INDEXED

Local & Munl. (1897) Department.

PRINTED.

G.O., No. 209 M

DATED 12-2-97

[Despatch Abstract.]

Madras Drainage

Approving with remarks, the scheme for the drainage of Madras now proposed by the Commissioners sanctioning the proposals to undertake at once the drainage of Mylapore on the house connections system & to lay pipe sewers along Lee's Bridge road & Eydenhams Road, requesting the Mun. Comrs., Madras to arrange for the commencement of the works without delay; & stating that the question of financing the main scheme will be dealt with later on.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

Government of Madras.

LOCAL AND MUNICIPAL DEPARTMENT.

Recd. } 1897. *Enclosures*

Regd. } 1897. *Spare copies*

G.O., No. 209 M., 12th February 1897.

Madras Drainage.

Approving, with remarks, the scheme for the drainage of Madras now proposed by the Commissioners; sanctioning the proposals to undertake at once the drainage of Mylapore on the house-connection system and to lay pipe-sewers along Ice House road and Sydenham's road; requesting the President, Municipal Commission, Madras, to arrange for the commencement of the works without delay; and stating that the question of financing the main scheme will be dealt with later on.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following papers :—

I

G.O., No. 2140 M., dated 21st December 1895.

ABSTRACT.—Passing orders on the drainage and water-supply schemes of the City of Madras.

II

Letter—from Lieutenant-Colonel G. M. J. MOORE, C.I.E., President, Municipal Commission, Madras.
To—the Secretary to Government, Local and Municipal Department.
Dated—the 19th November 1896.
No.—G. 541.

In forwarding the accompanying extract from the proceedings of a special meeting of the Commissioners held on the 18th November 1896, together with the report of the committee referred to, I have the honour to request that Government will be pleased to reconsider G.O., No. 2140 M., dated 21st December 1895, in view of the proposals of the committee adopted by the Commissioners.

2. If this be acceded to, the drainage of Mylapore and the sewers in Ice House road and Sydenham's road can be put in hand at once with the 3½ lakhs kindly contributed by Government.

3. Proposals as to the improvement of the water-supply will be submitted shortly.

ENCLOSURES.

Extract from the Proceedings of a special meeting of the Commissioners held on 18th November 1896.

* * * * *

Read G.O., No. 2140 M., dated 21st December 1895, passing orders on the drainage and the water-supply schemes for the City of Madras and the report of the committee appointed by the Commissioners thereon.

Proposed by M.R.Ry. P. Subrahmanya Aiyar Avargal and seconded by M.R.Ry. V. C. Desika Chariyar Avargal—

"That the report of the committee be adopted and submitted to Government for sanction."

Resolution.—Carried *nem. con.*

Proposed by Surgeon-Lieutenant-Colonel G. L. Walker and seconded by M.R.Ry. P. Subrahmanya Aiyar Avargal—

"That the hearty thanks of the Commissioners be accorded to the committee for their labours in connection with the submission of this report."

Resolution.—Carried *nem. con.*

Report of the Committee appointed by the Commissioners at their meeting held on 3rd March 1896 *to consider G.O., No.* 2140 *M., dated 21st December* 1895, *passing orders on the drainage and water-supply schemes of the City of Madras.*

* * * * *

The committee held five meetings, of which one was at Manalli.

The committee, before expressing an opinion upon the system of house-connections advocated by Mr. Loane—that is, connecting the front of the houses with the sewer instead of the backyards as proposed by Mr. Cousins—considered it desirable to have a practical test. Accordingly it was determined to lay a 9″ sewer down Parish Venkatachala Aiyar Street, Black Town, discharging into No. I sewer and connect the houses with it.

2. Eleven house-connections were made and the sewer laid in September 1896 at a cost of Rs. 2,910.

3. They also deemed it advisable to have a plan and levels taken of the proposed site for the sewage farm at Manalli on the west of the Cochrane canal, and an estimate of the cost of preparing the land.

