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FIFTH ANNUAL MESSAGE

OF

ALEXANDER HENRY,

MAYOR OF THE CITY OF PHILADELPHIA,

WITH THE

ACCOMPANYING DOCUMENTS.

February 19, 1863.

DEPARTMENT OF SURVEYS.

DEPARTMENT OF SURVEYS, }
 PHILADELPHIA, Jan. 1st, 1863. }

HON. ALEXANDER HENRY,

Mayor of Philadelphia :

DEAR SIR:—In compliance with your circular, I take pleasure in presenting to you an exhibit of the business of this department for the past year.

The appropriations made for our use during the year 1862 were as follows :

General appropriation	.	\$22,540 00
Special appropriation	May 23	185 00
“	“ Sept. 12	383 00

Total amount appropriated		<u>\$23,108 00</u>
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Which has been expended as follows :

For expenses of General Office	\$7,386 66	
Salaries of District Surveyors	6,000 00	
New surveys (including corner stones)	6,504 34	
Revisions of old surveys	1,308 00	
		\$21,271 00
Amount appropriated		23,108 00
Balance unexpended		\$1,837 00

The surveys of the outer districts are progressing but slowly, and no time can be fixed for their completion, as that must be determined by the amount of appropriation furnished by Councils for that work.

The following is a list of plans completed by the District Surveyors during 1862, all of which have been carefully examined by the Board of Surveyors upon the ground prior to their approval, viz :

No. 42. Revision of grades, Second Section, West Philadelphia, approved February 17, 1862.

No. 43. Revision of grades, Third Section, West Philadelphia, approved February 17, 1862.

No. 142. Survey and regulation, Fourth Section, Blockley, approved March 3, 1862.

No. 150. Survey and regulation, Seventh Section, Blockley, approved February 17, 1862.

No. 164. Survey and regulation, Southwest portion of Moyamensing, approved March 3, 1862.

No. 170. Survey and regulation, Eighth Section, Blockley, approved March 3, 1862.

Widening Delaware avenue, Spruce to South streets, approved March 3, 1862.

Junction Railroad, Gray's Ferry to Belmont, approved April 21, 1862.

Philadelphia and Olney Railroad, Sixth and Diamond streets to Fifth street and Nicetown lane, approved April 21, 1862.

No. 153. Line and grade regulations, Fourth Section, Twenty-fifth Ward, approved November 3, 1862.

No. 186. Line and grade regulations, Third Section, Twenty-fifth Ward, approved November 3, 1862.

No. 187. Line and grade regulations, Second Section, Twenty-fifth Ward, approved November 3, 1862.

No. 188. Line and grade regulations, First Section, Twenty-fifth Ward, approved November 3, 1862.

No. 13. Revision of lines and grades on Pennsylvania avenue, from Coates street to Columbia avenue, Canal street from Minor street to Pennsylvania avenue, approved December 1, 1862.

No. 122. Revision of lines and grades on Spring Garden street, from Broad to Twenty-third street, approved December 1, 1862.

No. 65. Revision of lines and grades, vicinity of Cohocksink creek, east of Front street, approved December 1, 1862.

No. 191. Survey and grade regulations, Northeast of Holmesburg and Southeast of Frankford and Bristol turnpike roads, approved December 1, 1862.

No. 192. Survey and grade regulations, lying between Bridesburg and Holmesburg, east of Bristol turnpike, approved December 1, 1862.

No. 193. Survey and grade regulations, lying between Pennepack and Poquessink creeks, east of Bristol turnpike, approved December 1, 1862.

Our records are each year becoming more perfect as the plans of survey are extended. In the Twenty-fourth Ward we have nearly completed all that will there be required for many years. So also in the Twenty-second and Twenty-third Wards. The Twenty-first Ward has yet important ground to cover, but during the past year no extension of the work has been filed.

Among the most important sections that now require plans of record, is the old city, east of Seventh street. This should be carefully plotted at the earliest moment, as there is nothing on file by which lines or grades may be definitely fixed, should a question of law arise.

For general drainage, we have, during the past

year, constructed 9,980 feet of sewers, none of which have been main or arterial sewers; 7,406 feet of these have been paid for out of the general appropriations, and 2,574 feet by individuals.

