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*Mayors' Office*

SIXTH ANNUAL MESSAGE

OF

**ALEXANDER HENRY,**

*Mayor of the City of Philadelphia,*

WITH THE

ACCOMPANYING DOCUMENTS.

*March 17th, 1864.*

## DEPARTMENT OF SURVEYS.

DEPARTMENT OF SURVEYS,  
PHILADELPHIA, *January 1, 1864.* }

HON. ALEXANDER HENRY,

*Mayor of Philadelphia:*

SIR:—I take pleasure in complying with your request, and now lay before you a general statement of the operations of this Department for the past year.

The appropriations made to this department for the year 1863 were as follows:

General appropriation of February 21, 1863,      \$19,400 00

Which has been expended as follows:

For expenses of General Office	-	-	\$7,650 00
Salaries District Surveyors	-	-	6,000 00
New Surveys and Stones	-	-	3,787 50
Revision of Old Surveys, &c.	-	-	900 00
Balance unexpended	-	-	1,062 50

\$19,400 00

The following is a list of Plans and Surveys that, having been examined and approved by the Board of Surveys, were referred to and confirmed by the Court.

No. 13. Revision of lines and grades on Pennsylvania avenue, from Coates to Poplar street, May 18, 1863.

No. 13. Revision of lines and grades on Canal street, from Minor street to Pennsylvania avenue, May 18, 1863.

No. 13. Revision of lines and grades on Garden street, from Broad to Twenty-third street, May 18, 1863.

No. 122. Revision of lines and grades on Pennsylvania avenue, from Poplar street to Columbia avenue, May 18, 1863.

No. 65. Revision of lines and grades of Ocean street, and vicinity of Cohocksink Creek, east of Front street, September 24, 1863.

No. 156. Second Section of the Twenty-third Ward, May 18, 1863.

No. 191. Survey and grade regulations, north-east of Holmesburg, and south-east of Frankford and Bristol Turnpike Roads, May 18, 1863.

No. 192. Survey and grade regulations between Bridesburg and Holmesburg, east of Bristol Turnpike, May 18, 1863.

No. 193. Survey and grade regulations between Pennepack and Poquessink Creeks, east of Bristol Turnpike, May 18, 1863.

Plan and Profile of Central Passenger Railway, Steam Road to Germantown, September 30, 1863.

Plan and Profile of Connecting Railroad.

As will be perceived by the amount expended, and our returns of Surveys, there has been less field work performed for the City than in former years; this is from the fact that several of the items of appropriation were so tied up by provisos that they could not be complied with by the Surveyors; the result has been the retarding of some very important work, to the serious inconvenience of those desiring to improve, and has compelled the paving and curbing of some highways without having any established grade; but the directions of Councils by Ordinance were carried out; fortunately this has been in a section of the City where the topography is such as to allow the exercise of judgment by the District Surveyor without much risk; but it is an unsafe proceeding, and should not be repeated, as liable to entail upon the City heavy expense in alteration, when the grades may be fixed, and upon citizens who may erect buildings in conformity with the street grade as laid; their claim upon the City for damages would most probably be considered good.

The extension of our Surveys over the City Plot, it is believed, has been attended with good results, by enabling those building in the rural districts to so locate their improvements with regard to street lines and grade elevation, as to relieve the City from extravagant claims for damages, when the necessities of the City may require the streets or avenues for public highways; its importance has of late been felt in other cities of our country, and the wisdom of the policy adopted by us, commented upon in flattering terms by their officers. Since the organization of this Department, we have almost completed sectional plans of the Twentieth, Twenty-second and Twenty-fourth Wards, and as much of the Twenty-third as is now immediately required; but the First and Twenty-first should be continued, particularly the former; both have been delayed the past year by the wording of the Ordinance restricting payments, thus compelling the Sur-

veyors, should they proceed with the surveys, to expend time and money without return until the plans may be finally confirmed by Court; this forces them to seek work more immediately remunerating to gain a livelihood, at the disadvantage of the City.

The following is a list of Sewers constructed and ordered during the past year by the City, in accordance with special Ordinances.

