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SECOND ANNUAL MESSAGE

OF

EDWIN H. FITLER,

Mayor of the City of Philadelphia,

WITH

ANNUAL REPORT

OF

LOUIS WAGNER,

Director of the Department of Public Works,

AND

ANNUAL REPORT

OF THE

BUREAU OF SURVEYS

FOR THE

Year ending December 31, 1888,

ISSUED BY THE

CITY OF PHILADELPHIA, 1889.

PHILADELPHIA:

DUNLAP & CLARKE, PRINTERS AND BINDERS, 817-19-21 FILBERT ST.
1889.

OFFICERS

OF THE

Department of Public Works.

Director,

LOUIS WAGNER.

Chief Clerk,

HARRY W. QUICK.

CLERK—WILLIS SHEBLE.

STENOGRAPHER—W. W. ALEXANDER.

TYPEWRITER—ROBERT DOWNING.

MESSENGER—JAMES A. JUNIOR.

Superintendent of City Ice Boats,

H. E. MELVILLE.

Chiefs of Bureaus :

GAS—WILLIAM K. PARK.

HIGHWAYS—GEORGE A. BULLOCK.

STREET CLEANING—SYLVESTER H. MARTIN.

SURVEYS—SAMUEL L. SMEDLEY.

WATER—JOHN L. OGDEN.

Bureau of Highways.

The operations of this Bureau were simplified during the year by separating from it the work now being done by the Bureau of Street Cleaning. Its official staff was reduced, by a change of highway districts and by the transfer of inspectors to the new Bureau, one assistant to the Chief of the Bureau, one superintendent and five inspectors. Notwithstanding this reduction the streets were cared for as well, or perhaps better than before, because the officers remaining could give undivided attention to specific highway work.

The following comparative summary of the work of the past two years shows a gratifying growth of better-paved streets :

Comparative Recapitulation of New Paving.

	1887.	1888.	
New paving.....	45,170.13	150,750.13	Linear feet.
Macadamizing (new).....	8,862.00	1,466.98	" "
Grading.....	139,450.00	213,476.71	Cubic yards.
New footway paving.....		28,166.8	Square yards.
Repairs to paved streets.....	535,703.13	573,718.64	" "
Footways repaved.....	3,557.42	7,978.91	" "
Ditches repaved.....	9,120.	26,234.	
Gutter stone laid.....	11,860.00	16,295.00	Linear feet.
Crossing stone laid.....	20,919.78	35,583.00	" "
Tramway stone laid.....	2,880.66	106.00	" "
Curbstone reset.....	7,501.00	162,798.00	" "
Wooden trunks.....	1,931.00	4,337.5	" "
Brick and stone drains.....	578.5	467.00	" "
Gutters paved.....	7,809.00	750.00	" "
Hand railings.....		1,193.00	" "
Broken stone used.....	8,114.64	11,649.04	Cubic yards.
Macadamizing (resurfaced).....		19,083.02	Linear feet.
Footway, curb, and railroad notices served.....	5,067	9,124	
Block gutters.....		1,466.98	Linear feet.

Notwithstanding this very great increase, especially in new streets all of which are paved with improved pavement, and in the repaving of old streets with such pavement, the expenditures were materially reduced.

Expenditures in 1887.....	\$1,011,061 94
Expenditures in 1888.....	895,440 62
	<hr/>
Reduction.....	\$115,621 32

The receipts for the same years were as follows :

Receipts for 1887.....	\$56,472 82
Receipts for 1888.....	58,544 93
	<hr/>
Increase	\$2,072 11

Eighty-seven bridges of the 181 under the care of this Bureau received repairs of greater or less extent, and those not reached last year will be put in good condition during 1889, to the extent of the money appropriated for this work.

The question of repaving with improved pavement the streets occupied by passenger railway tracks is in the same state of legal uncertainty as a year ago. The case against the Union and the Ridge Avenue Passenger Railway Companies is still undecided, and the "case stated" referred to in my previous report, and of which so much was expected, has never been agreed upon.

The Ridge Avenue Passenger Railway Company was notified to repair certain streets occupied by their tracks, which they declined to do, claiming that they had been relieved of this work by a special Act of Assembly. The repairs were made by this Bureau, and the claim placed in the hands of the Department of Law for collection. After argument on bill and answer, the Court decided the act unconstitutional, and gave judgment against the company. The case is now pending in the Supreme Court on an appeal made.

