	1.41	10.46	0.08	0.07	.....	0.78	9.94	.....	.....	23.43
East Boston	3.54	3.04	5.92	0.01	0.06	0.04	.....	21.10	0.13	0.04	33.88
South Boston	6.81	3.41	15.27	0.61	0.19	0.12	0.12	18.16	0.37	1.30	46.36
Roxbury	24.04	12.32	14.68	0.16	0.14	0.19	0.72	39.94	1.36	0.05	93.50
West Roxbury	18.61	27.54	3.64	0.02	0.07	.....	2.32	67.83	2.60	0.42	123.05
Dorchester	25.54	27.39	8.27	0.25	0.09	0.27	1.89	86.37	3.30	0.05	153.42
Brighton	10.88	19.03	0.65	0.11	0.08	.....	2.23	23.41	2.50	.....	58.89
Hyde Park	0.35	4.22	0.05	0.10	0.05	.....	.....	18.97	12.28	0.24	36.26
Totals	*121.80	†119.28	‡90.77	3.41	0.80	1.06	§9.06	‖294.96	22.57	2.10	665.81
Per cent	18.29	17.92	13.63	0.51	0.12	0.16	1.36	44.30	3.39	0.32	100.00

NOTE.— In the above table the city is subdivided substantially on the boundary lines between the districts as they existed when annexed to Boston. Territory annexed from Brookline is included in city proper.

* Of this amount 0.16 mile is Biturock; 0.08 mile is Kyrock; 0.02 mile is Unionite.

† Of this amount 0.02 mile is Amiesite; 8.24 miles is asphalt concrete; 98.19 miles is bitulithic; 0.06 mile is Filbertine; 0.26 mile is Simasco; 12.14 miles is Topeka; 0.15 mile is Carey Elastite asphalt plank; 0.16 mile is Flintkote asphalt plank; 0.06 mile is Johns-Manville asphalt plank.

‡ Of this amount 0.02 mile is cobble, and 56.44 miles is granite block paving on concrete base.

§ Of this amount 0.06 mile is Blome Granitoid concrete blocked pavement.

‖ Of this amount 151.05 miles is bituminous macadam.

6.41 miles public alleys included in this table.

7.44 miles public streets in charge of Park Department included in this table.

3.09 miles public streets in charge of Commonwealth of Massachusetts included in this table.

In addition to this table there are 1.64 miles of accepted footways.

The records of the department show that there are now 2,929 persons eligible for employment in the several divisions and of that number 2,879 were upon the January, 1933, pay rolls.

Grade and Number of Employees.

TITLE.	SERVICES.									
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Lighting.	Water.	Total.
Commissioner	1	....	....	....	....	....	....	....	....	1
Division engineers	....	1	1	1	....	....	1	....	1	5
Engineers in charge	....	1	....	....	....	....	....	....	1	2
Chief clerk	1	....	....	....	....	....	....	....	....	1
Clerks	39	26	8	2	2	1	2	1	50	131
Assistant engineers (civil)	....	14	29	1	....	....	11	....	5	60
Draughtsmen	....	1	9	....	....	....	2	....	2	14
Instrumentmen	....	15	16	....	....	....	4	....	7	42
Rodmen	....	7	8	....	....	....	2	....	....	17
Inspectors	....	37	46	51	30	....	3	1	27	195
Foremen	....	11	4	12	13	....	1	....	13	54
Subforemen	....	17	....	....	....	....	3	....	1	21
Address printers	....	....	....	....	....	....	....	....	3	3
Blacksmiths and assistants	....	7	2	17	....	....	....	....	5	31
Blueprinters	2	....	3	....	....	....	....	....	....	5
Chauffeurs-teamsters	1	47	19	83	34	....	4	....	12	200
Carpenters and assistants	....	15	3	6	....	3	16	....	6	49
Chief inspectors	....	1	1	....	....	....	....	....	1	3
Cement testers and assistants	3	....	....	....	....	....	....	....	....	3
Chemists and assistants	....	2	....	....	....	....	....	....	....	2
Constables	....	1	1	8	....	....	....	....	18	28
Cashier	....	....	....	....	....	1	....	....	....	1
Drawtenders and assistants	....	....	....	....	....	....	135	....	....	135
Deckhands	....	....	....	....	....	20	....	....	....	20
Engineers (steam)	....	11	5	....	....	11	....	....	....	27
Electricians	....	....	3	....	....	1	1	....	....	5
Feeders	....	1	....	2	....	....	....	....	....	3
Firemen	....	7	8	....	....	26	....	....	....	41
Carried forward	47	222	166	183	79	63	185	2	152	1,099

Grade and Number of Employees.— Continued.

TITLE.	SERVICES.									
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Lighting.	Water.	Total.
Brought forward	47	222	166	183	79	63	185	2	152	1,099
Gatemen	....	....	4	....	....	16	....	....	....	20
General foremen	....	....	1	....	....	....	....	....	1	2
Harnessmakers and assistants	....	....	....	6	....	....	....	....	....	6
Head chauffeurs	....	3	....	....	1	....	....	....	....	4
Horseshoers	....	....	....	8	....	....	....	....	....	8
Janitor	....	....	....	....	....	1	....	....	....	1
Matrons	....	....	....	....	....	5	....	....	....	5
Joiners	....	....	....	....	....	5	....	....	....	5
Laborers	....	255	97	....	120	10	6	....	143	631
Lamplighter	....	....	....	....	....	1	....	....	....	1
Machinist and assistants	....	2	4	....	....	9	1	....	20	36
Meter testers	....	....	....	....	....	....	....	....	8	8
Meter readers	....	....	....	....	....	....	....	....	30	30
Masons (stone and brick)	....	....	9	1	....	....	....	....	2	12
Medical inspectors	....	1	....	1	....	....	....	....	....	2
Oilers, filth hoisters	....	....	12	....	....	13	....	....	....	25
Pipe fitters and repairers	....	....	....	....	....	2	....	....	16	18
Pavers	....	53	....	....	....	....	....	....	3	56
Plumbers	....	....	....	....	....	....	....	....	20	20
Painters	....	6	1	11	....	3	3	....	....	24
Captains	....	....	....	....	....	11	....	....	....	11
Quartermasters	....	....	....	....	....	9	....	....	....	9
Repairers	....	26	1	....	1	....	....	....	110	138
Roofer	....	....	....	....	....	1	....	....	....	1
Rammers	....	3	....	....	....	....	....	....	....	3
Rigger	....	....	....	....	....	1	....	....	....	1
Sealers	....	....	....	....	....	....	....	....	3	3
Sewer flushers	....	....	31	....	....	....	....	....	....	31
Supervisors and deputy	....	2	....	1	....	1	1	....	....	5
Stenographers	....	1	2	....	....	....	....	....	....	3
Stonecutters	....	10	2	....	....	....	....	....	....	12
Superintendents and deputy	....	2	1	....	....	....	....	....	2	5
Carried forward	47	586	331	211	201	151	196	2	510	2,235

Grade and Number of Employees.—Concluded.

TITLE.	SERVICES.									
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Lighting.	Water.	Total.
Brought forward	47	586	331	211	201	151	196	2	510	2,235
Stockkeeper	....	....	....	1	....	....	....	....	....	1
Stablemen	....	13	....	13	23	....	1	....	1	51
Teamsters and helpers	....	80	....	341	141	....	....	....	12	574
Telephone operators	....	....	....	....	1	....	....	....	1	2
Tollmen	....	....	....	....	....	13	....	....	....	13
Chief veterinarian	....	1	....	....	....	....	....	....	....	1
Watchmen	....	1	....	9	5	....	2	....	6	23
Wharfingers	....	....	....	4	....	....	....	....	....	4
Wharfmen	....	....	....	2	....	....	....	....	....	2
Wheelwrights and assistants	....	....	....	7	....	....	....	....	....	7
Yardmen	....	5	1	2	1	....	....	....	7	16
Totals	47	686	332	590	372	164	199	2	537	2,929

Number of Employees Actually Employed January 1, 1932, and January 1, 1933.

	Central Office.	Bridge.	Ferry.	Lighting.	Paving.	Sanitary.	Sewer.	Street Cleaning and Watering.	Water.	Total.
January 1, 1932	38	197	177	2	719	600	345	384	545	3,007
January 1, 1933	38	198	161	2	672	576	325	376	531	2,879
Total Eligible Force.										
January 1, 1932	46	202	186	2	722	618	349	387	551	3,063
January 1, 1933	47	199	164	2	686	590	332	372	537	2,929

Appointments, Transfers, Resignations, Retirements, Deaths, etc., of Employees.

Died.	Retired.	Transferred to Other Departments.	Transferred to Other Services.	Discharged.	Resigned.	January 1, 1932.	SERVICES. 1932–1933.	January 1, 1933.	Transferred from Other Services.	Transferred from Other Departments.	Reinstated.	Appointed.
....	....	.....	1	....	....	46	Central Office	*47	1	.....	....	1
5	3	.....	....	....	2	202	Bridge	199	2	.....	....	5
7	11	.....	1	....	4	186	Ferry	164	1	.....	....	....
....	....	.....	....	....	....	2	Lighting	2	....	.....	....	....
13	29	.....	1	....	2	722	Paving	686	3	.....	2	4
12	11	1	9	....	3	618	Sanitary	590	6	1	....	1
6	10	1	6	....	....	387	Street Cleaning	372	6	1	....	1
10	10	1	2	....	....	349	Sewer	332	....	2	....	4
7	8	1	1	1	3	551	Water	537	2	1	....	4
60	82	4	21	1	14	3,063	Totals	2,929	21	5	2	20

*Includes eight Central Office employees who are paid on Water Service pay roll.

PART II.

APPENDICES.

APPENDIX A.

REPORT OF THE DIVISION ENGINEER OF THE BRIDGE AND FERRY DIVISION.

BOSTON, January 2, 1933.

Mr. J. A. ROURKE,
Commissioner of Public Works.

DEAR SIR,— I respectfully submit the following report of the income, expenditures of the Bridge and Ferry Division for the year ending December 31, 1932. The expenditures of the division in the regular maintenance appropriations of the department were $954,612.68. Under a number of special appropriations $110,880.04 was expended, making the total expenditure for the year $1,065,492.72. This does not include certain expenditures for construction work for other departments, which work was supervised by the engineers of this division.

Owing to a necessary reduction in all expenditures, the Bridge Service confined a considerable part of its activities to maintenance work and preparation of studies for major projects which must arise in the near future. However, three new projects were completed, namely, the rebuilding of Arlington Street Bridge and the Gainsborough Street Footbridge and the building of a footway at Greenfield road, Dorchester.

The general condition of the fixed spans of Chelsea Bridge North, has become critical, in that only two reasonable alternatives remain to deal with the problem, either a new structure, as previously reported, should be built, or the existing bridge closed to deck traffic, a third alternative, that of repairing the present bridge is untenable, since from the foundation piles to the deck pavement, deterioration has advanced to such a degree that all new members would be required.

Albany Street Bridge, Over Boston & Albany Railroad Freight Tracks.

The floor beam hangers, one strut and some miscellaneous steel under the deck of the bridge became

corroded to such a degree that renewals and repairs were necessary. After receiving three informal bids to make required repairs, a work order was issued to the Boston Bridge Works, Cambridge, Mass. Work was carried on in the field under direct supervision of this division, with the approval of the Boston & Albany Railroad Company, since the railroad company assumed one half of the expense of repairs. Work was completed on September 30, 1912, at a cost of $525.25.

Arlington Street Bridge, Over Boston & Albany Railroad.

On May 11, 1932, the Mayor approved a contract with Coleman Brothers, Inc., for rebuilding this structure, including the westerly abutment. The design is similar to the adjacent bridge; three longitudinal girders carry the transverse floor beams. The whole deck system is encased in concrete and the entire area of the underside of the deck is covered with iron protection plates, three quarters of an inch thick. While this iron protection added to the cost of the contract, it was found necessary since concrete exposed to raw flue gases of locomotives rapidly disintegrates.

The work under the whole project was completed on November 12, 1932, at a cost of $46,599.76.

Berkeley Street Bridge, Over Boston & Albany Railroad.

The general condition of this bridge was such that extensive repairs became necessary; new wooden stringers, deck and paving of asphalt plank were installed by the department force. At the same time repairs were made to the steel work. The necessity for the last named repairs became apparent only after the wooden deck system was removed and the steel inspected. Further, this street crosses the railroad tracks by means of two independent spans, so that a close approximation of the total extent of repairs to the steel work could not be determined since only one span was out of commission at a time.

The repairs to the steel consisted of electrically welding reinforcing pieces to badly corroded floor beams, reinforcing weakened sections of girders and repairing defective rivets by electric welding.

Since the tracks of the Boston Elevated Railway crossing this bridge had not been used for a considerable period and further, that making provision for street

car loads would entail an appreciable expense, it was suggested to the Railway Company by the department that the rail site be abandoned.