4. It was found that the land available was approximately 270 cawnies, but 130 only were dealt with, and the estimate, taking the value of the land at Rs. 600 per cawny, amounted to Rs. 3,91,934.

5. The committee inspected this site and were satisfied that it was not a suitable one for several reasons, the principal one being that there was no outfall for surplus sewage, which would have to be discharged into the canal. Taking into consideration the fact that as much land as could be required was available to extend the existing Black Town farm towards the north, the soil of which has proved to be eminently adapted to sewage farming, and that the cost of extending the main from Manalli to the present outfall channel would be about Rs. 1,55,000 and that the cost of 130 cawnies in that locality would not be more than Rs. 1,56,000, making a total of Rs. 3,11,000, against Rs. 3,91,934 for the Manalli sewage farm, and in view of the opinion expressed by the committee appointed by Government in 1890 to the following effect—"They consider the existence of this farm to be in no way objectionable, and as land for its extension is available to a practically unlimited extent, *no better final outfall could be obtained*"—the committee recommend that the final outfall should be at the present Black Town farm.

6. The committee advocate the high-level iron main from Triplicane to Black Town farm with pumping stations at Kistnampett, Chintadripettah, Lang's Gardens, Choolay and Tondiarpett; that the sewers should be laid with provision for house-connections where found suitable—the connections referred to above in Parish Venkatachala Aiyar street having proved very satisfactory; that existing side-drains may be connected with the sewers; that side-drains should be constructed where house-connections are unsuitable.

7. The committee have not so far dealt with Mylapore, but they recommend that the grant of 3½ lakhs given by Government should be devoted to this purpose and that Mylapore should be takan in hand *at once* and drained on the house-connection system, the sewage being turned on to a temporary sewage farm on Barber's Bridge rubbish depot to be eventually led into the outfall main at Triplicane.

8. The accompanying abstract shows that, excluding Mylapore, the total cost of construction would be Rs. 28,81,100.

9. Mr. Loane's original estimate, including Mylapore, carrying the outfall main to Manalli, amounted to Rs. 27,25,000.

10. It will, however, be seen that this abstract provides Rs. 2,49,000 for extension of sewage farms to an extent of 208 acres, and also for an increased length of outfall calculated above to cost Rs. 1,55,000, making a total of Rs. 4,04,000, which, if added to the Rs. 27,25,000, gives a total of Rs. 31,29,000 or almost the same as the present figure.

11. It is, however, proposed to alter the line of the outfall main by not taking it to Manalli, but crossing the canal at Basin Bridge, down Basin Bridge road and Old Jail street along Monegar Choultry road, across to Suria Narayana Chetti street, thence straight north to the northern limit of the farm. This will do away with the present open outfall channel and a portion of the existing 24″ main.

12. It will be seen that, out of the 3½ lakks given by Government, the drainage of Mylapore is only estimated to cost Rs. 3,00,000.

13. The committee recommend that the remaining Rs. 50,000 be utilised as follows.

14. That the drain along Ice House road, which from where it turns off to the south round the Hindu burial and burning ground is nothing but an ordinary ditch drain, should at once be converted into a pipe-sewer in anticipation of its forming one of the components of the Triplicane section. This is estimated to cost about Rs. 35,000.

15. That the present open masonry and ditch drain along Sydenham's road be also converted into a pipe-sewer leading into D'Mellows road farm in anticipation of its forming one of the components of the Choolay section—thus abolishing the long complained of nuisance in the People's Park. This is estimated to cost about Rs. 15,000.

16. With reference to paragraph 6 of the report, the committee would recommend that the high-level iron main be the first work undertaken and that a sum of 12 lakhs be allotted in the first instance.

ABSTRACT.

Letter—from R. E. ELLIS, Esq., Engineer, Madras Municipality.
To—the President, Madras Municipal Commission.
Dated—Madras, 29th October 1896.

With reference to the proposals made by the Drainage Committee, the cost of execution and maintenance of the works may be sub-divided as under. The cost of pumping has been included, but it has been found that the rental of the farm pays for the pumping when sufficient area is provided and the sewage not allowed to run to waste.