Noble street, Third to St. John	cost	\$713 00
Tenth " Market to Filbert	"	760 60
Twenty-second street, Vine to Summer	"	544 68
Twenty-third " Pine to South	"	1,403 60
Montgomery " Richmond street to Chandler School House - -	"	394 50
Green and Harvey streets, Twenty-second Ward - - - -	"	2,476 00
Seventh street, Moore to Tasker -	"	1,397 90
Davis' Landing, Swanson street to River Delaware - - - -	"	717 80
Spruce street, Twenty-fourth Ward, (un- finished) Germantown avenue, Norris to Diamond - - - -	"	1,473 25
Christian street, Twenty-third street to Schuylkill River, (unfinished) -	"	7,000 00

The following have been constructed at individual expense, authorized by the Board of Surveyors under Ordinance approved November 11, 1858.

#### LOCATION.

		Size.	Length.
Charlotte street,	Canal street, southward	10 in.	60 ft.
Eleventh "	Jefferson st., northward	3 ft.	100 "
Columbia avenue,	Germantown av. to Mifflin	12 in.	
Tenth street,	Poplar st. to Girard av.	2' 6"	
Filbert "	Tenth st., westward	2'	100 ft.
Market "	11th to Farmers' Market	3'	200 "
Second "	Columbia to Montgomery	2'	
American "	Norris to Diamond	2'	200 "
Broad "	Thompson, northward	2' 6"	230 "
Ninth "	North of Poplar	2'	90 "
Spruce "	Twelfth st., westward	10"	45 "
" "	Thirteenth st. westward	10"	

Size. Length.  
6" 80 ft.  
10" 150 "  
10" 625 "

Lawrence street,	Culvert st., northward	6"	80 ft.
Arch "	Fifth st., westward	10"	150 "
Green "	Tenth st., eastward	10"	625 "
Twelfth "	Girard av. to Thompson		
Perth "	Parrish st., northward	10"	
Logan "	Vine st., southward	2' 6"	450 "
Twelfth "	Thompson st., northward	3'	500 "
Green "	Sixteenth to Eighteenth	2' 6"	
Twenty-first street,	Sansom to Walnut, and		
on Walnut st., eastward	- - -	2' 6"	600 "
Front street,	Moore to McClellan, and		
on McClellan st., westward	- - -	6"	
Garden street	Willow to Buttonwood	2'	
Fourth "	Moore to Tasker	2' 6"	850 "
Buttonwood "	Sixteenth to Seventeenth	2' 6"	400 "
Fourth "	Race st., northward	10"	200 "
Mulvaney "	Montgomery st., southward	2'	260 "
Cuyler "	Twentieth st., eastward	12"	100 "
Mellwain "	Fifth to Sixth	8"	

Upon the subject of Sewers, it will be necessary for me, to some extent, to recapitulate a portion of my former report, as but little has been done during the past year in the construction of *mains*.

In the upper section of the City, it is highly important that the open channel of the Cohocksink, east of Tenth and Norris street be covered in, and that the auxiliary sewer, projected in the Report of 1856, be constructed on the line of Norris street, &c., emptying into the Delaware River at Palmer street; its cost will approximate \$200,000 at present prices. In the lower section, the Sewer on Federal street, with its upper branches, should, in part, be constructed at an early day; this empties into the Schuylkill at Ellsworth street, immediately below the Arsenal, and extends eastward to Eighteenth street; the cost of this, approximately will be \$75,000. This section, for the most part, now drains into the clay-pits which have been worked out, the water lying there until evaporated or absorbed—neither of which occur until stagnation has taken place, and its malarious influence has had its effect upon those residing upon and near the locality; in the same section, the necessity for some provision being made for the drainage which now passes off by the