As the condition of the drainage for the lower section of the city—taking Broad street as the centre—remains unchanged since my last report, I must again allude to the necessity of making such examinations as will be imperative before a general system can be fixed. It is more important now than last year, and will, with the rapid strides of improvement, force itself upon us before many seasons pass. The improvements upon South Broad street demand consideration; and justice to those who are investing so largely in that quarter would call upon us to be ready, at least when necessity impels. The drainage system that will be required for that section, I have before alluded to, and will only add that it must be carefully examined and well digested before a final plan can be presented to Councils.

In the northern section of the city, the line of the Cohocksink creek, between Montgomery street and Oxford street, is still an open channel, impeding improvements, and cutting off communication between Fifth and Sixth streets, for a distance of near 2,700 feet. This should be covered in as a question of healthfulness, and Columbia, Montgomery, Berks and Norris streets opened for public convenience. The upper section of this sewer should be at once extended from Ninth and Berks at least to the crossing of the Germantown Railroad at Norris street, by which we will have a guard against any recurrence of such a disastrous flood as happened on the 12th day of September last. As matters now stand in that locality, and existed at the date spoken of, the sewer has no opportunity of performing its full work, as, being unfinished, its mouth is at right angles to, instead of in the direction of, the line of the natural valley, and while the valley fills, even down to Sixth street, backing up upon the sewer at Ninth street, the water

passes into the mouth of the sewer only as a wier, having none of the advantages of current it would have with the opening in line of valley.

If this sewer were extended to the railroad embankment, and securely closed in at the bridge over the run, on the line of the railroad, we would have a safe embankment, which would retain there such a sudden accumulation of water as occurred upon the day above noted, and, sustaining it, give time for it to pass off harmlessly through the sewers. Had not the bank at Tenth street been newly made, and thus unfitted to bear the pressure of a depth of water equal its height, we would have been spared the disaster caused by the wave passing over that neighborhood.

This rain was unprecedented, and if it had been confined to the closely built section of the city, instead of the particular locality on which it fell—as its extent was very limited in area—we should have had flooded streets and cellars, but no accidents of the serious character suffered could have taken place; and, as a plain statement, I can say that this disaster was not the fault of a want of capacity in our sewers—as none of them were materially injured—but from the fact that at the Rising Sun road, an old sewer of small capacity erected by an improvement company on their own land, stopped up the water-way of the bridge; this caused the valley above that bridge to fill, so that the water ran over the guard walls as over the comb of a dam. Its pressure finally blew up the old sewer, and allowed the water to pass through the bridge arch under a head of some twelve feet, which, with the consequent scour, soon undermined the abutments and destroyed the arch. So soon as this took place the mass of water thus relieved rushed upon the bridge at Broad street, where the same cause produced a like effect; *i. e.*, the water accumulated, on account of the break above, with such rapidity that the opening under the street could not carry it off, and it again backed up, and again, with its resulting scour, destroyed the abutments by undermining them, and threw down the

arch. This then brought a torrent of water into the valley west of Tenth street with a velocity proportional to the head or height backed up on the west side of Broad street. This, of course, could not be carried off at once by a sewer not proportioned for such accidents, consequently it piled up against a newly made embankment of earth, and, saturating it by percolation, soon destroyed its power to sustain the weight, and, with a *rush* and a *wave*, it passed on down to the built portion of the city, but was delivered entire into the creek east of Tenth street, through the Cohocksink sewer. The sewer at Tenth street stood uninjured, and had the bridges at Rising Sun Road and at Broad street been built with a counter arch, similar to the Tenth street sewer, I feel confident no trouble would have ensued.

In this way were all the railroad bridges destroyed through that section of the city north of the Cohocksink drainage, extending even to the northern boundary in the Twenty-third Ward. To repair these bridges, as well as those which from ordinary wear required renewal, before the frost rendered a suspension of such work necessary, has called for energetic work on the part of the Highway Department. They have been completed by that department in accordance with plans, &c., from this office, and I believe they are substantial and secure. The stone arch, with enlarged openings, has been adopted, except in a few instances, and where a change of location may in a few years be necessary. The cost has been greater than heretofore expended for such work on account of the scarcity of mechanical labor and the season of short days. The foundations have all been troublesome and costly, owing to the scour before described; as in many instances where the stream at bridge site had a depth of channel of only about two feet prior to the freshet, there is now a hole varying from nine to twelve feet deep, in which at least part of the foundation must lie.

