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**FIRST ANNUAL MESSAGE**

**ALEXANDER HENRY,**

**MAYOR OF THE CITY OF PHILADELPHIA,**

**WITH**  
**ACCOMPANYING DOCUMENTS.**

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**JANUARY 27, 1859.**

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**PHILADELPHIA :**

**INQUIRER PRINTING OFFICE, 121 SOUTH THIRD STREET.**

**1859.**

The expenditures of the Department of Surveys during 1858 have been \$24,517 34. Under the direction of this department several small bridges have been erected for public highways, and very essential repairs have been made to the bridge over Gunners Run and to that over the Schuylkill at Girard avenue. Four main lines of culvert have been placed under construction in accordance with the ordinance authorizing the same, which will not only benefit the vast extent of property in their immediate vicinity, but must tend to promote the general health of the community. The construction of the culvert in the north-western part of the city, which is designed to drain the large area on the eastern side of the Schuylkill above its dam at Fairmount, is of special importance, as it will in a great measure prevent the flow of impurities from slaughter houses, manufactories and public buildings, into the body of water from which is taken that used for daily consumption throughout the city. Due regard for the purity of the water furnished to citizens demands the enactment of an ordinance prohibiting the erection of buildings in the vicinity of the Schuylkill above Fairmount to be occupied for noxious purposes, unless ample provision be made for the drainage of all impurities into culverts that shall empty them below the reservoirs. The system of municipal drainage is yet but imperfectly understood, and its great importance not sufficiently comprehended; but the ordinances of the last year relative to branch culverts, and providing for the new main culverts, must lead to its thorough consideration and perfection.

A plan recently prepared by the Board of Surveyors, for the construction of a bridge over the Schuylkill at Chestnut street, will be submitted at an early day for the action of Councils. The cost of such bridge, it is believed, will very far exceed the amount of \$125,000, originally appropriated for that purpose.

## SURVEY DEPARTMENT.

DEPARTMENT OF SURVEYS, }  
 December 27th, 1858. }

TO HIS HONOR, ALEXANDER HENRY,  
*Mayor of Philadelphia.*

DEAR SIR:—I take great pleasure in complying with your note of the 18th inst., asking for a full, accurate, and detailed statement of the general condition of this department for the past year, with the amount of moneys received and disbursed, &c., &c., and beg leave to report, That the appropriations made to this department during the year 1858 have been as follows:

General appropriation of January, 11th, 1858,	\$29,354	30
Special " of April 28th " " "	84	28

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\$29,438 58

Of this has been expended, as will be shown in detail by the statement of the City Controller,	\$24,517	84
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Leaving balance unexpended, Jan'y 1, '59,	\$4,921	24
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The preparation of sectional plans of our city plat, has been conducted with energy by the Surveyors and Regulators in their respective districts; the following being a list of those which have been placed on record in this office during the past year, viz:

2d section of Chesnut Hill—lineal survey.		
8th " Blockley	"	
6th " " " "	"	App'd May 3, '58.
7th " " " "	"	Exam'd by Board.
2d " Germ'n, grades and survey	Ap. Nov. 15, '58.	
5th " 21st ward " " "	"	May 3, '58.
6th " Germant'n " " "	"	"
4th " 21st ward, grades	Examined by the Board.	
2d " Frankford, " " "	Approved Nov. 1, 1858.	
3d " " " " "	"	"
4th " " " " "	"	"
White Hall, " " " "	"	"

1st section	23d ward, grades	Examined by the Board.
2d "	"	"
3d "	"	"
4th "	"	"
5th "	"	Examined by the Board.
6th "	"	"
8d "	Chestnut Hill, lineal survey.	
9th "	21st ward, south of Erie avenue, grades.	
4th "	Blockley, - - - "	
"	Between Susquehanna and City avenues and Forty-second and Fifty-first streets.	
10th "	Blockley, lineal survey.	

The amount of work thus returned by the Surveyors may be estimated, when I state that it covers an area of 7,000 acres, with 250 miles of streets, extending beyond the built up portions of our city.

In the most of the survey districts, the plans on file and now under course of preparation, when completed, will extend nearly to the limits that may be considered necessary for many years, for all city purposes, and will guard us from the necessity of arranging our plans to suit artificial circumstances, to avoid excessive damages, rather than adopt what a judicious adaptation of the natural topography would suggest, so soon as this point is reached, the expenses of this department will be reduced to its minimum of salaries only.