Chickhausing Creek, increases every year. This stream originally took its head near Fifteenth and Pine streets, and passing down Thirteenth street to near Wharton; thence eastwardly through the Parade Ground to Twelfth and Reed streets, and on southward, crossing Broad street near Moore street, Passyunk Road near Sixteenth street and Moyamensing Road, east of Penrose Ferry Road, emptied into Hollander's Creek. The Sewers on Pine, Thirteenth, and Christian streets of early construction, and on Federal, Wharton and Reed streets of later years, cut off the drainage north of the Prison and east of Broad street; but there is yet much area now covered with buildings, and some of it with residences of costly construction that have no means of drainage except by using our street gutters; and much inquiry has been made as to when they may expect relief. This Sewer, as has been previously stated, cannot be properly constructed in part, until the general system has been developed by extended instrumental examinations. The cost of this work entire will be great, as most probably a tidal drain will be found necessary, so arranged if practicable, that from the difference in tide elevation, a current through it may be obtained; its capacity must be large, so that storage room may be had to provide for the drainage between tides; this investigation should be ordered at an early day.

The basins at Beaver and St. John streets, and Third and Culvert streets, should be cared for; the first by constructing a four-foot sewer from Canal street to Germantown road, on Beaver, Second, and Otter streets; this would, while relieving the basin, give greater outlet area to the Canal street sewer. The second may be relieved by constructing a three-foot sewer on Beaver street, westward to Third street, with such inlets as will intercept the flow from Brown street. The heavy gradients on both sides of Culvert street brings the storm-water to the basin with such rapid accumulation as to render an increased inlet capacity imperative. And still another might be made, of three feet diameter, on Globe street, from Canal street to Germantown road, as a relief to Canal street in extraordinary storms. The value of these sewers for private drainage along their several lines is as great as their usefulness for relief to the mains.

Many minor sewers are necessary, and every encouragement should be given for their construction as asked for,

whether at public, or, as is often applied for, at individual, cost, for each line built, takes from the street surface by increasing the number of inlets, what tends to effect injuriously the healthfulness of the City.

Greater attention should be given to the inlets, not only to prevent their being offensive to the locality, but to allow them to perform their full duty. The greater portion of them are so constructed, with a water-trap, that if permitted to fill up with street detritus, as is most common, their delivery into the sewer is entirely stopped, and every inch depth of material washed in their sumph from the street reduces their capacity. In many cases the want of the full action of the inlets—the result of neglect in cleaning—has caused floodings, which have been attributed to want of capacity in the sewers. This mode of constructing inlets is the most approved, as preventing the effluvia from the sewer polluting the atmosphere we breathe; to gain this most desirable end, such arrangements should be made that every trapped inlet in the City should be cleaned out once a week, and some, in localities such as around markets and market streets, more frequently. The condition of our sewers should be examined with reference to the amount of deposit lying in them, reducing their capacity. That on Pennsylvania avenue, near Girard avenue, is nearly filled with material washed in during the heavy storm of last year, and should be cleaned out; in the Canal street sewer, also, there is much deposit, and no doubt there are others equally bad. In European cities the work of cleaning out deposit is continually going on.

In previous reports the importance of having all connections to our sewers made from residences constructed properly, both as regards workmanship and position, has been dwelt upon, but as yet no action has been taken. In London all work immediately connected with the City sewers is performed by persons in the employ of the City who are familiar with such work, and in accordance with directions issued from the Engineer of the Metropolitan Board, thus preventing injury to the sewers by being broken into at any point by any one whose interest alone is to perform the work perhaps in the shortest time and at the least expense. This should be corrected; and as regards the granting of permits for making such connections, they should be issued at this Department, so that a proper record of the position may be made. This



Department alone has a record of the location of sewers, and is therefore better advised of what may be necessary, and better able to judge as to the propriety of granting the permit asked for. Certain guards should also be thrown around this privilege, and only such matter be allowed to pass into the sewers as may be carried off without precipitation; no privy well should be drained into a sewer, while the introduction of water-closets should be by law insisted upon for every house within one hundred feet of a sewer, and, when practicable, the cesspools should be destroyed; if retained, they will, by the permeation of the fæces into the surrounding soil, so infect it, as to generate disease and encourage epidemics in our midst.