Near Frankford we have considered it safer to give an open water-way, by constructing truss bridges of

wood, (to be replaced with iron hereafter,) than to risk again the undermining of an arch, with its sudden release of water and resulting damage upon the built section immediately below. As providing sewer area in our city for such a storm is a subject still under consideration by the department, we are not at this time prepared to submit any project.

The present sewer was never intended to carry off the whole drainage from the upper Cohocksink valley, as is stated and explained in report of this department of April 5, 1856; but another sewer was therein projected on the line of Norris street, yet it was not deemed requisite until that section of drainage area west of Broad street should become paved and built upon; nor is it now, except for *accidents* similar to that still fresh in our memory, and it is questionable to me whether, in any human probability, such accident will occur again. It is an important question, full of interest, requiring time and research, nor should it be hastily determined, as upon the conclusion arrived at may result the expenditure of a large amount of money.

The bridges of our city have not that care which their importance requires. I allude particularly to those over the river Schuylkill. They should be swept *sometimes*, so that masses of mud should not accumulate, to retain moisture, and soon by rot destroy the timbers.

The Girard Avenue Bridge should be newly floored, and protection railings placed upon the retaining walls upon both sides.

The Wire Bridge needs a new trussed railing, and the western approach placed in safe condition for travel, with proper protection for the anchorages and shore cables, as suggested in previous report.

The Market Street Bridge, for the want of proper protection by weather-boarding, has required extensive repairs; and when the main braces were renewed, a year ago, it was in such condition as to well terrify those of us who appreciated the danger. In that re-

pair we endeavored to protect the joints by inserting sheet lead between every brace footing and its shoulder on post, but the want of proper watching has enabled thieves or malicious persons to tear off the lead at some points. The watching and cleansing should be more carefully attended to. The southern roadway of this bridge should be renewed at an early date.

The Penrose Ferry Bridge, which has lately come into the possession of the city by purchase, should be strengthened, as recommended in the report heretofore presented.

The Chestnut Street Bridge, which is now under construction, has been progressing as rapidly as we could hope for under the difficulties of procuring proper labor. The two main abutments are now within a few feet of the springing line of arch, as also is the pier and abutment of the approach arches on the eastern side. The retaining wall between the approach abutment and Twenty-fourth street is well advanced, and the pile foundation on the western side nearly ready for the stone work. The crib for the centre pier in river is in place and at the opening of spring will be ready for the masonry.

At my last report I had every hope that we could obtain sufficient stone for the face work of abutments and piers from our own neighborhood, but we soon found it impossible, not on account of quality—as it is very superior, both in grain and durability—but it could not be delivered in sufficient quantity to keep the work in active progress. It was therefore necessary to obtain all the face stone from the coast of Maine. It is hard and durable granite, but in appearance not equal to that from Leiperville. The character of work done we believe to be superior to anything that can be found in this country on bridge work, and I am much indebted to my assistant engineer, J. R. McClure, Esq., for the constant attention he has given to every detail of the work.

The iron work for the superstructure is in an advanced state, some 430 tons having been cast, and is

now ready for the finishing tools. We hope to have it placed upon the masonry during the coming summer. The character of the castings is very satisfactory.

At the last session of the Legislature an act was passed authorizing this department to prepare records of the opening of streets and roads, as also of the warrants, surveyors' returns, and descriptions of lots and land within the city of Philadelphia. This work is progressing, and will make a record of most important information, and of great value in establishing titles. The record now, in its imperfect state, has been of great value, and is used for frequent reference in fixing public highways. Its real importance will be better known as it advances to completion.

The widening of Delaware avenue has been progressing satisfactorily, and as soon as spring opens the work of completion will be commenced, and in a few weeks after a fifty feet street, with a forty-one feet carriage-way, will extend along the entire city front, from South to near Poplar street. The advantages of this wide avenue are not really felt, from the fact that property owners seem to forget that the extra width of twenty-five feet is extended for public benefit, and therefore use it as storage space. The paving on the avenue alluded to in my last report as experimental has proved a success, and its more general adoption would be advantageous, both in point of economy for repairs and comfort to those driving over it.

Respectfully submitted,

STRICKLAND KNEASS,

Chief Engineer and Surveyor.

DEPARTMENT OF PUBLIC HIGHWAYS.