Notwithstanding this condition of affairs, an important step has been taken toward better paved streets, if not in the direction of a legal settlement of the question of the liability

of the companies for the work, by the appropriation of \$200,000 which is to be expended in repaving, with granite blocks, the streets occupied by them. After the notice required by the ordinance governing this matter to the companies to do the work, and their non-compliance with such notice, the work will be let as required by law, paid for out of this appropriation, and the claim placed with the Department of Law for collection. The money recovered, if any, by these suits, can be again appropriated for the continuance of the work of repaving, but if the Courts decide the companies not liable, the streets will have been paved and paid for by the city.

The work proposed will be done upon the streets most in need of repaving, principally in the business part of the city, and distributed along the tracks of all the companies, thereby making the burden of the repayment of the cost less onerous than if the money were all expended on only a few of the lines.

The appropriation for repaving streets not occupied by passenger railway tracks for 1889 is larger than ever before, and with the liberal amounts appropriated for general highway work, very satisfactory progress will be made next year.

The extent of territory to be covered is large and the general condition of our highways bad, but with continued appropriations as large as for 1888 and 1889, or if possible even larger, the area of well paved streets will be extended rapidly, taking much travel from those badly paved, thereby reducing the amount needed for repairs and increasing that for new work.

The custom of repaving a few squares of street here and there as directed by ordinance of Councils, was greatly departed from during the past year, and it is now possible to reach many portions of our city over long stretches of streets paved with granite blocks, sheet asphalt or vitrified brick. With a proper continuance of this mode of work, we shall soon have thoroughfares of streets well paved extending from

south to north, and from east to west throughout our entire city. By pursuing the opposite course, the present unsatisfactory condition of a few squares of granite block, a dozen squares of cobble stone, three or four of vitrified brick, half a mile of rubble stone, and a short piece of sheet asphalt will be continued indefinitely both as to time and extent of territory covered.

Summary of work done in Improved Pavements.

	1887.		1888.	
	Square yards.	Linear feet.	Square yards.	Linear feet.
Granite blocks.....	54,398.08	18,688.00	196,232.23	65,852.61
Asphalt blocks.....	1,587.00	1,034.00	34,464.00	16,629.00
Sheet asphalt.....			16,431.28	5,511.76
Vitrified brick.....	8,041.00	2,881.00	75,601.00	22,542.00
Macadamizing.....	22,666.00	8,669.00	4,229.96	1,466.98
Total.....	86,692.08	*31,287.00	26,958.47	†112,002.35

Replacing Cobblestone with Improved Pavement.

	1887.		1888.	
	Square yards.	Linear feet.	Square yards.	Linear feet.
Granite blocks.....	29,896.86	10,536.00	65,786.85	24,689.36
Sheet Asphalt.....	33,813.72	10,971.83	44,354.00	13,365.40
Vitrified brick.....	4,000.00	1,044.30	8,274.6	2,160.00
Total.....	67,210.58	*22,552.13	118,410.44	†40,214.76

* 1887. Total amount of new paving 53,839.13 linear feet, equal to 10 miles, 1,039.13 linear feet.

† 1888. Total amount of new paving 152,217.11 linear feet, equal to 28 miles, 4,377.11 linear feet.

Many of the small streets in the older portions of the city, generally known as "tramway streets," just wide enough for a single wagon track and paved with cobble stones from curb

to curb or with such stones in the centre of the street, and with a row of broad flagstones on either side, are badly out of repair.

They are difficult for wagon travel and detrimental to health because of their condition. Repairs with the same material are practically out of the question, and for the past two years many of them have been repaved with Belgian block with cement joints, and with the gutter in the centre of the street.

This repaving will be continued to the extent of the money available for such work until all these streets have been placed in good condition.

Mr. Joseph McDonald, Chief of this Bureau, having declined a reappointment in anticipation of the expiration of the term for which he had been elected by Councils, Mr. George A. Bullock was appointed from among those having passed the Civil Service examination, to take office on January 1st, 1889.

Board of Highway Supervisors.

The reports of the Secretary and of the Chief Draughtsman of this Board show that for the first time in its history there have been moneys received for work done and in amount in excess of the expenditures. The sum is not large when compared with the sums received and expended by other branches of the city's service, but it is a satisfaction to know that very valuable additions to the records and plans of underground structures are being made without cost to the city.

The Ordinance of Councils fixing the license fee for vaults under the sidewalks has been modified by increasing the amounts from \$1 to \$5 and from \$5 to \$25 per foot front, respectively, for vaults extending to within three feet of the curb line, and for those covering the entire width of the sidewalk. This will result in both increased revenue to the city and in decreasing the number and extent of these encroachments upon the public highways.