On September 12 the department was advised by the Elevated Railway Company that they had abandoned the site and would remove their rails.

All repairs to the steel were made by the Boston Bridge Works at a total cost of $985.25.

Broadway Bridge, over Fort Point Channel.

In May the "funnels" of the rails of the Boston Elevated Railway and the headers of the ends of the draw and the fixed spans became so loose and out of line, due to impact and rot in the wood, that renewals were required. The department force accomplished all wood repairs and the Transit Department made the incidental repairs to the steel. At the same time the Boston Elevated Railway made extensive track renewals and the necessary pavement repairs between the rails of its tracks.

On June 4, 1932, all work was completed and the bridge opened for all traffic.

Chelsea Street Bridge.

On June 27, 1932, an order was issued to the Bethlehem Shipbuilding Corporation, Atlantic Works Plant, to stiffen the main pinion shaft bearing bracket and adjust pinion and circular rack pitch circles. For some time the operation of the draw was unsatisfactory and pinion and rack teeth were frequently broken. While the operation is now satisfactory, owing to the condition of the workwood extensive repairs will soon be required.

This work was completed at a cost of $195.71.

Chelsea South Bridge.

On April 19 a steamship, in tow, fouled a main girder of one of the leaves, seriously crippling the bottom flange. The Atlantic Works were ordered in the field at once and repairs were made consisting of fairing up such members as could be done properly, cutting out and electrically welding in badly damaged sections and installing an additional cover plate over the damaged area.

This work was done without putting the bridge out of commission. All work was ordered and done under the direct supervision of this division. The total cost was paid by the Towboat Company.

Dorchester Avenue Bridge, over Fort Point Channel.

On August 4 a work order was issued to the Boston Bridge Works, the lowest bidder, to strengthen the Sampson posts of the draw leaves. Each post was badly corroded at the base. This work required fitting reinforcing structurals and considerable electric welding. Works was finished on August 10, 1932, at the agreed price of $359.

Gainsborough Street Footbridge, over New York, New Haven & Hartford Railroad.

On September 22, 1932, the Mayor approved a contract with the Boston Bridge Works to repair the whole structure. The existing truss span was so badly corroded that it was removed and a new girder span installed; both towers and stairway approaches were extensively repaired by renewals, riveting and welding.

Work was completed on December 19, at a total cost of $2,881.50.

Granite Avenue Bridge.

The sheathing of the fixed spans and the traffic treads having become a menace, an order to W. H. Ellis & Son Company was issued on May 27, 1932, to remove the deck sheathing and traffic treads and lay asphalt plank on the fixed spans and wooden sheathing and traffic treads on the draw span; owing to the weight of the asphalt planking it was deemed inadvisable to use this on the draw span.

Work was completed on June 14, 1932, at a cost of $992.69.

Northern Avenue Bridge.

While making adjustments on April 28 to web members of an outside truss on account of fouling of pedestals, it was discovered that one of a pair of counters had a failure, of long standing, in the lower eye. An order was at once issued to the Atlantic Works for making necessary repairs; at the same time was included the cutting in of two new turnbuckles in adjacent counters.

On May 17 another order was issued to repair another ruptured eye of long standing. It should be noted that these failures were in such a location that they became apparent only when adjustments were attempted.

Both these emergency repairs were completed at a total cost of $619.38.

Day Labor Force.

During the year the day labor force of the division was engaged in such repairs to the structures as were possible with the limited means at their disposal. The work consisted chiefly of repairs to woodwork, including pavement and miscellaneous timber work on the various bridges, piers and drawtenders' houses, electrical work, etc. At the same time miscellaneous cleaning and painting of steel and painting of woodwork was accomplished.

Miscellaneous Repairs for Other Divisions and Departments of the City.

Highway Division — Greenfield Road Footway, Dorchester.

On March 23, 1932, the Mayor approved a contract with Baker, Matz & Co., to build a footway under the tracks of the Old Colony Division of the New York, New Haven & Hartford Railroad at Greenfield road. This structure is of conventional type, similar to others built by this division. In this instance, as in the other similar projects, the railroad company supported its tracks and assumed the responsibility and the city paid for the work and materials used; also the contractor cooperated with the Railroad Company by adopting a method of procedure.

This contract was completed on July 28, 1932, at a cost of $10,057.99.

Sanitary Division — Refuse Stations.

A contract with A. Orlando, Inc., to make general repairs to the Victory Road, Albany Street and Fort Hill Wharf garbage stations was approved on June 26, 1932. This contract covered general work only, without major replacements to sheathing, decking, stringers, floor beams, caps and piles. Work under this contract was completed on October 12, 1932, at a cost of $8,330.56. This sum was paid by the Sanitary Division.

A contract with A. Orlando, Inc., to make major repairs to piling along northerly end of the station at Fort Hill Wharf was approved on November 15, 1932. All of the old face piling was found to be badly rotted and unfit for further service. All old piles, with incidental bracing, capping, etc., were removed, and new members installed. Work under this contract was conducted in such manner as not to interfere with the operation of the station. Work under this contract was not completed by the end of the year.

Institutions Department — Long Island.

A contract with W. H. Ellis & Son Company to repair wharves at Long Island was approved on June 30, 1932. The work covered miscellaneous repairs to the runway at the Back Wharf and the driving of necessary piles to strengthen the outer corner of the wharf. This latter item included the new timber work, capping and bracing and the laying of a new deck over the strengthened area. At the Front Wharf the whole of the wearing surface of the pier to the wharf was renewed and miscellaneous repairs to supporting members of wharf accomplished.

Work on this contract was completed on September 30, 1932, at a cost of $7,559.68. This sum was paid by the Institutions Department.

FERRY DIVISION.

The following ferryboats are in commission:

Name.	When Built.	Length.	Gross Tons
John H. Sullivan	1912	172 ft. 3 in.	527
Lieutenant Flaherty	1921	174 "	727
Ralph J. Palumbo	1921	174 "	755
Charles C. Donoghue	1926	174 " 4 in.	756.77
Daniel A. MacCormack	1926	174 " 4 in.	756.77
General Sumner	1930	174 " 4 in.	779

All these boats are of the propeller type and are all steel boats.

The work of this division for the year consisted entirely of maintenance work with no major repairs and no emergency work of any magnitude.

"GENERAL SUMNER."

A contract with the Richard T. Green Company for repairs incidental to inspection by the U. S. S. B. I. S. S. was approved on January 11, 1932. The work done under the contract was routine maintenance in character, outside of renewing defective piston rings of the main engines. The work was completed on January 27, 1932, at a cost of $3,780.

"DANIEL A. MACCORMACK."

A contract with the Richard T. Green Company for repairs incidental to annual inspection was approved on April 21, 1932. This work was similar to that accomplished on the "General Sumner," including the renewing of defective piston rings of the main engines. The work was completed on May 11, 1932, at a cost of $4,975.

"LIEUTENANT FLAHERTY."

A contract with the Bethlehem Shipbuilding Corporation for repairs to hull and machinery incidental to the annual inspection was approved on August 4, 1932. The work done was strictly maintenance that could not be accomplished by the division force. The work was completed on August 23, 1932, at a cost of $4,728.

"John H. Sullivan."

A contract with the Bethlehem Shipbuilding Corporation for general annual repairs was approved on October 17, 1932. In addition to routine repairs was a renewal of bounding timbers at the ends of the roadways, strengthening of deck system at landing wedges of the electrically operated ferry bridges, the installing of new fresh water tanks and the rebabbitting of defective thrust-bearing horseshoes. Work was comcompleted November 29, 1932, at a cost of $8,179.60.

At the time of inspection by the United States Inspectors, the city was required to make further repairs to certain bulkheads and sister keelsons. A contract with the Bethlehem Shipbuilding Corporation was approved on November 15, 1932, to make these required repairs. This contract was completed on December 9, 1932, at a cost of $1,314.

"Ralph J. Palumbo."

A contract with the Richard T. Green Company for repairs to hull and machinery was approved on December 8, 1932. Included with the general repairs was the repairing of the ends of the roadways and a renewing of the end oak staving. Work was completed on December 30, 1932, at a cost of $5,260.

Ferry Bridges.

Owing to excessive wear and resultant failures of wire ropes used in conjunction with the live load counterweights an improved method of suspension and equalization of the load in the various ropes was devised. To make the necessary changes in the operating apparatus a contract with the J. Edward Ogden Company was approved on January 19, 1932. At the same time the two original installations at the South Ferry were fitted with the same type of oil pans for worm gears as were installed on the later drops since the latter type proved more satisfactory. Work under this contract was completed April 16, 1932, at a cost of $4,706.

A contract with the Marine Company for repairs to down stream drop, South Ferry, East Boston, was approved on July 27, 1932. The damage to the drop consisted of crippled and broken structurals and wood work and the bending of the pair of hanger beams.

The repairs consisted of furnishing certain new structurals, straightening others, straightening hanger beams, riveting and electrically welding members and reinforcing pieces and furnishing new plank and timber which was removed to make repairs. Work was completed on August 20, 1932, at a cost of $1,895.

DEPARTMENT FORCE.

The department force was engaged in miscellaneous routine repairs to hulls, superstructures and machinery of the boats; also to headhouses and drops. Included in this work was the repairs to piping, valves, main engines and auxiliaries and such painting as was possible with the boats remaining in service.

Yours respectfully,

JOHN E. CARTY,
Division Engineer.

Tidewater Bridges.

BRIDGES.	Drawtenders' Salaries.	Mechanics' Wages.	Material.	Repair Bills.	Supplies.	Total.
Broadway	$16,200 51	$2,630 89	$274 92	$596 65	$346 91	$20,049 88
Charlestown	22,091 64	4,927 84	1,256 54	2,284 23	559 37	31,119 62
Chelsea North	18,822 26	4,245 26	1,206 77	3,527 06	1,056 79	28,858 14
Chelsea South	18,604 00	569 27	170 99	1,182 37	695 51	21,222 14
Chelsea Street	16,458 68	1,922 48	344 75	1,478 69	399 64	20,604 24
Congress Street	16,831 15	485 17	40 57	410 57	510 23	18,277 69
Dorchester Avenue	16,303 00	2,301 56	1,073 58	1,408 96	348 49	21,435 59
Dover Street	16,191 20	1,166 65	433 56	636 03	244 18	18,671 62
L Street *	16,210 42	477 50	88 36	209 36	350 82	17,336 46
Malden	16,913 06	337 29	64 95	731 86	591 50	18,638 66
Meridian Street	16,932 34	2,646 09	789 42	2,014 47	337 35	22,719 67
Northern Avenue	18,599 78	2,867 34	2,858 79	2,818 87	3,136 58	30,281 36
Summer Street	16,778 02	1,232 18	433 94	738 74	296 73	19,479 61
Warren	16,800 30	2,253 97	143 64	2,303 63	390 40	21,891 94
	$243,736 36	$28,063 49	$9,180 78	$20,341 49	$9,264 50	$310,586 62

* Now Summer Street over Reserved Channel.

SPECIAL APPROPRIATIONS.

BRIDGES, REPAIRS, ETC.

ALBANY STREET BRIDGE.		
Iron work		$904 00
BERKELEY STREET BRIDGE.		
Material, asphalt plant	$410 32	
Iron work	291 75	
		702 07
BROADWAY BRIDGE.		
W. H. Ellis & Son Company	$3,200 32	
Material	1,406 99	
Paving repairs	530 39	
Iron work	292 65	
Transit Department pay roll	552 12	
		5,982 47
CHELSEA NORTH BRIDGE.		
Paving repairs		789 84
CHELSEA STREET BRIDGE.		
Material, asphalt plank	$394 55	
Repair bills	393 08	
		787 63
DORCHESTER AVENUE BRIDGE.		
Concrete sidewalk		202 45
DOVER STREET BRIDGE.		
W. H. Ellis & Son Company		2,510 59
GAINSBOROUGH STREET BRIDGE.		
The Boston Bridge Works, Inc.	$2,449 27	
Advertising	8 00	
		2,457 27
MALDEN BRIDGE.		
Paving repairs		495 00
NEPTUNE ROAD BRIDGE.		
Material, asphalt plank		216 68
NORTHERN AVENUE BRIDGE.		
Iron work	$619 38	
License	16 13	
		635 51
Carried forward		$15,683 51

Brought forward	$15,683 51
SOUTHAMPTON STREET BRIDGE.	
Material, asphalt plank	381 52
SUMMER STREET, OVER B STRET BRIDGE.	
Paving repairs	517 55
REDFIELD ROAD BRIDGE.	
Material, asphalt plank	460 70
RUSSETT ROAD BRIDGE.	
Material, asphalt plank	169 34
WARREN BRIDGE.	
W. H. Ellis & Son Company	594 01
	$17,806 63
ALBANY STREET BRIDGE.	
Coleman Brothers, Inc.	$4,427 13
Engineering	4,663 65
	$9,090 78
ARLINGTON STREET BRIDGE.	
Coleman Brothers, Inc.	$39,609 80
Advertising	34 00
Inspection of steel	43 40
Iron work	25 00
Material, paint	99 00
Office supplies	241 58
Photographs	20 00
Engineering	5,471 69
	$45,544 47
MORTON STREET BRIDGE.	
Coleman Brothers, Inc.	$5,157 54
Architect	59 40
	$5,216 94
SHAWMUT AVENUE BRIDGE.	
Coleman Brothers, Inc.	$6,592 87
Photographs	30 00
Engineering	8,586 87
	$15,209 74
GRANITE AVENUE BRIDGE.*	
Drawtenders' salaries	$2,694 30
Material	375 09
Repair bills	992 69
Supplies	47 84
	$4,109 92

*Maintained jointly by County of Suffolk and town of Milton.