During the past year the out-door business of the department has been more than usually called into requisition in matters of engineering; we have built a number of small bridges of different character, from the stone arch, to the simple girder truss, besides work for completion of structures unfinished when the city was consolidated, and repairs necessary from ordinary wear and tear, as well as from imperfect workmanship at erection, but will only allude to two.

At the bridge on Gunner's Run canal at York street, we have replaced one abutment, dilapidated from bad foundation, and the other must be taken down and rebuilt so soon as spring opens.

At the Girard avenue bridge, we have completed the very heavy retaining walls necessary for the filling and use of the approaches. This has been a work of greater magnitude than was originally anticipated, owing to the difficulty of finding suitable material upon which to base a wall of such dimensions, and at the same time, preserve as much of the old wing-wall as possible; it has been attended with imminent peril, but am happy in being able to report that no loss of life or injury of any kind has resulted therefrom. It would have been judicious and economical, on the part of the city, had we been authorized at the same time to repair the imperfect abutment at the western end of that bridge, as the foundation must be very defective, and if on rock, as is asserted, must be so shelving as to furnish but a poor ground work for the superincumbent weight of masonry. This is shown by the opening of the joints on the northern corner, and which, I fear, will ere long, render it imperative to have recourse to heavy expenditure for renewal, and even now, must be sustained by shoreing, to preserve it, and prevent the consequent destruction of at least one span of the superstructure, should the abutment fall.

The superstructure of this bridge was erected in the year 1853, prior to consolidation, and was not used for travel, other than foot passengers, until the winter of 1857, when the retaining walls on the eastern side were completed; though the western approach was yet incomplete, sufficient width of roadway was open to permit safe travel. Shortly after my assuming the duties entrusted to me by the city, I observed evidences of weakness in the structure, not from decay alone, and at the completion of the eastern approach, made a written protest against throwing it open for public use. But it was unheeded, until the evidences noticed and reported were, during the past autumn, rendered apparent to all by the arches of the eastern shore span breaking between the skewback and lower chord. Orders were at once issued by the highway department for their repair, and in doing so, every weak joint has been strengthened, and the entire bridge has been adjusted to its lines, both horizontal and vertical. We therefore now present it to the public as a

safe and secure structure. Much might be said in reference to the bridge, as to its injudicious location and consequent extra cost, but as it was before the time of our responsibility, it would be of no particular advantage. This bridge yet requires a suitable flooring, when a highway will be thrown into public use, that has long been required for the northwestern section of our city.

I am also gratified, sir, in reporting to you that the four principal lines of culverts, memorials for which have poured into the chambers of Councils for several years past, have now been allotted to responsible parties to construct, under such specifications and details of contract as will secure to the city the best character of work. These works, sir, I consider the most important of any that have been undertaken by our city for many years. Their results will not only be for the individual comfort of those residing upon the immediate lines thereof, who have been incommoded by the periodical freshets which have, in many instances, caused great loss of property, but will extend through our city in reducing the liability of disease, generated by the present state of the locality and the extension of epidemics for which the character of the atmosphere, particularly upon and contiguous to the line of the Cohocksink, is well fitted; for this, the construction of the Cohocksink line of culvert has been long required, as a reference to the statistics of the last cholera visitation will prove. The Vine street culvert will improve the character of property upon its line, and add to the city revenue, from increased assessment, sufficient to return to the city at an early day, the expenditure now authorized. The same result will follow the construction of the Moore street culvert, but to a greater extent, as in that case, the want of proper drainings, facilities has prevented the use of much vacant ground which will now be at once covered with buildings, returning its due quota to the city treasury.

The northwestern culvert is by no means of the least importance in the list, as by its construction on the line proposed we preserve the Schuylkill water from the deteriorating drainage flowing from a large manufacturing

district on the eastern side of the river, and it would be greatly to the interest of our community could an ordinance be issued to prevent the location of any stable, slaughter-house, or manufactory in such position that the refuse therefrom would flow into the water liable to be pumped out for city consumption. Such Act of Assembly exists, though reaching only to the south side of Francis lane, now Coates street, but should be extended up the river, and so framed as to guard each of the reservoirs for water distribution now located on its margin.

Another system of drainage to which the attention of this department has been called, but upon which I am not now prepared to present you a specific opinion as a result of minute examination, is that due to the area lying west and north of the Fairmount dam, in the Twenty-fourth Ward; as yet, much of the obnoxious matter is absorbed before it reaches the dam, as it passes mostly through an open and unimproved section; but judging from the advance of improvement in that ward, the day is not far distant when the drainage from that area will exceed in objectionable qualities that presumed now to flow from the eastern side.