The following is a summary of the transactions of the Board, the work of the draughtsmen, and of the receipts and expenditures :

Transactions of the Board of Highway Supervisors

Permits authorized to be issued for vaults.....	8
Permits authorized to be issued for railroad tracks, curves and turnouts	10
Permits authorized to be issued for underground pipes.....	3
Permits authorized to be issued for electrical conduits.....	108

Work done by the Draughtsmen of the Board of Highway Supervisors.

Street record plans corrected.....	38
New street record plans prepared.....	65
Blue print plans placed on file.....	110

Receipts and Expenditures.

Receipts for the year 1888.....	\$2,811 00
Expenditures for the year 1888.....	2,349 89
Profit to the city.....	\$461 11

The applications for permits to open streets continue unabated in number, and the purposes for which structures of all sorts are to be placed underground appear to increase.

With the introduction and repair of water and gas pipes, of sewers and drain pipes, and the necessary house connections, and of conduits for electric lighting made directly by or under the supervision of the city departments, it seems almost impossible to prevent a continued disturbance of street pavements, but when there are added to these the requests from corporations, firms, and individuals for permission to lay railroad tracks, sidings, and turnouts, to place electrical conduits, steam pipes, and steam heating appliances underground, the time when our streets will not be placed out of repair seems to be far in the distant future.

As many of these enterprises are evidence of the extension of business operations, and others for the introduction of new appliances for the comfort and convenience of the people gen-

erally, and as their absence would, perhaps, give us better highways but less of active trade passing over them, it is better as it is, and the city's officials must continue to struggle with the problem of keeping in good condition that which everybody else is working hard to destroy, a discouraging task, but one incident to the government of all rapidly growing and improving communities.

Bureau of Street Cleaning.

This Bureau, established by Ordinance of Councils approved December 6, 1887, assumed charge of this important branch of the public service January 1, 1888. The advantages of its separation from the Bureau of Highways were soon apparent. The five inspectors of the Bureau were enabled to give continued attention to the work expected of them, which they were not able to do when attached to the latter Bureau, liable to be called on at any time to supervise the grading, paving, or repair of highways. The change has produced better work in the removal of ashes, of garbage, and of dead animals, and in cleaner inlets and streets. The disadvantages of badly paved streets have been reduced to a minimum, the whole city presents a cleaner appearance, and the general health of the people has materially improved.

The report of the Chief of the Bureau presents many interesting statistics worthy of careful perusal. The quantity of waste material handled during the year is of startling magnitude, requiring thorough organization and persistent supervision for its removal with the least possible inconvenience or discomfort to the citizens.

The gratifying decrease in the number of complaints of bad service shows that the work was generally well done, and with the disappearance of the friction incident to new plans and new appliances even better service may be expected.

The most notable decrease was in the number of complaints of the non-removal of garbage, especially during the months of June, July, August, and September. In 1887 these numbered

2,074, and 882 in 1888. It is estimated that under our contracts garbage is to be removed from at least 150,000 houses twice a week during four months, four times per week during four months, and six times per week during the remaining four months of the year. This covers more than 31,000,000 possible removals, and whilst it is not probable that this required number has been reached, the fact that during the whole year there were but 1,162 complaints of bad service is pretty fair evidence that there were no serious or extensive neglects.

The matter of an improved pattern of inlet has already had the attention of the Bureau of Surveys, and wherever practicable all new ones will be constructed upon simpler and more effective plans. The inlets already built will be replaced with those of the new style whenever necessary.

For general information a copy of the specifications under which the contracts for the cleaning of the streets of the city, etc., for 1889 have been made, is attached to the report of the Bureau.

The following is a comparative summary of the expenditures for street cleaning for the years 1887 and 1888 :

1887	\$304,021 00
1888	441,514 50

The total work done during the year just closed is as follows :

Districts.	CLEANED.					REMOVED.			
	Squares.	Inlets.	Crossings.	Market houses.	Snow from fire plugs.	Number of dead animals.	Dirt.	Ashes.	Garbage.
First	51,396	30,154	5,890	176	316	1,321	46,251	93,805	11,011
Second.....	57,159	31,802	39,716	622	385	2,811	46,484	79,287	16,277
Third.....	51,807	31,587	26,295	1,420	261	2,538	41,331	76,422	15,705
Fourth.....	113,643	69,243	66,028	1,049	9,139	126,587	170,027	29,239
Fifth.....	46,551	32,286	67,154	588	546	46,069	79,638	16,428
Total.....	320,456	195,182	205,043	2,218	2,506	16,355	396,722	199,479	88,660

Bureau of Surveys.