Draw Openings 1932.

	Steamers.			Sailing Vessels.			Tugs.			Barges.			All Others.			Total Number of Vessels.			Total Number of Cargoes.	Total Number of Openings.
	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total		
Openings.....	.....	.....	.....	12	2	14	210	11	221	80	4	84	51	38	89	353	55	408	41	259

Draw Openings 1932.

Bridges.	Steamers.			Sailing Vessels.			Tugs.			Barges.			All Others.			Total Number of Vessels.			Total Number of Cargoes.	Total Number of Openings.
	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.		
Broadway	2	14	16	15	2	17	616	56	672	212	28	240	195	6	201	1,040	106	1,146	266	669
Charlestown	31	42	73	34	7	41	1,061	430	1,491	359	132	491	615	436	1,051	2,100	1,047	3,147	705	1,162
Chelsea North	1,279	145	1,424	17	5	22	8,258	878	9,036	1,482	304	1,786	498	43	541	11,534	1,375	12,809	1,665	4,792
Chelsea South	58	3	61	8	2	10	2,969	118	3,087	127	11	138	1,425	102	1,527	4,587	236	4,823	1,233	1,735
Chelsea Street	85	63	148	.....	.....	.....	1,746	743	2,489	172	105	277	925	171	1,096	2,928	1,082	4,010	1,034	2,392
Congress Street	120	32	152	17	1	18	1,692	193	1,885	486	62	548	706	57	763	3,021	345	3,366	538	1,951
Dorchester Avenue	1	13	14	15	2	17	816	47	863	207	23	230	370	6	376	1,409	91	1,500	308	845
Dover Street	2	16	18	14	2	16	783	61	844	204	28	232	364	8	372	1,367	115	1,482	306	704
L Street *	24	7	31	156	4	160	412	10	422	208	13	221	785	117	902	1,585	151	1,736	138	1,392
Malden	54	38	92	8	.....	8	198	20	218	138	38	176	176	84	260	574	180	754	218	607
Meridian Street	706	382	1,088	88	7	95	4,140	1,255	5,395	885	578	1,463	2,650	370	3,020	8,469	2,592	11,061	1,512	6,347
Northern Avenue	299	163	462	38	2	40	3,165	174	3,339	500	42	542	1,393	66	1,459	5,395	447	5,842	1,138	2,816
Summer Street	124	15	139	30	2	32	1,769	151	1,920	439	49	488	485	24	509	2,847	241	3,088	628	1,745
Warren	26	48	74	19	.....	19	955	387	1,342	430	73	503	803	522	1,325	2,233	1,030	3,263	646	1,848
Totals	2,811	981	3,792	459	36	495	28,580	4,523	33,103	5,849	1,486	7,335	11,390	2,012	13,402	49,089	9,038	58,127	10,335	29,005

* Now Summer Street over Reserved Channel.

FERRY SERVICE.

FINANCIAL STATEMENT FOR THE YEAR ENDING DECEMBER 31, 1932.

Receipts for the year (net income)		* $74,797 47
Ordinary expenses (maintenance appropriation)	$522,866 29	
Interest paid on Ferry Debt	36,412 50	
Depreciation on Ferryboats	84,433 79	
Decrease in value of machinery and tools	360 17	
Decrease in value of fuel on hand	1,001 70	
	$645,074 45	
Increase in value of supplies on hand	5,933 08	
Net outgo for the year		$639,141 37
Net loss for the year		†$564,343 90

* Does not include $7.37 in hands of cashier at beginning of year.
† Does not include expenditures for special appropriation.

4. Balance Sheet.

End of Fiscal Year, December 31, 1932.

Assets.		Liabilities.	
Available Assets:		**Current Liabilities:**	
Cash in hands of tollmen at close of year	$200 00	None.	
Ferriages receivable	58 00		
Inventory of Supplies, viz.:			
Fuel	2,011 50		
Supplies for maintenance	13,265 42		
Rents receivable	1,641 87		
Total available assets	$17,176 79		
Contingent Assets:		**Contingent Liabilities:**	
City Treasurer	59,599 94	Appropriations account	$59,599 94
Fixed Assets:		**Fixed Liabilities:**	
Real estate, land and buildings[1]	2,610,100 00	Capital of the city invested in the ferries, viz.:	
Ferryboats[3]	1,034,229 63	Total expenditures of all kinds for seventy-five years, including interest on ferry debt $25,109,409 99	
Machinery, tools, etc	3,241 57	Less total receipts 8,685,369 70	
Total tangible assets	$1,724,347 93		$16,424,040 29
Deficiency or loss by operation and maintenance of the ferries for seventy-five years to date	$14,759,292 30		
	$16,483,640 23		$16,483,640 23

[1] Original purchase $276,375 00
New buildings, drops, slips, cost to 1913 607,523 64
Land, Lincoln's Wharf, cost to 1887 5,562 52
Land, Battery Wharf, cost to 1893 10,000 00
$899,461 16
New drops, both ferries, cost from 1923 to December 31, 1932 886,648 44
$1,786,109 60

[2] Assessors' figures.

[3] Total cost to date, per ferry books $2,529,820 50
Less boats sold, depreciated or destroyed 1,495,590 87
$1,034,229 63

Total Expenditures Upon Ferries Since 1858-59.

Expenditures for avenues, paving, interest, etc., previous to the purchase of the ferries by the city	$444,101 30
Purchase of the ferries, April, 1870	276,375 00
Expenditures for ferryboats since April, 1870,	2,530,009 51
Expenditures for new buildings, piers, drops, etc.	1,491,468 89
Expenditures for tools and fixtures (prior to 1910)	14,752 46
Expenditures for land for Lincoln's Wharf in 1887	5,562 52
Expenditures for land from Battery Wharf in 1893	10,000 00
Total expenditures on capital account	$4,772,269 68
Expenditures for repairs of all kinds	2,798,574 64
Expenditures for fuel	2,957,422 57
Expenditures for salary and wages	11,414,629 04
Expenditures for all other purposes	3,166,514 06
	$25,109,409 99

Total Receipts from Ferries Since 1858-59.

Receipts from rents, etc., previous to purchase of ferries	$29,588 56
Receipts from ferry tolls since purchase of ferries	8,348,370 08
Receipts from rents since purchase of ferries,	72,874 40
Receipts from sale of ferryboats	168,004 57
Receipts from all other sources, per ferry books	35,997 24
Receipts from all other sources, additional per City Auditor	30,734 85
Total receipts from all sources	$8,685,569 70
Less amount with tollmen as capital	200 00
Total receipts, Auditor's reports	$8,685,369 70

Regular Annual (ordinary) and Special Appropriations (extraordinary) of the Ferry Service for the Year Ending December 31, 1932.

Appropriations (regular) for the year ending December 31, 1932	$532,739 00
Transferred to City Treasury	9,872 71
Amount of expenditures (regular) for the year	$522,866 29

RECEIPTS AT EACH FERRY.

North Ferry.

FROM TOLLMEN.	From Foot Passengers.	From Tickets.	Totals.
Boston side	$2,316 18	$1,235 20	$3,551 38
East Boston side	2,217 81	1,370 00	3,587 81
Totals	$4,533 99	$2,605 20	$7,139 19

From tollmen		$7,139 19
From gatemen:		
10,183 foot passengers at 1 cent	$101 83	
Cash fares for teams	4,388 90	
		4,490 73
Total at North Ferry		$11,629 92

South Ferry.

FROM TOLLMEN.	From Foot Passengers.	From Tickets.	Totals.
Boston side	$6,201 44	$4,256 40	$10,457 84
East Boston side	6,034 01	3,115 60	9,149 61
Totals	$12,235 45	$7,372 00	$19,607 45

From tollmen		$19,607 45
From gatemen:		
33,241 foot passengers at 1 cent	$332 41	
Cash fares for teams	36,542 70	
		36,875 11
Total at South Ferry		$56,482 56

North and South Ferries	$68,112 48
Tickets paid for at ferry office	5,633 70
Tickets sold and paid for through City Collector's office	*304 40
Total from rates	$74,050 58
Rents for the year	179 50
Headhouse privileges	400 00
Care of public telephone booths	48 00
Commission on public telephones	119 39
Total receipts for the year	† $74,797 47

* Includes $9.60 tickets sold in 1931 and paid for in 1932. Includes $6.40 tickets sold in 1931 and paid for in 1932.

† Does not include $7.37 in hands of cashier and deposited in 1932.

TRAVEL ON THE FERRIES FROM JANUARY 1, 1932, TO DECEMBER 31, 1932, INCLUSIVE.

	North Ferry.	South Ferry.
Foot passengers at 1 cent each	463,582	1,256,786
Foot passengers by ticket	17,521	6,551
Total from foot passengers	481,103	1,263,337

	North Ferry.	South Ferry.
Hand cart, or wheelbarrow and man.....5 cents Horse and rider.....5 cents Horse and cattle, each with attendant.....5 cents One or two-horse vehicle with driver.....5 cents Motor cycle with driver.....5 cents	17,211	62,106
Trailer.....10 cents Three or four-horse vehicle with driver.....10 cents Passenger automobile with driver and one passenger.....10 cents	35,294	225,882
Passenger automobile with driver and more than one passenger.....15 cents Motor truck, six tons or less, with driver....15 cents	57,609	150,636
Motor truck over six tons, with driver.....20 cents Auto bus with driver.....20 cents	7,427	6,742
Auto bus with driver and passengers.....30 cents	263	133
	117,804	445,449

Motor Vehicle Traffic (Reports of Captains).

January 1, 1932, to December 31, 1932.

	North Ferry.	South Ferry.	Totals.
Passenger cars	54,968	318,090	373,058
Trucks	44,580	95,776	140,356
Totals	* 99,548	† 413,866	513,414

* Includes 4,030 free. † Includes 14,245 free.

Total paying foot passengers	1,744,440
Total foot passengers carried	1,744,440
Total paying teams, passenger cars and trucks	563,303
Total free teams	18,383

APPENDIX B.

REPORT OF THE DIVISION ENGINEER OF THE HIGHWAY DIVISION.

BOSTON, January 2, 1933.

MR. JOSEPH A. ROURKE,
Commissioner of Public Works.

DEAR SIR.— I submit herewith a statement of the activities, operations and expenditures of the Highway Division for the year ending December 31, 1932.

The maintenance expenditures of the division for the year were as follows:

Lighting Service	$1,024,810 12
Paving Service	1,384,024 29
Total	$2,408,834 41

The work of constructing new streets and the resurfacing and maintenance of the city streets during the year 1932 has been large in volume and compares very favorably with the great amount of work done during the year 1931.

The usual two contracts were awarded for repairing streets having an asphalt or bitulithic surface on which the maintenance guarantee had expired. The City was divided into two sections and a contract awarded in each section.

This year marks the completion of the Centre street project from the new rotary traffic circle at Centre street and the Park road known as Jamaicaway, to the intersection at Church street, West Roxbury. From Souter street to Weld street there are two roadways thirty feet each in width with granite edgestone and a centre reservation paved with artificial stone 4 feet wide; the sidewalks are 8 feet in width, making a total width of 80 feet.

The pavement is Warrenite Bitulithic laid on a 6-inch concrete base. The east side has an artificial stone sidewalk from Souter street to Louder's lane and on the west side the sidewalk is made of artificial stone from Louder's lane to Weld street.

Between Weld street and Church street there is a single roadway ranging from 54 to 58 feet in width, the pavement is sheet asphalt laid on a 6-inch concrete base. The two sidewalks are each 8 feet wide. Total width of street 70 feet.

Twenty-nine contracts have been awarded for the construction of fifty-seven streets under the special appropriation "Highways, Making of," for which was expended during the year $575,795.52.

Under the special appropriation for "Reconstruction of Streets" twenty-seven contracts were awarded for the reconstruction of one hundred and two streets for which was expended $913,888.71.