Again it becomes necessary to call your attention to the condition of our City bridges, and urge the great importance of closer watchfulness and care; watchmen are appointed to each bridge, but what their duties are has never been set forth; much of their leisure could be advantageously occupied in preventing the great accumulation of dust not only upon the road-way, but upon the frame timbers, which accumulation is most injurious as generating decay. The Falls Bridge is in good order. The Girard avenue Bridge stands well since the repairs and strengthening additions made in 1858, but the road-way is neglected, and should have a new course of oak planking upon it. I beg leave to call attention to the condition of the road-way at both ends of this bridge, which is seriously obstructed by the position of the diverging tracks of the Passenger Railway, rendering it dangerous to all vehicles approaching the bridge from either direction; they could be altered at small cost, and the interest of the City demands it. The Wire Bridge itself is thought to be in good order, but its cables and suspenders should be painted; the new truss railing recommended in last report, has been added; this bridge with its open-laid cables, can never be entirely confided in, owing to the impossibility of ascertaining what changes are in progress in the interior of the cables; so long as protected from the action of the weather, there is no reason to suppose that deterioration has taken place, but in this the only protection is by paint, the value of the application of which is not justly appreciated. Absolute security would call for new cables, which can now by the improvements of machinery, be so over-laid as to effectually

prevent the penetration of moisture. The western approach to this bridge is still in a most deplorable condition, and should for the credit of our City, be put in proper order; the road-way is insecure, the anchor pits of the cables are neglected, and the whole locality unworthy an entrance to a great City; the work requisite, will cost now from \$15,000 to \$20,000. The Market street Bridge, one of the greatest thoroughfares of our City, and one which should have the most jealous care, has during the past year been most sadly neglected; early in the summer, a portion of the roof was destroyed by a hurricane, and earnest endeavors were made to secure its repair, but they were ineffectual until the summer and autumn's rains had done their damage to its framing, and the cold of winter came, preventing a proper attention to and in its repair. Again, let me say it should be protected by weather-boarding, and its southern floor examined and placed in good and safe condition; if this bridge does not receive better care, and its lower chords and brace footings (particularly of the center truss,) cleaned from the continued accumulation of mud and dirt, the City will at no late date be called upon for a new structure, when half the real life of the bridge has not elapsed; the bridge is a noble structure, and worthy of all care. The Penrose Ferry Bridge, which has lately become the property of the City, must have attention during the coming year; as previously reported, it should be adjusted to shape and strengthened in its braces and chords; an application has been made by the Tow-Boat Company, asking for the construction of guards at the pivot and north draw pier; this was upon the original design for the bridge, and would facilitate the passage through the draw, and thus protect both boats and bridge, and by building a rest upon these guards for the draw when open, would reduce the cost of repairs. I would recommend the erection of the guards as asked for; the cost at the present range of prices for material and labor, would be about \$10,000. There are several small bridges that should be renewed or repaired. The Bridge over Pennsylvania avenue, on Girard avenue, has suffered much from neglect; no attention has been given to the surface-drainage upon its approaches, which has injured the western arch, though I trust not seriously; it should be relieved of its stone floor, and with its approaches paved with cobble stone for the present, and have

the wing walls extended so that the surface-water could be carried over and beyond it; the railing has been in a dilapidated condition for a long time; it might be a marked feature connected with the Park, as it will be a principal entrance. Several of the bridges over Gunner's Run need immediate adjustment, painting and future care and attention, and such strengthening additions as has lately been made at York street, which is now as firm as its general proportions will allow. The Bridge over the Cohocksink on Delaware avenue, which was a wooden queen post bridge, and erected in 1856, was lifted from its seat in September last, by a canal boat getting fast under it, on the rise of tide; it was demolished, and it may be considered providential, for an examination had been made of it a few days previous, and it was pronounced unsafe; the lower timbers had been cut away by evil-disposed boatmen, rendering it entirely insecure as a public highway; plans were at once prepared for the erection of a new bridge, with iron plate girders for its support, but no authority for its erection has yet been granted; on such a highway, there should be a bridge of the most permanent character, having stone abutments; but such cannot be recommended at this time, owing to the great cost; it is therefore proposed to use the same timber abutments, and raise its road-way so as to afford better accommodation to the passing canal boats; the cost of this structure will be about \$5,000.