OFFICE S. W. CORNER CHESTNUT }
AND FIFTH STREETS, }

PHILADELPHIA, January 13, 1863.

TO THE HON. ALEXANDER HENRY,

Mayor of Philadelphia :

MY DEAR SIR:—In compliance with your request, I respectfully submit a statement of the receipts and expenditure of this Department for the year 1862.

Table A exhibits the receipts amounting to eighteen thousand two hundred and one dollars and thirty-nine cents.

Table B exhibits the several appropriations, the transfers, the amount expended on each item, and the balances which merge.

It having been my desire to keep within the appropriations, I used the utmost vigilance to restrain unnecessary outlay ; however, with all the economy I could practice, it was altogether impossible for me to come up to the public requirements on item No. 3, (for repairing streets) without the additional appropriation, as the amount in the general appropriation was inadequate to the purpose ; in respect to the other items, except those affected by the freshet, I have succeeded in keeping within the limit.

The small amount appropriated for repairs to bridges in 1861, compelled my predecessor to withhold the repairs from many which were left in a dilapidated and dangerous condition. (See Appendix to Journal of Common Council, page 366, 1862). These have been repaired, and charged to the appropriation of 1862.

The freshet which occurred last spring damaged several inlets, culverts, and bridges, which have been repaired at considerable expense, while the great freshet in September destroyed many of the bridges in the 20th, 21st, 22d, and 24th wards, and nearly all the larger ones in the 23d Ward; and in connection therewith much private property, exceeding in value the cost of their reconstruction. The torrent of water was so great as not only to destroy the arches and superstructure, but in many cases it swept away the foundations, and deepened the channel several feet, thereby rendering their reconstruction much more expensive than the estimate based upon a hurried examination indicated.

There were comparatively but few of the large sewers injured, and those only in sections where the streets were unimproved, and where the surface water had not adequate ingress. Many inlets were injured as the result of their imperfect construction.

Upon examination I found most of the bridges had been built in a very improper manner, presenting a smooth and handsome face, but destitute of strength. The stones of which, in some instances, they were constructed were suitable only for cellar walls of an ordinary house, but too small for bridge purposes. In many cases the entire face did not show a single tie, and might properly be termed veneered.

This false system of economy finds no favor with me, and as these bridges are intended to be used for an indefinite period of time, I deemed it proper and economical, under the advice and direction of the able and efficient Chief Engineer, Strickland Kneass, Esq., to use the largest stone and best material that could be procured, although at greater cost, with a view to permanency.

To secure the completion of this work at the lowest possible expense, I have selected a skilful man to superintend the construction of each bridge, who is required to take a solemn obligation to make a true and

correct return of all material used and labor performed, thereby presenting every safeguard that I could devise to protect the City from excessive charge, fraud, or speculation. A number of the bridges have already been completed, and the others are in progress of construction, and will yet require considerable outlay to finish.

In the latter part of the season, Councils directed the repaving and repairing of certain streets, to meet the expenses of which I asked for a transfer to those items equal in amount to the cost thereof, but in consequence of the delay in acting upon the resolution, the season for such work had nearly passed, and a portion of the work could only be done, and, therefore, the balance will merge.

Respectfully, your obedient servant,

JAMES LANDY,

Chief Commissioner of Highways.

(A.)

Receipts from January 1 to December 31, 1862:

Licenses for Passenger Railway Cars	\$9,390 00
“ “ Wagons, Carts, Drays, &c.	1,028 75
Permits for Building	285 00
Licenses for Hacks and Carriages	448 00
Rents of Sewers	2,475 17
Permits for Sewers	1,502 00
Repaving	467 00
Permits for vaults	586 80
Licenses for Omnibuses	30 00
Permits for Turnouts	70 00
Miscellaneous Receipts	1,926 67
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	\$18,201 39

(B)

Statement of Highway Department for 1862.