In addition to the above several contracts were awarded for the construction of about twenty-five streets in whole or in part of artificial stone sidewalks. For this work there was expended $67,475.77.

In addition to the work of construction done by contract and special appropriations the division forces were employed in the maintenance of the streets throughout the city, resurfacing and repaving macadam roadways, relaying the pavement in granite paved streets and patching old street surfaces. In the suburban districts a great deal of street and gutter cleaning has been done by the men sent to the Paving Service from the Public Welfare Department.

LIGHTING SERVICE.

The outstanding installations of new street lighting units made during the year are as follows:

Commonwealth avenue and Beacon street in connection with the Kenmore square project, thirty-eight 1,500 candle power lamps on concrete posts installed.

Centre street, Church street to Arborway, West Roxbury, fifty 1,000 candle power lamps on concrete posts installed.

Centre and South streets, Wyman street to Boynton street, West Roxbury, twenty-four magnetite arc lamps installed and all the existing pendant arcs in this area changed to boulevard posts.

Western avenue, Market street to North Harvard street, Brighton, nine 1,500 candle power and two 1,000 candle power lamps installed.

Walnut avenue, Roxbury, eight 1,500 candle power lamps installed.

Morton street, Dorchester, nine 1,500 candle power lamps installed on concrete posts.

Forest Hills street, West Roxbury, twenty 600 candle power lamps installed.

On Neponset avenue, Dorchester, all existing lamps were rearranged where necessary and seventeen dead ends installed to take care of new lighting lay-out where the street is resurfaced in 1933.

Respectfully submitted,

JOSHUA ATWOOD,
Division Engineer.

LIGHTING SERVICE.

There are in operation 22,969 arc, Mazda and gas lamps divided as follows: 3,712 arc, 9,602 Mazda, 9,438 single mantle gas lamps and 217 single mantle fire alarm gas lamps.

LAMPS INSTALLED.

Magnetite arc lamps	48
Mazda lamps	418
Single mantle gas lamps	1
	467

LAMPS DISCONTINUED.

Magnetite arc lamps	* 54
Mazda lamps	120
Single mantle gas lamps	120
	294

* 38 Magnetite arc lamps changed to 1,500 candle power series Mazda.
* 6 Magnetite arc lamps changed to 1,475 candle power multiple Mazda.
* 2 Magnetite arc lamps changed to 950 candle power multiple Mazda.

NUMBER OF LAMPS DECEMBER 31, 1932.	Lamps, Number and Size (Electric.)	Flat Rate per Year 4,000 Hours Burning.	Fixed Charge per Year for Lamps not in Service.	Running Charge for Each Hour in Excess of 4,000 per Year.
21	Twin No. 280, 3,000 candle power series, Mazda	$159 00	$50 00	$0 03
7,106	No. 80 {1,500 candle power series, arc / 1,500 candle power series, Mazda / 1,475 candle power multiple, Mazda}	89 40	36 00	0 015
185	No. 75 {1,000 candle power series, Mazda / 950 candle power multiple, Mazda}	80 00	32 00	0 013
276	No. 70 {600 candle power series, Mazda / 528 candle power multiple, Mazda}	69 00	31 00	0 01
59	No. 50 {250 candle power series, Mazda / 230 candle power multiple, Mazda}	39 00	18 00	0 006
93	No 40, 132 candle power multiple, Mazda	27 00	13 50	.0 0036
48	No. 30, 100 candle power series, Mazda	23 25	12 00	0 003
4,820	No. 20 {80 candle power series, Mazda / 66 candle power multiple, Mazda}	20 50	10 80	0 0026
	FIRE ALARM LAMPS.			
379	Twin No. 22, 40 candle power multiple, Mazda (24 hour burning)	24 00		
158	No. 21, 80 candle power series, Mazda	20 50		
169	No. 10, 60 candle power series, Mazda	18 50		
Total.....13,314.				

Lamp Service.—The lamps, poles, wires, fixtures and other apparatus, appliances and materials necessary to supply service on public streets (except posts for incandescent lamps smaller than the No. 70 lamp or lamp-posts other than the company's standard post for each respective size and type of lamp) are furnished and maintained by the company. A change in size, type or location of a lamp once installed, will be made only at the expense of the customer. The charge for a change in the location of an incandescent lamp fixture on overhead lines when the street lighting circuit is already installed on the pole to which the fixture is to be moved, will be ten dollars for each fixture so moved.

Outage Allowance.— A deduction for lamps not lighted during the hours called for by the existing street lighting schedule applying thereto will be made at the rate of 1 cent per lamp hour on all lamps smaller than the No. 70 lamp, and at the rate of 5 cents per lamp hour on all other lamps.

GAS LAMPS.

NUMBER OF LAMPS DECEMBER 31, 1932.	Type of Lamp.	Cost per Year 4,000 Hours Burning.
9,438	Street.	$24 37
217	Fire Alarm.	24 37
Total.....9,655		

GAS LIGHTING.

The city furnishes the lamp posts, the Gas Company sets the lamp-posts and provides service pipes laid from the gas mains to the top of the posts, maintains all such pipes and posts in good condition and repair, furnishes gas, lanterns, burners and all other necessary equipment, including labor for lighting and care.

The Lighting Service provides for the gas, lighting and care of fire alarm signal lamps and the Fire Department for the posts, setting and repairing of same.

An outage allowance for lamps not lighted is made at the rate of two to one, or $\frac{2}{365}$ of a year's cost for each night of outage.

Ten year contract approved May 20, 1924.

The Boston Consolidated Gas Company reduced the price of gas 16⅔ per cent dating from October 1, 1929. This explains the reduction in cost from the original contract price of $26.20 per year. (See detail below.)

Original Price.	
Lighting and care	$15 20
Gas	11 00
	$26 20
Revised price.	
Lighting and care	$15 20
Gas	9 17
	$24 37

STREET LAMP OUTAGES.

Rebates for lamps not lighted on schedule time or out before the proper time have been received on the various monthly bills as follows:

MONTH.	Arc.	Mazda.	Gas.
January	$167 29	$1 46	$7 09
February	187 22	22 01	11 05
March	176 13	5 61	6 02
April	107 04	3 00	4 57
May	53 14	3 87	2 81
June	36 61	5 15	2 49
July	36 88	51	2 02
August	69 55	3 73	4 01
September	86 26	6 51	5 02
October	111 36	13 04	9 76
November	137 41	7 40	11 24
December	132 13	15 79	7 75
Totals	$1,301 02	$88 08	$73 83

HIGHWAY DIVISION — PAVING SERVICE.

Work Done by Contract in 1932.

	Old.	New.	Total Old and New.
Edgestone set	80,428 linear feet.	122,516 linear feet.	202,944 linear feet.
Concrete base laid	43,198 square yards.	264,684 square yards.	307,882 square yards.
Granite block laid, gravel joints	6,595 " "	717 " "	7,312 " "
Recut granite block laid, grout joints		15,873 " "	15,873 " "
Granite block laid, grout joints, hip gutters		276 " "	276 " "
Granite block relaid, grout joints		7,497 " "	7,497 " "
Asphalt and binder laid (3-inch)		201,195 " "	201,195 " "
Asphalt surface laid (1 to 2-inch)		44,627 " "	44,627 " "
Bitulithic pavement laid		151,911 " "	151,911 " "
Bituminous patching contract:			
1. Full depth asphalt	14,672 square yards.	2,702 " "	17,374 " "
2. Full depth bituminous concrete	31,273 " "		31,273 " "
3. Surface work	35,171 " "		35,171 " "
4. Extra binder		28 tons.	28 tons.
5. Cement concrete base	803 square yards.		803 square yards.
Asphalt macadam		9,206 square yards.	9,206 " "
Extra binder		3,754 tons.	3,754 tons.

HIGHWAY DIVISION — PAVING SERVICE.—Concluded.

Work Done by Contract in 1932.

	Old.	New.	Total. Old and New.
Artificial stone sidewalks	965 square yards.	169,819 square yards.	170,784 square yards.
Brick sidewalks laid	1,148 " "	143 " "	1,291 " "
Crushed stone sidewalks laid	958 " "	9,894 " "	10,852 " "
Earth excavation		156,185 cubic yards.	156,185 cubic yards
Rock excavation		39,274 " "	39,274 " "
Filling furnished		24,842 " "	24,842 " "
Gravel foundation (6-inch)		4,128 square yards.	4,128 square yards
Crushed stone furnished		8,190 tons.	8,190 tons.
Concrete base removed		4,691 square yards	4,691 square yards.
Loam graded and seeded		12,213 " "	12,213 " "
Loam furnished		1,730 cubic yards	1,730 cubic yards.
Covers reset	1,941		1,941
Sign posts set or reset		215	215
Wooden fence erected		2,932 linear feet.	2,932 linear feet.
Iron fence erected		1,160 " "	1,160 " "
Chain link fence erected		1,853 " "	1,853 " "
Ground water drain		4,089 " "	4,089 " "
Dry wells constructed		10	10

Concrete walls constructed	828 cubic yards.	828 cubic yards.
Rubble walls constructed	1,218 linear feet.	1,218 linear feet
Dry walls constructed	872 cubic yards.	872 cubic yards.
Mortar rubble walls constructed	1,394 " "	1,3942 " "
Ballast furnished	1,092 " "	1,092 " "
Cap stone placed	1,198 linear feet.	1,198 linear feet.
Sap stone furnished	100 tons.	100 tons.
Concrete steps constructed	142 cubic yards.	142 cubic yards.
Concrete platforms constructed	64 square feet.	64 square feet.
Concrete curb	235 linear feet.	235 linear feet.
Concrete roadway	132 square yards.	132 square yards.
Gravel roadway	96 " "	96 " "
Driveway foundation	5,355 linear feet.	5,355 linear feet.
Walls and foundations removed	300 cubic yards.	300 cubic yards.

Work Done by Paving Service Forces During 1932.

	Old.	New.	Total.
Concrete base laid	5,643 square yards.		5,643 square yards.
Roadway, granite block, gravel joints	3,884 " "		3,884 " "
Roadway, granite block, grout joints	23,883 " "		23,883 " "
Gutter, granite block, gravel joints	8,120 " "	37 square yards.	8,157 " "
Gutter, granite block, grout joints	7,360 " "	203 " "	7,563 " "
Gutter, cobble, gravel joints	385 " "		385 " "
Flagging crosswalk, gravel joints	628 " "	27 square yards.	655 " "
Roadway, wood block, sand joints	3,110 " "		3,110 " "
Macadam surface patched	269,243 " "		269,243 " "
Asphalt blanket coat	70,418 " "		70,418 " "
Sheet asphalt surface patched	491 " "		491 " "
Sheet asphalt surface placed		392 square yards.	392 " "
Grading, no pavement laid	7,787 square yards.		7,787 " "
Brick block pavement laid	5,431 " "		5,431 " "
Concrete roadway repaired	300 " "		300 " "
Gravel or crushed stone sidewalks repaired	169,253 " "		169,253 " "
Tar sidewalks patched	7,535 " "		7,535 " "
Grading park	4,800 " "		4,800 " "
Asphalt penetration, macadam surface placed		157,626 square yards.	157,626 " "

Edgestone set	51,822 linear feet.	1,746 linear feet.	53,568 linear feet.
Fence repaired	381 " "		381 " "
Plank walk built	351 " "		351 " "
Sidewalk excavating, no sidewalk laid		195 cubic yards.	195 cubic yards.
Roadway excavating, no roadway constructed	2,067 cubic yards.		2,067 " "
Roadway excavating, roadway changed	340 " "		340 " "
Rock excavating		56 cubic yards	56 " "
New style sign posts erected		266 " "	266 " "
Sign posts painted	762 cubic yards.		762 " "

Objects of Expenditure from the Various Appropriations, Classified by Districts, from January 1, 1932, to December 31, 1932.

DISTRICTS.	Macadam Repairs.	Paved Street Repairs.	Removal of Snow.	Street Cleaning.	Edgestone and Sidewalk Repairs.	Street Work.	Schedule A, Miscellaneous.	Totals.
South Boston and Dorchester North	$11,935 60	$5,976 86	$9,419 63	$14,231 49	$13,046 11	$86,221 84	.....	$140,831 53
East Boston and Breed's Island	23,743 53	2,169 32	6,577 74	2,962 59	12,342 19	32,079 54	.....	79,874 91
Charlestown	10,221 41	1,556 81	4,727 52	2,780 81	16,290 06	39,725 20	.....	75,301 81
Brighton	28,164 94	.....	10,661 14	29,758 46	7,924 49	185,863 27	.....	262,372 30
West Roxbury	31,502 28	2,294 15	14,821 02	45,282 96	8,930 42	644,462 98	.....	747,293 81
Dorchester	15,410 20	2,620 90	10,165 72	28,992 63	25,315 69	263,577 73	.....	346,082 87
Roxbury South and Jamaica Plain	26,861 24	4,138 62	21,917 39	71,036 41	20,039 62	183,266 69	.....	327,259 97
City Proper	23,733 28	37,906 99	48,252 89	1,071 90	35,785 11	286,100 11	.....	432,850 28
Ashmont	13,880 06	441 43	8,664 70	28,841 39	13,298 76	217,258 33	.....	282,384 67
Hyde Park	18,497 79	.....	5,346 46	7,831 63	17,480 67	17,110 60	.....	66,267 15
Miscellaneous	.....	.....	.....	.....	.....	* 200,336 28	† $510,901 49	711,237 77
Totals	$203,950 33	$57,105 08	$140,554 21	$232,790 27	$170,453 12	$2,156,002 57	$510,901 49	$3,471,757 07

* Includes street signs, $2,188.44; artificial stone sidewalk rebates, $2,516.17; asphalt and bitulithic repairs, $172,741.87; general engineering and inspection, $22,889.80.