	Maintenance per annum. RS.	Construction. RS.
Mylapore.		
Drainage and house-connections	..	3,00,000
Cost of pumping to Barber's Bridge farm	5,000	..
Conservancy for flushing	5,350	..
Total ..	10,350	3,00,000
Chintadripett and North Triplicane.		
Outfall main from Black Town to Chintadripett	..	7,16,500
Sewers	..	2,68,000
House-connections, 5,000	..	1,00,000
Pumping machinery 2/45 I.H.P. engines and boilers	..	20,000
Engine-house, well and drivers' quarters	..	17,000
Extension of farm 70 acres at Rs. 1,200	..	84,000
Cost of pumping, Rs. 31,000—Rs. 6,000 *	25,000	..
Conservancy for flushing, etc.	7,500	..
Total ...	32,500	12,05,500
Meersapett and South Triplicane.		
Sewers	..	2,10,000
House-connections, 3,500	..	70,000
Pumping machinery, 2/40 I.H.P. engines and boilers.	..	16,000
Engine-house, well and drivers' quarters	..	17,000
Extension of outfall	..	81,000
Extension of farm 40 acres at Rs. 1,200	..	48,000
Maintenance pumping, Rs. 30,000—Rs. 10,000 *	20,000	..
Conservancy	5,250	..
Total ..	25,250	4,42,000
Egmore and Komaleeswarenpett.		
Sewers	..	1,50,000
House-connections, 2,000	..	40,000
Pumping machinery, 2/18 I.H.P. engines and boilers.	..	8,000
Engine-house, well and drivers' quarters	..	12,000
Branch to outfall	..	13,000
Extension of farm 20 acres at Rs. 1,200	..	24,000
Maintenance pumping	10,000	..
Conservancy	3,000	..
Total ..	13,000	2,47,000
Choolay.		
Sewers	..	3,50,000
House-connections, 6,000	..	1,20,000
Pumping machinery 2/42 I.H.P. engines and boilers.	..	17,000
Engine-house, well and drivers' quarters	..	17,000
Extension of farm 38 acres at Rs. 1,200	..	45,600
Pumping maintenance, Rs. 30,000—Rs. 10,000 *	20,000	..
Conservancy	9,000	..
Total ..	29,000	5,49,600

* Existing charges.

	Maintenance per annum. RS.	Construction. RS.
Tondiarpett and Ráyapuram.		
Sewers	..	2,70,000
House-connections, 5,000	..	1,00,000
Pumping machinery, 2/15 I.H.P. engines and boilers	..	7,000
Engine-house, well and drivers' quarters	..	12,000
Extension of farm 40 acres at Rs. 1,200	..	48,000
Pumping maintenance	10,000	..
Conservancy	7,500	..
Total ..	17,500	4,37,000

ABSTRACT.

—	Pumping.	Conservancy.	Construction.
	RS.	RS.	RS.
Mylapore	5,000	5,350	3,00,000
Chintadripett	25,000	7,500	12,05,500
Meersapett	20,000	5,250	4,42,000
Egmore and Komaleeswarenpett	10,000	3,000	2,47,000
Choolay	20,000	9,000	5,49,600
Tondiarpett	10,000	7,500	4,37,000
Total ..	90,000	37,600	31,81,100

The provision for house-connections is made with reference to paragraph 6, should it be considered desirable to construct them.

Order—No. 209 M., dated 12th February 1897.

In the circumstances stated, the scheme for the drainage of Madras now proposed by the Commissioners, which, excluding the subsidiary project for Mylapore, is estimated to cost Rs. 28,81,000, is approved.

2. The Commissioners propose to undertake at once the drainage of Mylapore on the house-connection system and to lay pipe-sewers along Ice House road and Sydenham's road at a total cost of Rs. 3,50,000, appropriating towards the cost of these works the Provincial grant of $3\frac{1}{2}$ lakhs which they have in hand. These proposals are sanctioned. The President is requested to arrange for the commencement of the works without delay.