The work of this Bureau was largely in excess of its operations in any previous year, the length of sewers built increasing from 22.578 miles, in 1887, to 32.879 miles, in 1888, making the total length of sewers in use in the city 332.350 miles. The ordinances passed and pending for the construction of sewers indicate that the coming year will also show very great increase in this class of work.

The bridges reported as under construction on the line of Ridge avenue across the Wissahickon Creek, and over the River Schuylkill at Market street, have been completed, both of them many months later than the time named in the contracts. The contractor for the former structure has made settlement with the city upon the basis of the damages named in his contract because of his delay, but the contractor for the latter has brought suit to recover the amount withheld. The people generally were greatly inconvenienced and the city put to much expense for the maintenance and care of the temporary bridge because of the many months delay in the completion of the new work.

If this contractor is successful in his suit the Department might as well abandon all efforts to secure the completion of public works, even at the time named in their bids by the contractors themselves, and permit them to finish whenever, at their convenience, they choose to do so.

The crossing over the Trenton branch of the Pennsylvania Railroad at Church street, Twenty-third Ward, has been changed to an under-grade crossing by cutting down the level of this street, and by making other changes made necessary in the adjoining streets. The railroad tracks are carried over the street on a substantial iron bridge.

Similar work is being done on the line of Sixth street, where it crosses the same railroad.

The proposed changes of like character at K street, at Frankford avenue, and at Kensington avenue, were postponed

for want of sufficient appropriation, which it is expected will be made during the coming year.

When this work is done there will remain but one grade crossing of any importance on the line of this road between their station at Broad and Market streets and Church street, Frankford.

A contract has been made, jointly with Delaware County, for the construction of a bridge over Cobbs Creek on the line of Landsdowne avenue and on the boundary line between the two counties.

The bridge on the line of Chester avenue across the West Chester branch of the Pennsylvania Railroad will be extended, under contract executed, so as to make a better approach to the station at Forty-ninth street.

Preliminary plans for bridges over the lines of the Philadelphia & Reading railroad at Girard avenue, and at Second street above Lehigh avenue, have been prepared, and await the action of the Railroad Company as to the amount to be contributed by them for their construction.

The building of a bridge over the River Schuylkill on the line of Walnut street, referred to in my previous report, is an assured fact by the appropriation of \$200,000 towards the work. With the approval of Councils work will be begun, and probably completed this year, on the river piers and abutments, and with additional appropriations next year this very important improvement can be completed in 1890 or at the farthest in the following year.

Because of the many railroad tracks both east and west of the river this bridge and its approaches will be 3,590 feet long, beginning east of Twenty-third street, and extending to some distance west of Thirty-second street, crossing the tracks of the Baltimore and Ohio Railroad, several branches of the Pennsylvania Railroad, the West Chester Railroad, and the Philadelphia, Wilmington and Baltimore Railroad. It will necessarily be an iron structure, and will be built sixty feet wide, the full width of Walnut street east of the river.

My previous suggestions as to the expediency of building our sewers, both main and branch, upon some plan to secure the completion of some sewers somewhere, apply this year as well. The system of piece work still goes on in spite of the self-evident fact that the city pays much more for the work than the price for which it could be done if, instead of distributing the money available for this work in dribblets all over the city, it were concentrated upon a smaller number of places.

This has been accomplished for the sewers on Tasker street and on Somerset street, where it was not possible to make satisfactory arrangements with the owners of the ground at the outlets of these sewers in 1888, and where the work will be done in 1889 to the extent of the appropriations for both these years, no doubt at very much less cost than if it had been let in two parts, and certainly at very much less inconvenience to the people doing business on the line of these sewers.

Several of our main sewers are in a very dangerous condition and large appropriations must be made at an early day for their repair. The one on the line of the Cohocksink Creek has broken in several places, greatly to the inconvenience of the residents on the streets where the breaks occurred, to the damage of some private property, and the loss of animal life. At least \$100,000 will be needed on these sewers, and the more promptly the repairs are made the less costly will the work be.

The bad condition of these sewers arises first and chiefly from bad construction, the present system of inspection of sewers not being in operation when these were built; and second, because most of them are taxed beyond their capacity. This latter difficulty can be remedied only by the building of other main sewers on lines parallel with those already built.