† Includes artificial stone sidewalk repairs, $34,255.50; asphalt, wood block and brick block repairs, $6,405.08.

STREET OPENINGS.

Under Classes 1 and 2 of the schedule of permit fees, permits were issued for openings in public ways, as follows:

TO WHOM ISSUED.	Number of Permits.	Length in Feet.
Sewer and Water Services	3,700	44,400
Edison Company	1,700	119,000
Miscellaneous	1,374	68,700
Boston Consolidated Gas Company	1,041	26,025
Emergency Permits	989	24,725
New England Telephone and Telegraph Company	518	53,354
Boston Elevated Railway	85	12,750
Dedham and Hyde Park Gas Company	33	825
	9,440	349,779

Making a total length of openings approximately sixty-six miles.

Permits for other than street openings have been issued as follows:

Painting and minor repairs	2,837
Placing signs flat on buildings	658
Special permits	355
Erecting and repairing buildings	282
Erecting and repairing awnings	159
Emergency permits for raising and lowering safes	117
Moving buildings in streets	21
Cleaning snow from roofs	20
Feeding horses in street	2
Total	4,451

Total of all permits issued, 13,891.

The fees received from these permits amounted to $11,955.31; of this amount $8,383.31 was deposited with the City Collector and $3,572 was billed to public service corporations.

BONDS.

There are now on file 2,669 surety bonds, in amount of one, three and twenty thousand dollars, covering the city against claims for damages, etc., through the use of permits.

S. L. DURKEE,
Supervisor of Permits.

APPENDIX C.

REPORT OF THE DIVISION ENGINEER OF THE SANITARY DIVISION.

BOSTON, January 2, 1933.

MR. JOSEPH A. ROURKE,
Commissioner of Public Works.

DEAR SIR,—I submit herewith a statement of the activities and expenditures of the Sanitary Division for the year ending December 31, 1932.

The maintenance and expenditures are as follows:

SANITARY DIVISION			$3,095,424 80
Distributed as follows:			
Refuse collection and disposal			2,278,952 09
Collection, day labor	$1,133,745 55		
Disposal, day labor		$383,194 42	
Total, day labor			$1,516,939 97
Collection and disposal, contract	419,443 65		
Disposal, Dorchester garbage		15,568 47	
Total, contract			435,012 12
RECAPITULATION	$1,553,189 20	$398,762 89	$1,951,952 09
Excess 1932 disposal expenditure over ten-year average		327,000 00	327,000 00
Total disposal expenditure		$725,762 89	$2,278,952 09
Total street cleaning expenditure			$816,472 71

NOTE.—Excess expenditure of $327,000 on account of payment of closing instalment on 1922–32 disposal contract and initial instalment on 1932–42 contract. This situation arises once in ten years.

Personnel Changes.— During the year twenty-one men died, three men resigned and sixteen men were retired, making a total of forty separations.

Complaints.— An analysis of 3,151 complaints received at the Central Complaint Office is shown in Table I. As the number of complaints was reduced from 5,014 in 1931, a considerable improvement in service is indicated.

Welfare Men.— The year 1932 witnesses an enormous increase in the number of welfare men assigned to this division. The number of individuals employed in this way rose from 1,849 at the beginning of the year to

3,605 at the end, with a maximum of 4,062. The amount of work performed by these men amounted to 2,874 days per week at the beginning of the year, and had risen to 7,248 days per week at the end, with a maximum of 8,356.

The total number of days' work performed during the year 1932 by these men was 275,965. On the average about three eighths of these men were assigned to the work of the sanitary service and five eighths to street cleaning service.

Change in Units of Waste Production.— In recent years it had become more and more evident that the unit weight factors used in our waste production records needed revision, particularly with reference to ashes.

Since 1916 it had been assumed that the weight of the cubic yard of ashes was 815 pounds and this amount multiplied into the rated cubic yardage of the vehicles used, was assumed to give the tonnage of ashes collected. However, it had long been known that the material was becoming lighter and lighter, not only due to the lessened specific weight of material used, but also because the extensive use of cartons from chain stores made it very difficult to obtain a properly compacted load. More recently, the increased use of oil burners, both range and furnace, has resulted not only in a diminished production of ashes, but also in an actual increase in the production of paper, which, before the advent of the oil burner, was sometimes burned.

For the last sixteen years, therefore, that part of our records which was concerned with the tonnage of ashes produced, or the cost per ton, really represented cubic yards multiplied by an arbitrary factor.

While the so-called tonnage and the so-called cost per ton might give the reader an idea of the change from year to year, in the light of recent investigation it is thought best to eliminate such considerations of weight, and therefore in this report the waste production will be based upon yardage and cost will be given per cubic yard.

This change is in accordance with the recommended practice in other American cities, and is further based upon the fact that costs do not fluctuate with the weight of the material but are in proportion to the volume. Therefore, any comparison of costs between

districts or between periods of time having marked differences in unit weight, would be unreliable.

Comparative costs for the years 1931 and 1932 are shown in Table V, showing on the whole a decrease in costs both in day labor as well as in contract work.

Abandoned Automobiles.— Considerable work was done in the disposal of abandoned automobiles, a record of which is shown in Table VI. This work is being done under authority of chapter 185, Acts of 1897, under which the Health Department ordered the Public Works Department to remove automobiles from private land after due notice to the owners. A unit charge of $5 per vehicle or equivalent is made, but this charge by no means represents the actual cost, as an examination of Table VI will show. For cleaning lots a unit charge of $10 is made.

Yours respectfully,

ADOLPH J. POST,
Division Engineer.

TABLE II.

Amount Expended for the Collection and Disposal of Ashes, Garbage, Waste and Rubbish by Districts, 1932.

Districts.	Population.	Ashes.		Garbage.		Waste and Rubbish.		Total Cost.	Per Capita.
		Cost.	Per Capita.	Cost.	Per Capita.	Cost.	Per Capita.		
1. South Boston	60,224	$157,652 01	$2.62	$49,976 00	$0.83			$207,628 01	$3.45
2. East Boston	61,605	42,886 67	0.70	5,012 38	0.08			47,899 05	0.78
3. Charlestown	30,758	78,388 85	2.55	18,165 01	0.59			96,553 86	3.14
4. Brighton	58,361	35,327 89	0.61	18,377 60	0.31			53,705 49	0.92
5. West Roxbury	62,463	38,779 29	0.62	12,029 86	0.19			50,809 15	0.81
6. Dorchester	193,424	204,974 31	1.06	60,002 61	0.31			264,976 92	1.37
7. Roxbury	152,560	382,540 77	2.51	148,617 62	0.97	$31,140 13	$0.20	562,298 52	3.69
8 and 9. South End and Back Bay	88,326	314,768 92	3.56	48,943 35	0.55	50,302 67	0.57	414,014 94	4.69
10. North and West Ends	56,011	182,637 61	3.26	30,323 40	0.54	23,483 63	0.42	236,444 64	4.22
11. Hyde Park	26,049	13,819 06	0.53	3,802 45	0.15			17,621 51	0.68
Totals	789,781	$451,775 38	$1.84	$395,250 28	$0.50	$104,926 43	$0.13	$1,951,952 09	$2.48
Excess of 1932 disposal charge over ten-year average								327,000 00	
Total 1932 expenditure								$2,278,952 09	

Note.—Improper separation and unrecorded collection of garbage by farmers, etc., in East Boston and Hyde Park.

TABLE III.

Cost of Collection and Disposal of Refuse by Contract in City of Boston for the Year of 1932.

Contract Districts and Population.	Character of Refuse.	Cubic Yards.	Total Cubic Yards.	Cost per Cubic Yard by Districts, Collection and Disposal.	Cost per District.		Total Cost per Capita.
					Cost.	Total Cost.	
2. East Boston (61,605)	Mixed refuse	73,180		$0 59	$42,886 67		
	Garbage	6,990		0 72	5,012 38		
			80,170	Av. $0 60		$47,899 05	$0 777
4. Brighton (58,361)	Mixed refuse	59,610		$0 60	$35,327 89		
	Garbage	26,010		0 71	18,377 60		
			85,620	Av. $0 63		53,705 49	0 92
5. West Roxbury (62,463)	Mixed refuse	51,990		$0 75	$38,779 29		
	Garbage	15,020		0 80	12,029 86		
			67,010	Av. $0 76		50,809 15	0 813
6. Dorchester (193,424)	Mixed refuse	217,510		$0 94	$204,974 31		
	Garbage	38,386		1 56	60,002 61		
			255,896	Av. $1 04		264,976 92	1 369
11. Hyde Park (26,049)	Mixed refuse	19,860		$0 70	$13,819 06		
	Garbage	3,910		0 97	3,802 45		
			23,770	Av. $0 74		17,621 51	0 675
401,902	Totals		512,466	Av. $0 85		$435,012 12	$1 085

Note.— Cost of District 6, Dorchester, includes a disposal charge of $15,568.47; proportionate distribution on account of garbage delivered to disposal contractor.

TABLE IV.

Cost of Collection and Disposal of Refuse by Day Labor Force in the City of Boston for the Year Ending December 31, 1932.

Districts and Population.	Character of Refuse.	Cost per Cubic Yard by Districts.					Cost of Districts.					
		Cubic Yards.	Total Cubic Yards.	To Collect.	For Disposal.	Total Collection and Disposal.	To Collect.	Total Cost to Collect.	For Disposal.	Total Cost of Disposal.	Total Cost of Collection and Disposal.	Total Cost Per Capita.
	Mixed refuse	109,838		$1 03	$0 41	$1 44	$113,104 25		$44,547 76		$157,652 01	
1. South Boston (60,224)	Garbage	17,103		2 51	0 41	2 92	43,039 67		6,936 58		49,976 00	
	Store refuse											
			126,941	$1 23	$0 41	$1 64		$156,143 67		$51,484 34		$3.45
	Mixed refuse	43,614		$1 39	$0 41	$1 80	$60,700 02		$17,688 83		$78,388 85	
3. Charlestown (30,758)	Garbage	7,666		1 96	0 41	2 37	15,055 86		3,109 15		18,165 01	
	Store refuse											
			51,280	$1 48	$0 41	$1 89		75,755 88		20,797 98	$96,553 86	3.14
	Mixed refuse	276,547		$0 98	$0 41	$1 39	$270,379 60		$112,161 17		$382,540 77	
7. Roxbury (152,560)	Garbage	81,886		1 41	0 41	1 82	115,406 55		33,211 07		148,617 62	
	Store refuse	21,060		1 07	0 41	1 48	22,598 68		8,541 45		31,140 13	
			379,493	$1 08	$0 41	$1 49		408,384 83		153,913 69	$562,298 52	3.69
	Mixed refuse	188,967		$1 26	$0 41	$1 67	$238,128 27		$76,640 65		$314,768 92	
8 and 9. South End and Back Bay (88,326)	Garbage	19,602		2 09	0 41	2 50	40,993 23		7,950 12		48,943 35	
	Store refuse	37,420		0 94	0 41	1 35	35,125 98		15,176 69		50,302 67	
			245,989	$1 26	$0 41	$1 67		314,247 48		99,767 46	$414,014 94	4.69
	Mixed refuse	114,134		$1 19	$0 41	$1 60	$136,347 50		$46,290 11		$182,637 61	
10. West End (56,011)	Garbage	7,936		3 42	0 41	3 83	27,104 74		3,218 66		30,323 40	
	Store refuse	19,040		0 83	0 41	1 24	15,761 45		7,722 18		23,483 63	
			141,110	$1 27	$0 41	$1 68		179,213 69		57,230 95	$236,444 64	4.22
387,879	Totals		944,813	$1 20	$0 41	$1 61		$1,133,939 97		$383,194 42	$1,516,939 97	$3.92

TABLE V.
Comparative Costs per Cubic Yard 1931 and 1932.