3. The questions connected with the financing of the main scheme will be dealt with later on.

(True Extract.)

G. S. FORBES,
Secretary to Government.

To the President, Municipal Commission, Madras.
,, Sanitary Board.
,, ,, Commissioner.
,, ,, Engineer.
,, Public Works Department.
,, Financial Department,

Editors' Table.

Government {1897} of Madras.

LOCAL AND MUNICIPAL.

Proof for approval

Pages struck off

Recd. } 1897. Enclosures

Regd. Spare copies

G.O., No. 209 M., 12th February 1897.

FEBRUARY.

Madras Drainage.

Approving, with remarks, the scheme for the drainage of Madras now proposed by the Commissioners; sanctioning the proposals to undertake at once the drainage of Mylapore on the house-connection system and to lay pipe-sewers along Ice House road and Sydenham's roads; requesting the President, Municipal Commission, Madras, to arrange for the commencement of the works without delay; and stating that the question of financing the main scheme will be dealt with later on.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—again the following paper :—

G.O., No. 2140 M., dated 21st December 1895.

ABSTRACT.—Passing orders on the drainage and water-supply schemes of the City of Madras, and requesting the President to report on the details of the expenditure on pumping.

READ—also the following paper :—

From Lieutenant-Colonel G. M. J. MOORE, C.I.E., President, Municipal Commission, Madras, to the Secretary to Government, Local and Municipal Department, dated 19th November 1896, G. No. 541.

In forwarding the accompanying extract from the proceedings of a special meeting of the Commissioners held on the 18th November 1896, together with the report of the committee referred to, I have the honour to request that Government will be pleased to reconsider G.O., No. 2140 M., dated 21st December 1895, in view of the proposals of the committee adopted by the Commissioners.

2. If this be acceded to, the drainage of Mylapore and the sewers in Ice House road and Sydenham's road can be put in hand at once with the 3½ lakhs kindly contributed by Government.

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ENCLOSURES.

EXTRACT ~~referred to~~ from the Proceedings of a special meeting Commissioners held on 18 November 189

Read—G.O., No. 2140 M., dated 21st December 1895, passing orders on the drainage and the water-supply schemes for the City of Madras and the report of the Committee appointed by the Commissioners thereon.

Proposed by M.R.Ry. P. Subramania Iyer Avargal and seconded by M.R.Ry. V. C. Desika Chariar Avargal—

"That the report of the committee be adopted and submitted to Government for sanction".

Resolution.—Carried *nem. con.*

Proposed by Surgeon-Lieutenant-Colonel G. L. Walker and seconded by M.R.Ry. P. Subramania Iyer Avargal—

"That the hearty thanks of the Commissioners be accorded to the committee for their labours in connection with the submission of this report."

Resolution.—Carried *nem. con.*

REPORT of the Committee appointed by the Commissioners at their meeting held on 3rd March 1896 to consider G.O., No. 2140 M., dated 21st December 1895, passing orders on the drainage and water-supply schemes of the City of Madras.

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The committee held five meetings, of which one was at Manally.

The committee, before expressing an opinion upon the system of house-connections advocated by Mr. Loane—that is, connecting the front of the houses with the sewer instead of the backyards as proposed by Mr. Cousins—considered it desirable to have a practical test. Accordingly it was determined to lay a 9" sewer down Parish Venkatachella Iyer Street, Black Town, discharging into No. I sewer and connect the houses with it.

2. Eleven house-connections were made and the sewer laid in September 1896 at a cost of Rs. 2,910.

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5. The committee inspected this site and were satisfied that it was not a suitable one for several reasons, the principal one being that there was no outfall for surplus sewage, which would have to be discharged into the canal. Taking into consideration the fact that as much land as could be required was available to extend the existing Black Town farm towards the north, the soil of which has proved to be eminently adapted to sewage farming, and that the cost of extending the main from Manally to the present outfall channel would be about Rs. 1,55,000 and that the cost of 130 cawnies in that locality would not be more than Rs. 1,56,000, making a total of Rs. 3,11,000, against Rs. 3,91,934 for the Manally sewage farm, and in view of the opinion expressed by the committee appointed by Government in 1890 to the following effect—"They consider the existence of this farm to be in no way objectionable, and as land for its extension is available to a practically unlimited extent, *no better final outfall could be obtained*"—the committee recommend that the final outfall should be at the present Black Town farm.