I beg leave to allude to the mode in which these works should be performed, and make the assertion that no work that can be explained in a specification, should be performed other than by contract, having a proper officer connected with this Department, whose duty it shall be to have the immediate supervision of such work. Much difficulty, and, I fear, ill feeling has been caused during the past year, from the fact that this Department was called upon to endorse bills for repairs to bridges as correct, which could not be sanctioned; the excess of cost having been occasioned by having the work performed by day's labor. All persons experienced in such matters, know that laborers will not work for a corporation as for an individual, and particularly in the case of municipal work, the superintendent has not that control of his men that a contractor has. The Department, though desiring to be liberal, has not been able to swell the correct value to the cost presented, and thus, in some instances it is believed good

men have unavoidably been the sufferers ; had this work been done by contract, we would have had work of equal quality, at much reduced cost, and performed most probably by mechanics skilled in such work. Supposing, a proper superintending officer in immediate charge, and, if the work projected should be performed as now suggested, the estimates made will, it is believed, cover the expenditure, otherwise they will not reach ; no contract should be allotted to persons whose business experience would give no knowledge of the work to be performed.

It is a matter of great regret, that circumstances beyond control, have prevented the opening of the Chestnut Street bridge for travel on the first of January, 1864, as was anticipated ; the causes are known to all, and therefore, it is unnecessary to amplify ; but will state that having been forced to go to the eastward for our face stone, the delay of its shipment caused by the appropriation of so many vessels for Government service, has regulated to a great extent, the progress of the work. The scarcity of labor is the other great difficulty, retarding the supply of our home stone ; the contractors, it must be acknowledged, have exercised so far as it is possible to judge, all energy in endeavoring to procure supplies ; and, although their losses were heavy, having made their estimate of value on peace prices ; yet, no illusion was made to giving up the work, and every order was as promptly obeyed as could be reasonably required ; and, it is to be hoped that the late advance of price granted by Councils, will relieve them from the difficulties financially, under which they labored. The condition of the work now is such as to give us hope that it may be opened for use during the coming fall. The two main abutments are at spring line, the main pier but three feet below spring, or, sixteen feet above low water ; the eastern approach is ready for the arches, with the retaining walls to roadway level, while the Twenty-fourth street archway has its abutments to spring, and piers above ground. On the western side, the approach archway abutment and pier is above ground, and the retaining wall far advanced. As the work progresses to completion, it will be necessary to arrange the level of, and pave Bridgewater street, between Market and Chestnut, and Chestnut street, west of Bridgewater, and the early attention of Councils to this is desired.

The iron work is progressing, and will, without doubt, be ready for erection so soon as the masonry is prepared. These contractors have alluded to the necessity of calling upon Councils for assistance.

I must again refer to the great necessity of having proper plans prepared of parts of the built-up portions of our City; there are none on file showing the established lines of the "Old City," Northern Liberties; and below South street to the line of Passyunk our plans are very imperfect, giving neither reliable distances nor elevations. For Passyunk we have not yet been able to obtain the plans prepared under the Commissioners of Survey, for which a large amount has been expended by the City; all those plans should be perfected and placed on file.

During the past year much valuable information has been placed on file relative to the history of many of our streets, roads, and lanes. The result of the tedious examination of old and musty books, so far as it has progressed, is now of easy access and reference, and will throw light upon many localities, the early names of which are now forgotten, and unless traced up and indexed by the nomenclature of later years, as is now being done, might be said to be, in fact, lost, as many of these old lanes have become obliterated by the opening of streets, but a knowledge of their position is of great value in establishing lines and preparing briefs of title. By Ordinance of Councils the duties of the clerk preparing these records terminate January 1, 1864, and it is very desirable that the work should be perfected; I trust, therefore, it may not be curtailed in the unfinished condition it now lies.

I cannot, sir, close this report without referring to the prompt action of the Board of Surveys during the trying times of the past summer, when, upon the first threatenings of invasion by the army of traitors, they offered the use not only of all their valuable private information, but their entire time and services, to the officers of the General Government who were detailed to prepare for our defence. Their valuable aid has been acknowledged, and no doubt much time and expense saved by their timely assistance.

Respectfully submitted.

STRICKLAND KNEASS,  
*Chief Engineer and Surveyor.*