DAY LABOR DISTRICTS.	COLLECTION.		TOTAL COST.		Cubic Yards. 1931.	Cubic Yards. 1932.
	1931.	1932.	1931. $0.38 Disposal.	1932. $0.41 Disposal.		
1. South Boston	$1 26	$1 25	$1 64	$1 64	122,031	126,941
3. Charlestown	1 32	1 48	1 70	1 89	55,350	51,280
7. Roxbury	1 25	1 08	1 63	1 49	359,245	379,493
8 and 9. South End and Back Bay	1 59	1 26	1 97	1 67	232,851	245,989
10.	1 59	1 27	1 97	1 68	147,653	141,110
Average	$1 39	$1 20	$1 77	$1 61	917,130	944,813
Collection Cost					$1,275,161 99	$1,133,939 97

CONTRACT DISTRICTS.	TOTAL COST.		Cubic Yards. 1931.	Cubic Yards. 1932.
	1931. $0.38 Disposal.	1932. $0.41 Disposal.		
2. East Boston	$0 58	$0 60	81,980	80,170
4. Brighton	80	63	84,100	85,620
5. West Roxbury	82	76	66,640	67,010
6. Dorchester (including disposal)	1 18	1 04	260,393	255,896
11. Hyde Park	88	74	19,030	23,770
Average	$0 96	$0 85	512,143	512,466

TABLE VI.

Abandoned Automobiles Removed and Lots Cleaned under Board of Health Orders. See Chapter 185 of the Acts of 1897.

District.	Removed from Private Property.				Automobiles from Streets and Public Property.	Total Autos.
	Number of Autos.	Number of Lots.	Billed.	Actual Cost.		
1. South Boston	176	7	950	1,683 38	1	177
2. East Boston	1		5	24 68		1
3. Charlestown	65	7	395	778 72	6	71
4. Brighton	185	4	965	2,618 48		185
5. West Roxbury	36	1	190	439 80		36
6. Dorchester	451	9	2,345	4,610 57	81	532
7. Roxbury	547	22	2,955	5,778 22	33	580
8 and 9. South End and Back Bay	89	5	495	915 30	7	96
10. North and West Ends	6	1	40	81 75		6
11. Hyde Park	65	1	335	428 00		65
Totals	1,621	57	8,675	17,358 90	128	1,749

TABLE VII.

STREET CLEANING AND OILING SERVICE.

DISTRIBUTION OF EXPENDITURES.

Removing snow	$70,272 46
Flushing streets	10,484 90
Street patrolling	75,287 21
Push cart patrolling	167,042 90
Cleaning of paved streets	299,326 53
Cleaning of macadam streets	90,397 04
Cleaning of public alleys	7,227 04
Sanding of slippery streets	3,346 54
Cleaning streets by motor machine	34,915 02
Refuse box collection	27,289 89
Total	$785,589 53
Oiling of public streets and ways	28,935 26
Watering of public streets and ways	1,947 92
Total	$816,472 71

APPENDIX D.

REPORT OF THE DIVISION ENGINEER OF THE SEWER DIVISION.

BOSTON, January 2, 1933.

MR. JOSEPH A. ROURKE,
Commissioner of Public Works.

DEAR SIR,—I submit herewith statement of the activities and expenditures of the Sewer Division for the year ending December 31, 1932.

There were built by contractors, day laborers and private parties, 19.43 miles of sewers and surface drains throughout the city.

After deducting 1.17 miles of sewers and surface drains, rebuilt or abandoned, the net increase for 1932 is 18.26 miles, which, added to the existing 1,122.90 miles of common sewers and surface drains and 30.93 miles of intercepting sewers, makes a grand total of 1,172.09 miles of common and intercepting sewers belonging to the City of Boston and under the care of the Sewer Division on January 1, 1933.

There were 404 catch-basins built or rebuilt and 57 abandoned or removed during the year, making a net gain of 347 catch-basins, and a grand total of 20,428 catch-basins under the care of the Sewer Division on January 1, 1933; also 8,256 catch-basins and 128 drop inlets were cleaned by contract.

The sewerage works built during 1932 are listed in detail on the subsequent pages of this report.

Respectfully,

GEORGE W. DAKIN,
Division Engineer.

Financial Statement from January 1, 1932, to December 31, 1932.

OBJECT.	Balance on Hand Jan. 1, 1932.	Appropriations, Loans and Revenues.	Transfers to.	Transfers from.	Total Credits.	Expenditures During the Year 1932.	Balance on Hand Dec. 31, 1932.
Sewer Service							*
Sewerage Works	$338,191 01	$1,000,212 65			$1,338,403 66	$975,361 46	† $363,042 20
Centre Street, Special Appropriation						§ 46,861 22	
Savin Hill Bay, Special Appropriation	29,932 89	‡ 40,000 00			69,932 89	52,382 36	17,552 13
Charles Street Widening, Special Appropriation						40 00	
Preble Street, Special Appropriation (Highways, Making of)						5,506 07	

* Transferred to City Treasury.
† $200,000 authorized but not issued included.
‡ $40,000 authorized loan issued.
§ Does not include $3,078.20 stock from Sewerage Works.
Does not include $3.75 stock from Sewer Service.

Cleaning Catch-basins 1932.— (By Contract.)

DISTRICTS.	Contractors.	Start and Finish of Work.	Price per Cubic Yard.	Cubic Yards Excavated by Contractor.	Contractor Received by Districts.	Total Catch-basins Cleaned.	Total Drop Inlets Cleaned.	Average Cubic Yards Per Basin.	Total Cost of Inspection.	Average Total Cost to City per Basin, Including Drop Inlets.
1. City Proper	Edward J. Byrne	April 14, 1932 / Dec. 31, 1932	$1 28	10,256.42	$13,128 22	3,280	18	3.11	$2,899 44	$4 56
2. Roxbury North	David W. Norton	April 18, 1932 / Sept. 24, 1932	1 23	4,131.28	5,081 47	1,215	14	3.36	724 86	4 73
2A. Roxbury South	Day labor,									
3. South Boston	M. Doyle & Co., Inc	April 18, 1932 / July 21, 1932	1 43	2,822.35	4,035 96	811	13	3.42	527 04	5 42
4. Charlestown and East Boston	Massachusetts Contracting Company	May 12, 1932 / Sept. 21, 1932	1 40	3,368.97	4,716 55	1,006	15	3.30	728 84	5 33
5. Hyde Park	David W. Norton	June 27, 1932 / Aug. 22, 1932	1 15	801.38	921 59	265	4	2.98	161 08	4 03
6. Dorchester	Baker, Matz & Co	May 2, 1932 / Dec. 10, 1932	1 45	5,493.74	7,965 92	1,664	64	3.18	2,516 16	6 06
Totals				26,874.14	$35,849 71	8,241	128	.....	$7,557 42	

Total catch-basins cleaned..... 8,241
Total drop inlets cleaned..... 128

Total cost: Contractors..... $35,849 71
Inspection..... 7,557 42
Advertising..... 9 50
$43,416 63

Total cubic yards material removed, 26,874.14.
Average cost per basin, including drop inlets, $5.02.

Average cubic yards material removed per basin, 3.21.
Average cost per cubic yard removed, $1.54.

Sewerage Works, 1932.

Accounts.	Labor.	Autos.	Materials.	Miscellaneous.	Paid to Contractors.	Totals.
Engineers' and inspectors' salaries, general	$150,969 45					$159,969 45
Engineers' and inspectors' expenses	8,069 68	$621 11	$73 24	$8,560 22	$2,445 56	19,769 81
Miscellaneous	2,740 57	19 89	599 25	408 51	4,672 43	8,440 65
Land-takings				12,378 39		12,378 39
New manholes	15,327 07	5,613 20	4,084 57	1,609 01	1,286 82	27,920 67
New catch-basins, South Boston	1,422 99	367 70	558 28	11 50	579 28	2,939 75
New catch-basins, East Boston				6 86		6 86
New catch-basins, Charlestown	583 20	17 56	137 73	1 00		739 49
New catch-basins, Brighton	391 66	1,175 94	123 91	96 03	367 96	2,155 50
New catch-basins, West Roxbury	2,304 71	1,374 70	1,409 83	282 31	123 75	5,495 30
New catch-basins, Dorchester	10,744 84	1,742 10	3,874 69	1,867 17	2,799 07	21,027 87
New catch-basins, Hyde Park	24 00	66 25	44 01	65		134 91
New catch-basins, Roxbury	8,223 42	820 32	3,054 81	743 40	193 50	13,035 45
New catch-basins, City Proper	3,737 22	697 73	1,932 46	862 90	1,334 92	8,565 23
Repair streets						
Release sewers	217 16		125 86			343 02
Stock			804 43			804 43
Holiday	1,649 50					1,649 50
Totals	$215,405 47	$12,516 50	$16,823 07	$26,827 95	$13,803 29	$285,376 28
Sewers built in entire city	74,945 55	42 48	56,062 45	16,346 24	580,739 51	728,136 23
Totals	$290,351 02	$12,558 98	$72,885 52	$43,174 19	$594,542 80	$1,013,512 51
Less transfers, autos and stock		3 31	38,147 74			38,151 05
Totals	$290,351 02	$12,555 67	$34,737 78	$43,174 19	$594,542 80	$975,361 46

SEWER DIVISION.

Summary of Sewer Construction for Twelve Months Ended December 31, 1932.

DISTRICTS.	Built by City by Contract or Day Labor.	Built by Private Parties.	Total Length Built.	
	Linear Feet.	*Linear Feet.*	*Linear Feet.*	*Miles.*
City Proper	3,088.40	257.65	3,346.05	0.634
Roxbury	5,518.23	4,008.00	9,526.23	1.804
South Boston				
East Boston	2,040.64	1,064.00	3,104.64	0.588
Charlestown	260.00		260.00	0.049
Brighton	6,783.53	256.60	7,040.13	1.333
West Roxbury	55,260.99	441.77	55,702.76	10.550
Dorchester	20,520.95	127.50	20,648.45	3.911
Hyde Park	2,979.74		2,979.74	0.564
Totals	96,452.48	6,155.52	102,608.00	19,433

Net Increase in Length of Sewers Built Between January 1, 1932, and December 31, 1932.

DISTRICTS.	Length of Sewers Built During the Twelve Months ended December 31, 1932.	Length of Sewers Rebuilt or Abandoned During the Twelve Months ended December 31, 1932.	Net Increase for Twelve Months Ended December 31, 1932.	
	Linear Feet.	*Linear Feet.*	*Linear Feet.*	*Miles.*
City Proper	3,346.05	247.00	3,099.05	0.587
Roxbury	9,526 23	3,082.00	6,444.23	1.221
South Boston				
East Boston	3,104.64	256.00	2,848.64	0.540
Charlestown	260.00		260.00	0.049
Brighton	7,040.13		7,040.13	1.333
West Roxbury	55,702.76		55,702.76	10.550
Dorchester	20,648.45	2,638.37	18,010.08	3.411
Hyde Park	2,979.74		2,979.74	0.564
Totals	103,608.00	6,223.37	96,384.63	18.255

Total Lengths of Sewers in Boston.	*Miles.*
Common sewers and surface drains built previous to January 1, 1932	1,122.90
Net increase of common sewers and surface drains built between January 1, 1932, and December 31, 1932	18.26
Total common sewers and surface drains to December 31, 1932	1,141.16
Intercepting sewers connecting with Metropolitan sewers to December 31, 1932	*6.81
Boston main drainage intercepting sewers to December 31, 1932	*24.12
Grand total of common and intercepting sewers to December 31, 1932	1,172.09
Total mileage of streets containing sewerage works to December 31, 1932	660.16

* No additional lengths built during the year 1932.

Summary of Sewer Construction for Five Years Previous to December 31, 1932.

	1928.	1929.	1930.	1931.	1932.
	Linear Feet.	*Linear Feet.*	*Linear Feet.*	*Linear Feet.*	*Linear Feet.*
Built by city by contract or day labor	102,523.60	96,382.76	146,836.12	137,783.66	96,452.48
Built by private parties	11,279.08	11,184.90	5,090.03	5,862.05	6,155.52
Totals	113,802.68	107,567.66	151,926.15	143,645.71	102,608.00

Catch-Basins in Charge of Sewer Division, January 2, 1933.