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14. That the drain along Ice House road, which from where it turns off to the south round the Hindu burial and burning ground is nothing but an ordinary ditch drain, should at once be converted into a pipe-sewer in anticipation of its forming one of the components of the Triplicane section. This is estimated to cost about Rs. 35,000.

15. That the present open masonry and ditch drain along Sydenham's road be also converted into a pipe-sewer leading into D'Mellows road farm in anticipation of its forming one of the components of the Choolay section—thus abolishing the long complained of nuisance in the People's Park. This is estimated to cost about Rs. 1½,000.

16 With reference to paragraph 6 of the report, the committee would recommend that the high-level iron main be the first work undertaken and that a sum of 12 lakhs be allotted in the first instance.

Abstract referred to.

To R. E. Ellis Esq. Engineer, Madras Municipality

Letter from the President, Madras Municipal Commission, dated Madras 29th Octr 1896

Sir,

With reference to the proposals made by the Drainage Committee, the cost of execution and maintenance of the works may be sub-divided as under. The cost of pumping has been included, but it has been found that the rental of the farm pays for the pumping when sufficient area is provided and the sewage not allowed to run to waste.

	Maintenance per annum.	Construction.
Mylapore.	Rs.	Rs.
Drainage and house-connections	..	3,00,000
Cost of pumping to Barber's Bridge farm	5,000	..
Conservancy for flushing	5,350	..
Total ..	10,350	3,00,000
Chintadripett and North Triplicane.		
Outfall main from Black Town to Chintadripett	..	7,16,500
Sewers	..	2,68,000
House-connections, 5,000	..	1,00,000
Pumping machinery 2/45 I.H.P. engines and boilers	..	20,000
Engine-house, well and drivers' quarters	..	17,000
Extension of farm 70 acres at Rs. 1,200	..	84,000
Cost of pumping, Rs. 31,000—Rs. 6,000 *	25,000	..
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Engine-house, well and drivers' quarters	..	17,000
Extension of outfall	..	81,000
Extension of farm 40 acres at Rs. 1,200	..	48,000
Maintenance pumping, Rs. 30,000—Rs. 10,000*	20,000	..
Conservancy	5,250	..
Total ..	25,250	4,42,000
Egmore and Komaleeswarenpett.		
Sewers	..	1,50,000
House-connections, 2,000	..	40,000
Pumping machinery, 2/18 I.H.P. engines and boilers	..	8,000
Engine-house, well and drivers' quarters	..	12,000
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Extension of farm 20 acres at Rs. 1,200	..	24,000
Maintenance pumping	10,000	..
Conservancy	3,000	..
Total ..	13,000	2,47,000
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House-connections, 6,000	..	1,20,000
Pumping machinery 2/42 I.H.P. engines and boilers	..	17,000
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Pumping maintenance, Rs. 30,000—Rs. 10,000*	20,000	..
Conservancy	9,000	..
Total ..	29,000	5,49,600

* Existing charges.

	Maintenance per annum.	Construction.
	Rs.	Rs.
Tondiarpett and Ráyapuram.		
Sewers	..	2,70,000
House connections, 5,000	..	1,00,000
Pumping machinery, 2/15 I.H.P. engines and boilers	..	7,000
Engine-house, well and drivers' quarters	..	12,000
Extension of farm 40 acres at Rs. 1,200	..	48,000
Pumping maintenance	10,000	..
Conservancy	7,500	..
Total ..	17,500	4,37,000

Abstract.