An Ordinance making an appropriation to the Department of Highways for the year 1862:

March 17	\$26,5450 00
July 7	1,500 00
October 16	25,000 09
" 16	18,934 57
September 29	55,000 00

<i>Items.</i>	Amount Appropriated.	Amount Countersigned	Balances which merge.
1. Salaries of Commissioners, Clerks, Messenger, Watchmen of Bridges, and Superintendent of City Railroad	10,800 00	10,789 17	10 83
2. Paving intersections of streets 15,000 00 To Transfer Dec. 17 5,000 00	10,000 00	8,014 48	1,985 52
3. Repairing streets 89,000 00 By Ordinance Oct. 16 18,000 00 By Transfer Dec. 17 3,600 00	60,600 00	58,082 57	4,517 43
4. Repaving streets 5,000 00 By Ordinance Sept. 20 4,000 00 By Transfer Dec. 17 4,000 00	18,000 00	10,492 79	2,507 21
5. Repaving over water- pipe 5,000 00 By Transfer Dec. 17 400 00	5,400 00	5,259 69	140 31
6. Gutter crossing and tramway stone	10,00 00	9,385 48	614 52
7. Repairing roads and unpaved streets 30,000 00 By Ordinance Oct. 16 7,000 00 By Transfer Dec. 17 2,650 00	39,650 00	39,266 15	383 85
8. Grading streets and roads 18,000 00 To Transfer Sept. 20 4,000 00 " " Dec. 17 1,000 00	13,000 00	10,497 57	2,502 43
9. Paving footways 2,500 00 To Transfer Dec. 17 300 00	2,200 00	2,186 93	13 07
10. Repairing and building bridges 15,000 00 By Ordinance Sept. 29 40,000 00 By Transfer Dec. 17 4,000 00	59,000 00	58,992 18	7 82
Amount carried forward	223,650 00	210,967 01	12,682 99

	Amount Appropriated.	Amount Countersigned	Balances which merge.
Amount brought forward .	223,650 00	210,967 01	12,682 99
<i>Items.</i>			
11. Repairing inlets and culverts 20,000 00			
By Ordinance Sept. 29 15,000 00			
To Transfer Dec. 17 5,000 00			
	30,000 00	29,991 08	8 92
12. Cleaning streets 50,000 00			
By Ordinance Oct. 16 18,934 57			
	68,934 57	68,934 57	
13. Cleaning roads and unpaved streets	8,000 00	7,875 68	124 32
14. Repairs to City Rail-road 1,500 00			
By Ordinance July 7 1,500 00			
	3,000 00	2,987 78	12 22
15. Repairs to pumps and wells	1,500 00	1,261 06	238 94
16. Intersections to branch culverts 500 00			
To Transfer Dec. 17 500 00			
17. Printing, advertising, and stationery	1,200 00	1,200 00	
18. Insurance on bridges	100 00	100 00	
19. Office and yard expenses 3,500 00			
By Transfer Dec. 17 1,100 00			
	4,600 00	4,390 09	209 91
20. Incidental expenses 1,000 00			
To Transfer Dec. 17 446 50			
	1,446 50	1,294 37	152 13
21. Signboards for street names 200 00			
To Transfer Dec. 17 196 50			
	3 50	3 50	
22. Repairing streets along which the tracks of Passenger Railways are laid, &c 1,200 00			
To Transfer Dec. 17 1,200 00			
23. Salaries of Supervisors	15,700 00	15,610 00	90 00
24. Constructing branch culverts 10,000			
To Transfer Dec. 17 3,000 00			
	7,000 00	4,526 67	2,473 33
25. Railing to wire bridge	750 00		750 00
	365,884 57	349,101 81	16,782 76

SPECIAL APPROPRIATIONS.	Amount Appropriated.	Amount Countersigned	Balances which merge.
Ordinance Jan. 8, 1862, for lifting ashes	3,000 00	2,639 50	360 50
" Feb. 3, 1862, for Insu- rance on Bridges	1,200 00	1,200 00	
" March 10, 1862, for Build- ing Culvert	6,000 00	5,531 61	468 39
" Aug. 16, 1862, for Grad- ing, curbing, and paving Pennsylvania avenue.	4,980 00	3,500 00	1,480 00
	15,180 00	12,871 11	2,258 89
RECAPITULATION.			
Ordinance March 17, '62	265,450 00		
" July 7, 1862	1,500 00		
" Oct. 16, "	25,000 00		
" " 16, "	18,934 57		
" Sept. 29, "	55,000 00	365,884 57	349,101 81
" Jan. 8 "	3,000 00	2,639 50	360 50
" Feb. 7 "	1,200 00	1,200 00	
" March 10, 1862	6,000 00	5,531 61	468 39
" Aug. 16, "	4,980 00	3,500 00	1,430 00
	381,014 57	362,072 92	19,041 65