DISTRICTS.	CATCH-BASIN DATA FOR TWELVE MONTHS ENDED DECEMBER 31, 1932.			TOTAL FOR WHOLE CITY IN CHARGE OF SEWER DIVISION.	
	Number Built or Rebuilt.	Number Abandoned or Removed.	Net Increase.	Previous Report to January 1, 1932.	Grand Total to January 1, 1933.
City Proper	24	7	17	3,547	3,564
Roxbury	55	19	36	3,226	3,262
South Boston	10	8	2	1,377	1,379
East Boston	2	.....	2	1,000	1,002
Charlestown	.....	.....	.....	803	803
Brighton	39	2	37	1,775	1,812
West Roxbury	130	1	129	3,095	3,224
Dorchester	125	18	107	4,568	4,765
Hyde Park	19	2	17	600	617
Totals	404	57	347	20,081	20,428

Table of Approximate Quantities, Lifts and Duties at Calf Pasture Pumping Station from January 1, 1932, to December 31, 1932, Inclusive.*

Month.	Total Gallons Pumped.	Average Per Day, Gallons.	Minimum Per Day, Gallons.	Maximum Per Day, Gallons.	Average Lift, Feet.	Average Daily Duty in Million Foot-Pounds.	
						Per Gallon of Oil.	Per Kilowatt Hour.
January	3,067,721,405	98,958,755	80,733,314	155,712,456	39.2	7.8	2.30
February	2,629,884,023	90,685,656	74,826,626	107,639,188	39.2	7.8	2.20
March	2,979,054,037	96,098,517	74,172,512	148,390,965	39.2	7.5	2.20
April	2,896,492,930	96,549,765	87,464,629	157,309,069	39.2	7.2	2.20
May	2,619,119,875	84,487,736	66,052,644	114,190,500	39.2	7.0	2.20
June	2,747,042,794	91,568,093	73,681,893	126,711,300	39.2	7.7	2.10
July	2,653,875,146	85,608,876	71,236,014	141,908,659	39.2	7.6	2.10
August	2,794,271,000	90,137,742	72,698,871	145,229,240	39.2	7.3	2.00
September	2,893,809,048	96,460,301	87,139,731	136,795,375	39.2	7.9	2.00
October	3,186,971,627	102,805,536	77,424,626	147,921,869	39.2	8.1	2.10
November	3,390,870,513	113,029,017	64,311,989	143,219,251	39.2	8.0	2.00
December	2,949,451,860	95,143,609	81,080,494	115,125,438	39.2	7.8	2.30
Total	34,808,564,258						
Daily averages		95,127,500				7.60	2.10

NOTES.— 16,102,311,154 gallons pumped by oil; 698,470 gallons of oil used.
18,706,253,104 gallons pumped by electric power; 2,947,800 kilowatt hours used for pumping.
*Figures are based on plunger displacement and on pump ratings; no allowance for slip.

Cost of Pumping at Calf Pasture Pumping Station, January 1, 1932, to December 31, 1932, Inclusive.

ITEMS.	Cost.	Cost Per Million Foot Gallons.
Labor	$84,560 23	$0.06197
Fuel oil	20,045 76	.01469
Electric power, Edison, 3,194,200 kilowatt hours*	42,686 66	.03129
Oils and waste	1,667 11	.00122
Rubber valves and packing	415 83	.00030
Miscellaneous renewals and supplies	3,788 63	.00278
Cleaning wells	4,942 25	.00362
Totals	$158,106 47	$0.11587
Labor at screens	8,687 32	.00630
Grand total	$166,793 79	$0.12117

*This includes all power for auxilliaries and lighting.

Sewerage Statistics, January 1, 1932, to December 31, 1932.

Total gallons pumped	34,808,564,258
Daily average gallons pumped	95,105,367
Average dynamic head	39.2
Foot gallons	1,364,495,718,913
Foot pounds	11,419,464,671,580

NOTE.— These tables relating to fiscal year 1931 were left out of report for 1931.

SEWER DIVISION.

Summary of Sewer Construction for Twelve Months Ended December 31, 1931.

DISTRICTS.	Built by City by Contract or Day Labor.	Built by Private Parties.	Total Length Built.	
	Linear Feet.	*Linear Feet.*	*Linear Feet.*	*Miles.*
City Proper	2,991.76	620.50	3,612.26	0.684
Roxbury	7,272.20	4,168.00	11,440.20	2.167
South Boston	5,116.22	.....	5,116.22	0.969
East Boston	1,617.10	.....	1,617.10	0.306
Charlestown	236.00	.....	236.00	0.045
Brighton	18,249 57	.....	18,249.57	3.456
West Roxbury	54,776.52	885.65	55,662.17	10.542
Dorchester	35,363.99	187.90	35,551.89	6.733
Hyde Park	12,160.30	.....	12,160.30	2.303
Totals	137,783.66	5,862.05	143,645.71	27.205

Net Increase in Length of Sewers Built between January 1, 1931, and December 31, 1931.

DISTRICTS.	Length of Sewers Built During Twelve Months Ended December 31, 1931.	Length of Sewers Rebuilt or Abandoned During Twelve Months Ended December 31, 1931.	Net Increase for Twelve Months Ended December 31, 1931.	
	Linear Feet.	*Linear Feet.*	*Linear Feet.*	*Miles.*
City Proper	3,612.26	428.50	3,183.76	0.603
Roxbury	11,440.20	3,518.36	7,921.84	1.500
South Boston	5,116.22	2,048.63	3,067.59	0.581
East Boston	1,617.10	.....	1,617.10	0.306
Charlestown	236.00	.....	236.00	0.045
Brighton	18,249.57	.....	18,249.57	3.456
West Roxbury	55,662.17	410.00	55,252.17	10.465
Dorchester	35,551.89	259.00	35,292.89	6.684
Hyde Park	12,160.30	130.00	12,030.30	2.278
Totals	143,645.71	6,794.49	136,851.22	25.918

Total Length of Sewers.	*Miles.*
Common sewers and surface drains built previous to January 1, 1931	1,096.98
Net increase of common sewers and surface drains between January 1, 1931, and December 31, 1931	25.92
Total common sewers and surface drains to December 31, 1931	1,122.90
Intercepting sewers connecting with Metropolitan sewers to December 31, 1931	*6.81
Boston main drainage intercepting sewers to December 31, 1931	*24.12
Grand total of common and intercepting sewers to December 31, 1931	1,153.83
Total mileage of streets containing sewerage works to December 31, 1931.	654.84

* No additional lengths during year 1931.

Summary of Sewer Construction for Five Years Previous to December 31, 1931.

	1927.	1928.	1929.	1930.	1931.
	Linear Feet.	*Linear Feet.*	*Linear Feet.*	*Linear Feet.*	*Linear Feet.*
Built by city by contract or day labor	87,199.14	102,523.60	96,382.76	146,836.12	137,783.66
Built by private parties,	11,699.24	11,279.08	11,184.90	5,090.03	5,862.05
Totals	98,898.38	113,802.68	107,567.66	151,926.15	143,645.71

Catch-basins in Charge of Sewer Division.

DISTRICTS.	CATCH-BASIN DATA FOR TWELVE MONTHS ENDED DECEMBER 31, 1931.			TOTAL FOR WHOLE CITY IN CHARGE OF SEWER DIVISION.	
	Number Built or Rebuilt.	Number Abandoned or Removed.	Net Increase.	Previous Report to January 1, 1931.	Grand Total to January 1, 1932.
City Proper	52	40	12	3,535	3,547
Roxbury	58	13	45	3,181	3,226
South Boston	33	31	2	1,375	1,377
East Boston	9	.....	9	991	1,000
Charlestown	1	.....	1	802	803
Brighton	70	.....	70	1,705	1,775
West Roxbury	206	.....	206	2,889	3,095
Dorchester	203	11	192	4,466	4,658
Hyde Park	25	.....	25	575	600
Totals	657	95	562	19,519	20,081

APPENDIX E.

REPORT OF THE DIVISION ENGINEER OF THE WATER DIVISION.

BOSTON, January 2, 1933.

To the Commissioner of Public Works.

The following report of the operations, income and expenditures of the Water Division for the year ending December 31, 1932, is respectfully submitted.

During the year only four miles of water pipe, varying in size from 8-inch to 16-inch, were laid for extension, a decrease of 3.5 miles from the total length of pipe extension laid in 1931. This reflects the cessation of building operations and land development in Boston.

In districts, the pipe lengths laid were:

City proper	.17 miles
East Boston	.13 miles
Roxbury	.30 miles
Dorchester	.87 miles
Brighton	.48 miles
West Roxbury	1.91 miles
Hyde Park	.14 miles

In continuance of the policy of replacing the older and smaller water mains with larger sizes for the improvement of the fire protection in the more densely populated sections of the city, 17,240 linear feet, or 3.3 miles of 4-inch and 6-inch pipe, laid fifty years or more, were replaced with 8-inch, 10-inch and 12-inch pipe. Some of the longer lengths were:

CITY PROPER.

Prince street, between Commercial and Hanover streets, 1,575 linear feet 12-inch relaid with 12-inch pipe.

St. Botolph street, between Gainsborough street and Massachusetts avenue, 589 linear feet 6-inch relaid with 10-inch pipe.

West Rutland square, between Columbus avenue and Carleton street, 444 linear feet 6-inch relaid with 10-inch pipe.

West Canton street, between Columbus avenue and Carleton street, 438 linear feet 6-inch relaid with 10-inch pipe.

Doane street, between Broad and Kilby streets, 355 linear feet 6-inch relaid with 8-inch pipe.

ROXBURY.

Bainbridge street, between Dale street and Walnut avenue, 1,500 linear feet 6-inch relaid with 8-inch pipe.

Lambert avenue, between Dudley and Cedar streets, 1,481 linear feet 6-inch relaid with 12-inch pipe.

Norfolk street, between Highland street and Lambert avenue, 649 linear feet 6-inch relaid with 12-inch pipe.

Reed street, between East Lenox street and Northampton street, 256 linear feet 6-inch relaid with 8-inch pipe.

DORCHESTER.

East and West Cottage streets, between Robey street and Brook avenue, 1,708 linear feet 6-inch relaid with 12-inch pipe.

BRIGHTON.

North Harvard street, between Western avenue and Smith street, 839 linear feet 8-inch relaid with 12-inch pipe.

Shepard street, between Washington and Union streets, 900 linear feet 6-inch relaid with 12-inch pipe.

In addition to the relaying for fire protection improvement the construction of the Centre street and Legion Highway Boulevards made necessary the abandonment of the existing 12-inch mains and the laying in a new location called for the relocation of 7,860 linear feet 12-inch pipe in Weld street, from Centre street to Morey street; 2,619 linear feet 12-inch pipe in Legion Highway, from Blue Hill avenue to Morton street.

Welfare forces were used during the entire year, both on small extension and relaying work with satisfaction. A total length of 4,300 linear feet of 8-inch and 12-inch pipe is credited to Welfare labor.

Service pipe applications also reflect the lessened activities in building operations and land development; only 481 service pipes were installed, the smallest number of services installed since the creation of the Water Department. Of the above number, 347 were $\frac{5}{8}$-inch; 95 1-inch to 6-inch in size; 39 fire pipes for sprinkler protection.

The regular work of the Distribution Branch, consisting of leak repairs, installation of service pipes, caring for complaints, shutting off and letting on water, etc., was performed in such a manner and at such periods as to cause a minimum of delay and inconvenience to applicants for water, water takers and the general public. Practically all activities in the business district are now performed on Sundays and holidays.

Under the Legislative Act of 1907, relative to metering water services, there were set on old services in existence previous to 1907 62 meters, and on new services 570 meters, making a total of 632 meters set during the year.

A continuation of a survey of all premises developed the fact that 63 premises were not metered, despite the assumption that we had metered all premises.

The total number of meters in the system at the end of the year was 100,951. In addition to the installation work the Meter Branch changed and reset 7,213 meters after overhauling at the meter shop, and repaired in service 1,471 meters. The work of sealing all meters in service to prevent tampering was continued during the year.

Collections from all purposes in the Water Division were $4,579,552.12.

Very respectfully,

C. J. CARVEN,
Division Engineer.

	1932.	
Revenue:		
Receipts for water	$4,485,991 57	
All other receipts	93,560 55	
Balance from previous year	425,469 76	
Transfer from Sinking Fund	7,750 80	$5,012,772 68
Expenditures from revenue:		
Current expenses and extensions	$1,588,803 85	
Metropolitan water assessment	2,945,390 05	
Refunded water rates	1,254 69	
Transfer to Collecting Department	76,907 50	
Transfer to appropriation for High Pressure Fire Service, extension of	75,000 00	4,687,356 09
		$325,416 59
Expenditures on Debt Account:		
Interest on water loans	$18,235 00	
Payment on Hyde Park water debt	16,000 00	
Payment on serial loans	34,000 00	68,235 00
Balance year's operations other than loans		$257,181 59
Loan Account:		
Debt outstanding first of year	$488,000 00	
Paid during year	50,000 00	
Debt end of year, all serial bonds		$538,000 00
Construction Account:		
Balance first of year, High Pressure Fire Service, extension of,	$47,389 90	
Appropriation for High Pressure Fire Service, extension of	75,000 00	$122,389 90
Expended for High Pressure Fire Service, extension of		63,976 74
Balance unexpended, end of year		$58,413 16
Total, New Construction:		
From revenue, extension of mains	$251,380 05	
From revenue, High Pressure Fire Service, extension	57,528 05	$308,908 10
Cost of construction December 31, 1932	$24,697,533 62	
Cost of construction December 31, 1931	24,681,625 52	
Increase in plant cost during year		$15,908 10
Cost of Existing Works December 31, 1932:		
Pipe yards and buildings	$94,832 16	
Engineering expenses	57,873 58	
Distribution system additions, 1932 ($251,380 05)	*22,074,275 94	
Hyde Park Water Works	† 175,000 00	
High Pressure Fire Service	2,295,551 94	$24,697,533 62

* Includes $154,289.67 expended for High Pressure Fire Service in 1925, 1926, 1931 and 1932.
† Units of Hyde Park Water Works abolished and sold, $293,000.