It is a matter of congratulation that the subject of drainage has received so much consideration from the City Councils as shown by the appropriation of \$200,000 for the works under contract, and the enactment of the ordinance authoring the construction of branch culverts or drains. The Board of Surveyors have already acted upon a number of applications which are now open for contract, and will be built without entailing any expenditure upon the city other than for intersections, and will greatly improve our street surface by enabling us to introduce a larger number of inlets, thus preventing the long surface flow which is so objectionable, and will also give opportunity to correct a very great evil in the form of cross gutters at street intersections. In all our new grade regulations we endeavor so far as practicable to avoid them, but of course the introduction of the branch culvert system is the only efficacious mode by which they can be prevented; many of those which now exist, and



which are not liable to be avoided at an early date by a branch culvert, should be remedied by the adoption of cast iron box gutters, extending across the carriage-way and foot-way, the expense of which would be returned to the community in the saving of time and a reduction in the wear and tear of vehicles. Those that have been introduced by the passenger railway companies constructed on Race and Vine streets meet the ends desired, but can be improved by being extended so as to close the gap now left at the curb.

The ordinance relative to branch culverts alluded to is of great importance in securing more thorough drainage, yet great responsibility rests with the Board of Surveyors in granting these permits, to avoid imposition upon a number for the benefit of a few, and it requires further guards for the protection of individuals, who from the necessity of their location or business are required to construct a branch culvert at their own expense; such persons should be protected from the indiscriminate use of such drain by neighbors who may have declined contributing only on account of the urgency of the case assuring them that it would be constructed by others, when they would be granted a permit from the city at a less cost than the price per foot of construction. This now prevents the extension of a number of branches; the board cannot authorize their construction under the ordinance, because in some instances but *one* owner's name is subscribed to the application, and its usefulness to the city is not such as to warrant its construction unless a majority of owners should request it, while the party applying is unwilling to build at his *own expense* unless he shall have an opportunity of remuneration from those who may afterward desire to connect therewith. For this we shall at an early day present a supplementary ordinance, trusting it may receive consideration from Councils and your approval.

I must again, sir, allude to the necessity of some system being adopted by which the connections made with our culverts for private drainage should be constructed under the immediate control of a city officer. Such abuse

of privilege as is now exercised by individuals will be severely felt hereafter, particularly as they increase in number, which is very rapidly; they oftentimes injure the strength of culvert-arch, and more frequently are arranged with a total disregard to anything beyond their immediate purpose and private ends, while the flow in the culvert is seriously affected, and each forms a nucleus for deposit, which must some day be taken out by the city at great cost. In the cities of Europe this is guarded with jealous care, and all connections at the culvert-arch are made by officers especially delegated; nor under the present system, has this department any means of knowing where or how such connections are made, and when called upon at any time to correct an existing evil are entirely ignorant of what has been done by the authority of other branches of the city government, while the proper location of such connections, and the effect thereof upon culverts opened, can only be known at this department, where each system of drainage is being minutely examined and recorded; in perhaps most instances, these connections, if properly and scientifically constructed, improve the working of the sewer, but if, as is mostly the case, the pipes are protruded into the area of flow without regard to the necessity of retaining a smooth and regular interior surface, and the debris occasioned by the unworkmanlike manner in which such insertion is performed, is left lying in the sewer, we cannot be surprised if we are at length called upon to cleanse our sewers by manual labor of the deposits thus created. Were it possible, and there is no apparent difficulty, for this department to have recorded all matters connected in any way with culverts, it would result eventually in great benefit to the city, and is particularly necessary now that the system of private drainage is becoming so universal in its application to new improvements.

The work that is now so urgently called for by a large number of our citizens, the bridge over the Schuylkill at Chestnut street, I am happy in being able to report, is now ready in plan for the action of Councils, the Board of Surveyors having given it close scrutiny as presented, and recorded their entire approval. The amount esti

estimated for the construction of this work, seems to astonish those who are not familiar with such structures, and particularly as they have been somewhat misled from the circumstance that \$125,000 was appropriated by the "County Board" for that purpose, prior to consolidation, but forgetting that such was not intended to be the full cost of the structure that would be suitable for a highway for the City of Philadelphia, nor, in fact, do I know of any character of bridge that could be put up at that place for the amount thus specified, as the masonry necessary to the abutments, approaches and pier, would far exceed it in cost, and this cost would vary but little with the plan of superstructure, while the superstructure itself will not reach that amount by a large margin. Some have expressed surprise that a stone bridge was not adopted in preference to all others, and on this point I may say, that with the rise of arches and span which it has been considered expedient to adopt, so as to allow as easy a gradient as possible for the approaches, that a stone bridge is impracticable, and it has not been deemed judicious to interfere, more than is absolutely imperative, with the water way of river, by the adoption of two piers, on account of the great liability of seriously affecting the Fairmount works.