This matter is one of very serious concern, and has already been brought to the attention of Councils by a special message from you, asking an appropriation for the needed repairs.

The main line of the intercepting sewer is finally completed.

Some of the necessary branches for house drainage are finished, others are under construction, and contracts for still others will be awarded shortly. Under the ordinance making an appropriation to the Bureau of Surveys for 1889, a supervisor of this sewer will be appointed, and it is hoped that the many manufacturers and others now discharging filth of all sorts into the river, instead of into this sewer, will comply with the notices served upon them in November last and make proper connection with the sewer. If upon inspection it is found that they fail to do so, the aid of the City Solicitor and of the District Attorney will be asked to secure compliance with law, or upon failure to do so, to enforce the penalties, civil and criminal, fixed for its violation.

The Bureau is engaged in the revision of lines and grades in many of the rural portions of the city, where the numerous building and land operations call for city improvements. It is found that the old rectangular plans of streets are illy adapted to the topography of the land, and very expensive of application, and changes are being made because of these difficulties. Others are made necessary by the change of drainage from above the Fairmount dam to the Schuylkill river below or to the Delaware river, and by the abandonment of the Aramingo canal, and still others because of the many railroad tracks running from or encircling the city, and much time and money must be expended to adapt our plans to this changed condition of affairs. The more rapidly the work is done the less will be the cost of land damages incident to the change of grades after the streets are built upon.

The records of the Registry branch of this bureau are in a dilapidated condition, rapidly wearing out. Arrangements have been made by which they will be copied and the originals filed for future use.

During the year vacancies occurred in the office of Surveyor in the Eighth District by resignation, in the Eleventh District by expiration of term, and in the Thirteenth District by death. The vacancies were filled by the reappointment of

the Surveyor in the Eleventh District, and from among the applicants having passed the examination by the Civil Service Board in the other districts.

These officers receive a salary of \$3,000 per annum, provided the fees received and earned in the respective districts, over and above the expenses for office rent, pay of assistants, etc., equal that sum. No money is paid by the city for work done by these officials, but all fees received are paid into the City Treasury.

The total receipts of the four districts working under the new law were.....	\$32,350 99
The total expenses were.....	21,504 74
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Profit to the city.....	\$10,846 25

The appended statement shows the operations of each district in detail.

Summary of Receipts and Expenses of District Surveyors paid fixed Salaries.

DISTRICT.	Surveyor.	Cash Receipts.	Credit for work done for the City.	Total Credit.	EXPENSES.			Balance Profit to the City.	Remarks.
					Salary.	Pay of ASSISTANTS.	Miscellaneous		
First.....	Thomas Daly.....	\$8,730 32	\$543 88	\$9,283 15	\$3,000 00	\$1,843 00	\$918 19	\$5,761 19	1 year.
Eighth.....	C. A. Sundstrom.....	1,462 08	435 86	1,895 94	895 96	726 50	273 48	1,895 94	4 months.
Eleventh.....	Joseph Johnson.....	5,709 55	1,321 37	7,030 92	2,250 00	1,620 00	1,103 50	4,973 50	9 months.
Thirteenth.....	H. M. Fuller.....	12,439 88	1,701 10	14,140 98	2,750 00	3,950 00	2,174 11	8,874 11	11 months.
		\$28,350 83	\$4,000 16	\$32,350 99	\$8,895 96	\$8,139 50	\$4,469 28	\$21,504 74	\$10,816 25

The following is a comparative summary of the receipts and expenditures of this Bureau :

	1887.	1888.	
Expenditures.....	\$633,132 16	\$569,568 93	\$63,563 23 Decrease.
Receipts.....	22,808 73	26,236 45	3,427 72 Increase.

The operations of the Bureau for 1887 and 1888 were as follows :

Summary of Bridges, Main, Branch, and Private Sewers, built during the years 1887 and 1888.

	1887.		1888.	
	No.	Linear feet.	No.	Linear feet.
Bridges.....	9		2	
Intercepting sewer (section).....	2	} 17,213.62	1	
Wissahickon Valley sewer (section).....	2			
Storm water conduit, Falls Village.....	1		16	13,710.26
Main sewers.....	6			
Branch sewers.....	130	84,709.09	250	149,765.83
Private sewers.....	63	17,290.00	40	10,124.09
		*119,212.62		†173,600.11

* 1887 equal to 22.578 miles.

† 1888 equal to 32.879 miles.