INCOME BRANCH.

Statement of Each Year's Water Rates, 1912 to 1932, as of December 31, 1932.

YEAR.	Assessments to December 31.	Abatements to December 31.	Collections to December 31.	Outstanding December 31, 1932.
1912	$3,001,771 87	$58,369 39	$2,943,402 48	
1913	3,004,331 52	50,147 90	2,954,183 62	
1914	3,034,885 83	64,653 01	2,970,232 82	
1915	2,960,797 45	57,782 09	2,903,015 36	
1916	3,130,590 53	67,771 69	3,062,818 84	
1917	3,120,878 86	77,353 75	3,043,525 11	
1918	3,359,714 95	162,415 52	3,197,299 43	
1919	3,210,147 91	95,812 76	3,114,335 15	
1920	3,503,677 88	123,509 90	3,380,167 98	
1921	3,615,663 51	90,946 23	3,524,717 28	
1922	3,612,715 51	90,453 27	3,522,262 24	
1923	3,817,642 72	77,449 02	3,740,193 70	
1924	3,832,531 26	43,663 01	3,783,305 56	$5,562 69
1925	3,875,434 21	39,069 54	3,829,029 77	7,334 90
1926	3,910,119 54	44,461 33	3,857,862 33	7,795 88
1927	3,979,098 85	42,794 82	3,913,033 49	23,270 54
1928	4,418,027 32	37,262 32	4,370,263 26	10,501 74
1929	5,018,462 49	44,315 81	4,955,149 41	18,997 27
1930	4,864,180 27	37,064 82	4,780,196 89	46,918 56
1931	4,749,483 38	34,681 94	4,518,694 56	196,106 88
1932	4,609,873 81	11,659 78	2,967,750 68	1,621,463 35

METER BRANCH.

Table No. 1. Statement of Work During Year 1932.

MAKE.	New Sets.	Discontinued.	CHANGED.		Tested.	Repaired in Shop.	Repaired in Service.	Resets.
			Out.	In.				
Hersey disc	391	297	3,389	4,570	6,778	3,728	576	239
Worthington disc	52	60	953	1,019	1,906	1,125	174	30
Watch dog	165	164	1,323	1,414	2,646	1,585	195	60
King	.....	53	1,099	17	2,198	1	198	
Hersey detector	3	.....	3	4	6	.....	124	
Hersey rotary	1	3	41	8	82	1	74	1
Crown	.....	5	59	3	118	1	16	
Federal	.....	3	.....	18	6	5	17	
American	4	10	131	66	262	138	64	10
Lambert	7	10	58	33	116	39	9	3
Nash	.....	8	85	50	170	47	15	3
Keystone	3	2	5	.....	14			
Trident	3	1	15	11	38	10	9	
Hersey compound	3							
Empire	.....	1	52					
Totals	632	617	7,213	7,213	14,340	6,680	1,471	346

Table No. 2.

Meters in Service December 31, 1932.

MAKE.	DIAMETER IN INCHES.											Total.
	⅝	¾	1	1½	2	3	4	6	8	10	12	
Hersey detector	.....	.....	.....	.....	.....	4	42	57	34	23	5	165
Hersey disc	47,722	3,209	1,642	862	392	150	101	29	....	....	....	54,107
Hersey rotary	342	261	142	117	141	52	21	15	....	....	....	1,091
Trident	157	4	6	1	13	9	11	1	2	2	....	206
Crown	247	348	81	86	101	30	28	8	....	....	....	929
Worthington disc	8,731	19	27	18	62	10	1	....	....	....	....	8,868
Watch dog	23,112	976	1,036	709	428	241	75	....	....	....	....	26,597
King	5,079	251	1	18	23	....	....	....	....	....	....	5,372
Federal	882	.....	.....	.....	.....	....	....	....	....	....	....	882
American	963	375	.....	.....	.....	....	....	....	....	....	....	1,338
Lambert	253	107	68	2	15	....	3	....	....	....	....	448
Nash	239	267	43	14	.....	....	....	....	....	....	....	563
Keystone	163	156	.....	.....	3	....	....	....	....	....	....	322
Empire	38	.....	.....	.....	.....	....	....	....	....	....	....	38
Hersey compound	.....	.....	.....	.....	.....	1	11	13	....	....	....	25
Totals	87,928	5,973	3,066	1,827	1,178	497	293	123	36	25	5	100,951

DISTRIBUTION BRANCH.

Table No. 1.

Showing Length of Water Pipes and Connections Owned and Operated by the Public Works Department — Water Division — Water Service, and Number of Valves in Same, December 31, 1932.

	DIAMETER OF PIPES IN INCHES.																
	48.	42.	40.	36.	30.	24.	20.	16.	14.	12.	10.	8.	6.	4.	3.	2.	Totals.
Length owned and operated December 31, 1931	21,655	15,980	15,352	43,830	90,642½	84,651	86,582	304,467	4,966	1,690,693	450,137	1,080,528	1,076,051	79,392	10,324	6,509	5,061,759½
Gate valves in same	20	4	9	20	56	80	73	711	18	4,656	1,536	3,882	3,450	560	16	16	15,107
Air valves in same	38	5	10	34	109	81	42	90	.....	52	1	3	.....	.....	1	.....	466
Blow-offs in same	3	4	6	11	33	33	47	73	.....	164	42	162	142	63	12	2	797
Length laid and relaid during 1932	.....	.....	.....	180	.....	.....	19	325	.....	19,149	2,292	22,438	190	365	210	.....	45,168
Gate valves in same	.....	.....	.....	1	.....	.....	.....	12	.....	130	11	129	21	4	.....	.....	308
Air valves in same	.....	.....	.....	2	.....	.....	.....	.....	.....	5	.....	1	.....	.....	.....	.....	8
Blow-offs in same	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	21	.....	2	.....	.....	25
Length abandoned during 1932	.....	.....	.....	180	.....	17	.....	.....	.....	12,956	600	9,175	11,684	2,695	.....	.....	37,307
Gate valves in same	.....	.....	.....	.....	.....	1	.....	1	.....	22	6	19	50	3	.....	.....	102
Air valves in same	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	2
Blow-offs in same	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	4	.....	1	.....	.....	9
Length owned and operated December 31, 1932	21,655	15,980	15,352	43,830	90,642½	84,634	86,601	304,792	4,966	1,696,886	451,829	1,093,791	1,064,557	77,062	10,534	6,509	5,069,620½
Gate valves in same	20	4	9	21	56	79	73	722	18	4,764	1,541	3,992	3,421	561	16	16	15,313
Air valves in same	38	5	10	35	109	81	42	90	.....	56	1	4	.....	.....	1	.....	472
Blow-offs in same	3	4	6	11	33	33	47	74	.....	161	42	179	142	64	12	2	813

960.15 miles in system.

Table No. 2.

Total Number of Hydrants in System December 31, 1932.

	Lowry.	Boston Lowry.	Boston Post.	Ordinary Post.	Batchelder and Fineran Post.	Ludlow Post.	Chapman Post.	Coffin Post.	Matthews Post.	Boston.	Totals.
Brighton (public)	.....	24	259	423	342	....	....	....	....	10	1,058
" (private)	.....	....	.....	8	.....	....	....	....	....	2	10
Charlestown (public)	58	17	121	56	93	....	....	....	....	2	347
" (private)	13	1	2	37	.....	....	....	....	....	5	58
City Proper (public)	417	29	385	214	422	....	....	....	....	51	1,518
" (private)	5	....	9	1	2	....	....	....	....	37	54
Dorchester (public)	82	89	636	1,028	711	....	....	....	....	14	2,560
" (private)	1	1	9	.....	2	....	....	....	....	4	17
East Bostno (public)	12	10	171	195	145	....	....	....	....	5	538
" (private)	8	1	.....	9	.....	....	....	....	....	25	43
Hyde Park (public)	.....	....	1	259	289	4	71	1	....	....	625
" (private)	.....	....	.....	.....	.....	13	55	....	4	....	72
Roxbury (public)	80	39	332	274	805	....	....	....	....	8	1,538
" (private)	2	1	3	4	.....	....	....	....	....	9	19
South Boston (public)	58	16	209	174	187	....	....	....	....	14	658
" (private)	4	1	.....	15	.....	....	....	....	....	27	47
West Roxbury (public)	11	128	404	954	721	....	....	....	....	13	2,231
" (private)	.....	....	.....	15	1	....	....	....	....	1	17
Deer Island (private)	.....	....	1	19	.....	....	....	....	....	....	20
Gallups Island (private)	.....	....	.....	3	.....	....	....	....	....	1	4
Long Island (private)	.....	....	.....	6	.....	....	....	....	....	....	6
Rainsford Island (private)	.....	....	.....	3	.....	....	....	....	....	....	3
Thompson's Island (private)	.....	....	.....	2	.....	....	....	....	....	....	2
Quincy	.....	....	.....	9	.....	....	....	....	....	....	9
Total number (public)	718	352	2,518	3,577	3,715	4	71	1	....	117	11,073
Total number (private and suburban)	33	5	24	131	5	13	55	....	4	111	381

WATERWORKS STATISTICS.— CITY OF BOSTON.

FOR THE FISCAL YEAR ENDING DECEMBER 31, 1932.

DISTRIBUTION.

Mains.

Kind of pipe: Cast-iron, wrought iron.
Size: 2-inch to 48-inch.
Extended, miles, 4.
Size enlarged, miles, 3.3.
Total miles abandoned, 2.5.
Total miles now in use, 960.15.
Public hydrants added, 63.
Public hydrants now in use, 11,073.
Stop gates added, 206
Stop gates now in use, 15,281.
Stop gates smaller than 4-inch, 32.
Number of blow-offs, 813.
Range of pressure on mains, 30 to 90 pounds.

Service.

Kind of pipe and size: Lead and lead lined, $\frac{1}{2}$-inch to 2-inch; cast iron, 2-inch to 16-inch; wrought iron and cement lined, $\frac{3}{4}$-inch to 2-inch; brass and copper, $\frac{5}{8}$-inch to $2\frac{1}{2}$-inch.
Service taps added, 104.
Total service taps now in use, as per metered services, 100,618.

APPENDIX F.

REPORT OF THE BOSTON AND CAMBRIDGE BRIDGE COMMISSION.

Boston, January 2, 1933.

To the Honorable the Mayor.

Sir,— As Commissioner for the City of Boston, I respectfully submit herewith the annual report of the Boston and Cambridge Bridge Commission for the year ending December 31, 1932.

The commission is composed of two members, one appointed by the Mayor of the City of Boston and the other by the Mayor of the city of Cambridge, under provisions of chapter 467, Acts of 1898.

The commission has charge of the maintenance of the following-named bridges between Boston and Cambridge:

Cottage Farm, Longfellow and Prison Point.

As there is no separate appropriation made for the City of Boston's portion of the expenses of this commission, the same is taken from the appropriation for the Bridge and Ferry Division, Bridge Service. The amount expended during the fiscal year ending December 31, 1932, was $7,551.34.

BRIDGES, REPAIRS, ETC.

Longfellow Bridge.

A contract was awarded to Quinn Brothers, approved November 4, 1930, for furnishing and installing cables and lights on this bridge. The work was completed June 1, 1931, and three payments were made to the contractor, amounting to $2,605.63. There is still due the contractor the sum of $459.82.

Respectfully submitted,

J. A. Rourke,
Commissioner for the City of Boston.

Boston and Cambridge Bridges. Expenditures for the Year Ending December 31, 1932.

Being the Portion Paid by the City of Boston, which is One Half of the Total Expenditure.

	Administration.	Cottage Farm Bridge.	Longfellow Bridge.	Prison Point Bridge.	Totals.
Salaries	$154 16	$785 00	$3,167 34	.....	$4,106 50
Inspection	.....	138 00	150 00	$288 00	576 00
Light	.....	985 00	1,787 77	.....	2,772 77
Supplies	.....	24 70	12 00	.....	36 70
Printing and stationery	16 37	.....	.....	.....	16 37
Rent	.....	.....	43 00	.....	43 00
Totals	$170 53	$1,932 70	$5,160 11	$288 00	$7,551 34

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