During the coming season, it will become requisite that a new bridge be constructed at Bridesburg, over the Frankford creek, at the United States Arsenal; that now in use is a sliding draw, and in a very dilapidated condition, entirely unsafe for travel, and is at best but a temporary affair, with trestle piers; the draw is decayed in all its parts, and is sustained by incessant patching, attended with considerable expense. The whole affair should be removed, and a swing draw substituted, with a stone pier and abutment adapted to the purpose. The city owning the property on the south of this location, there can be objection to the plan proposed, as the privilege to this swinging over the wharf property, can be reserved in case of sale.

As all questions of passenger railways must pass the examination of the Board of Surveyors, prior to their

construction, and the views of the board have differed somewhat from Councils, as regarding the gauge, &c., bringing out a regulating resolution from that body confining us to the first, and mayhap not thoroughly digested plan, I desire to say that the board were desirous of taking advantage of any improvements that might be suggested, rather than adopt a plan merely because it was then in use; and believe now, that many of the adherents to the present plan, clearly see that they would not have been affected, as they surmised, had the board been permitted to exercise some practical judgment in the matter; had the gauge of 4 feet 8½ inches been adopted on some of the roads lately constructed, we would now have had Broad street, with its double track repaired, placed in thorough condition, and fitted for passenger travel, while the character of rail that would have been adopted for the new track, would have had the same and better advantages for ordinary vehicles, as they could have travelled upon it without injury to wheels, which is now unavoidable; this would also have prevented the combined rail on Second and Third streets, with the intricacy of castings in the carriage-way, that are now indispensable.

Although, in the organization of a new city government, much attention and time were given to the arrangement of the relative duties of the many departments composing it, yet we are by no means perfect, and much legislation is wanted, before this department can work in such manner as to conform in all points to law. Prior to consolidation, each district had laws relating to its surveys and records of property lines, many of which differed in form, some very materially, and although in some instances inoperative, yet for mere points of litigation, could be brought into argument with some force; all these should be adjusted, and a new form legalized, that would be simple and effective, and bearing upon the entire city, place us on sound and good ground for action.

The passage of an ordinance relative to the preparation of liens for unpaid bills due the city, by which the Surveyors and Regulators would be remunerated for the work required, most particularly in obtaining informa-

tion for the tax liens, is a matter of importance. The property against which the charge may be made is, in almost every instance, so obscurely described upon the bills, that it would be impossible for other than one familiar with the district, or possessed of records of survey, to locate it so that a proper description could be made out; the difficulty in identifying a property may be understood by an extract of bill as usually returned, viz: "J. Jones, a frame house on Fourth street adjoining property owned in 1854, by J. Smith, 6th ward." And in some instances thus: "W. Smith, lot of ground on the north side of Duke street, 19th ward," in a region, perhaps, where there are no improvements, and the only mode by which any information may be obtained, (unless some starting point may be possessed by the Surveyor, from his own records,) is by tracing up the name in the Recorder's office, a work exceedingly tedious, and frequently without any valuable result. The Surveyors and Regulators were not called upon to perform this duty until the ordinance of June 19th, 1857, carrying out the intent of the law, brought the tax bills into the hands of the Solicitor, and thus to this department, for the proper descriptions; and as we have distributed, since July last, 1400 bills, many of which require several descriptions, (in one case thirteen separate and distinct descriptions for one bill filed,) some idea may be formed of the additional work required, and justice seems to say they should be remunerated, particularly, as in all cases prior to consolidation, the Surveyor invariably received compensation for such duty.

It is also very desirable that an ordinance be framed by which the dedicating of streets to public use may be filed in some one place, and as this department is most frequently, and with propriety, called upon to verify the locality of public streets, they should, after being recorded, be deposited in this office, as custom, and what has been found to be most convenient and proper, has already made a precedent, and is particularly necessary now, as a resolution of Councils, approved November 20th, 1858, requires that the certificate from the Department of Surveys, shall be obtained as to the public ownership of a street,

prior to the laying of water pipes ; such deeds, and many of value, are scattered through the several offices, notwithstanding we have endeavored to collect and file them for easy reference. If they were, in all cases hereafter, submitted to the Board of Survey for acceptance on the part of the city, and only made public streets subject to that approval, it might be of great advantage to our city plat.

Respectfully submitted,

**STRICKLAND KNEASS,**

*Chief Engineer and Surveyor.*