	Pumping.	Conservancy.	Construction.
	Rs.	Rs.	Rs.
Mylapore	5,000	5,350	3,00,000
Chintadripett	25,000	7,500	12,05,500
Meersapett	20,000	5,250	4,42,000
Egmore and Komaleeswarenpett	10,000	3,000	2,47,000
Choolay	20,000	9,000	5,49,600
Tondiarpett	10,000	7,500	4,37,000
Total ..	90,000	37,600	31,81,100

The provision for house-connections is made with reference to paragraph 6, should it be considered desirable to construct them.

Order—No. 209 M., dated 12th February 1897.

In the circumstances stated, the scheme for the drainage of Madras now proposed by the Commissioners, which, excluding the subsidiary project for Mylapore, is estimated to cost Rs. 28,81,000, is approved.

2. The Commissioners propose to undertake at once the drainage of Mylapore on the house-connection system and to lay pipe-sewers along Ice House road and Sydenham's road at a total cost of Rs. 3,50,000, appropriating towards the cost of these works the Provincial grant of 3½ lakhs which they have in hand. These proposals are sanctioned. The President is requested to arrange for the commencement of the works without delay.

3. The questions connected with the financing of the main scheme will be dealt with later on.

(True Extract.)

Secretary to Government.

To the President, Municipal Commission, Madras.
" Sanitary Board.
" Sanitary Commissioner.
" Sanitary Engineer.
" Public Works Department.
" Financial Department
Editors' Table.

Exd. A. Raitt.

Read—again the following paper

No. 2140 M., 21st December 1895.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

Read—again the following papers :—

G.O., Mis. No. 1226 M., dated 31st July 1895.

Abstract.—Awaiting the recommendations of the Madras Municipal Commissioners in connection with the drainage and water-supply of Madras.

G.O., Mis. No. 1672 M., dated 19th October 1895.

Abstract.—Referring to the Public Works Department, with remarks, papers relating to the drainage and water-supply schemes for the City of Madras.

Read—also the following paper :—

Note by the Chief Engineer, Public Works Department, dated 28th October 1895.

I have already had the advantage of discussing the questions raised in these papers with the President of the Municipal Commission and with Mr. Ellis and Mr. Loane.

2. As regards the water-supply, I consider that, pending the possibility of carrying out the complete scheme recommended by Mr. Cousins, which is practically the same as that proposed by the Committee of 1890, the municipality cannot do better than adopt Mr. Ellis' suggestions, as summed up in paragraph 33 of his report, dated 5th September 1895.

3. The improvement of the head-works at Kilpauk referred to in paragraph 26 of the report is a matter of great importance, and I concur in Mr. Ellis' recommendations on this point.

4. The condition of the pipes as explained in paragraphs 20, 21, must call for very early attention.

5. The question is raised in these papers of the raising of the F.S.L. of the Red Hills Lake; on this point I wish to express in the most decided manner my opinion that no such raising should be allowed on any consideration.

6. The whole question was carefully considered in 1884–85, and the arguments in favour of the reduction of the lake level which was then carried out are irresistible.

7. A reason given in favour of the increase is the large annual expenditure on pumping, which is stated by Mr. Loane (paragraph 4 of his memorandum of the 25th January 1895) at Rs. 20,000. In the absence of details of this expenditure it is impossible to say how far it can be justified, but it seems to me incredible that so large an expenditure should have been incurred unless there was an extraordinary waste of money somewhere.

8. With regard to the drainage, Mr. Ellis' proposals are, in my opinion, much preferable to those of Mr. Loane; they have the advantage that they work up to Mr. Cousins' more complete scheme, and I approve of them.

9. I should add that I have not at present seen reason to change my own opinion that it would be better to devote all available funds to carrying out a complete system of water-supply on the lines indicated by Mr. Cousins and to consider the drainage as secondary thereto, but the balance of opinion appears to be against this view, and if it be accepted as settled that the drainage question requires more immediate attention than that of water-supply, Mr. Ellis' proposals appear to be worthy of adoption.

(Signed) J. PENNYCUICK, Col., R.E.,
Chief Engineer, P.W.D.

No. 3146-C.

Transferred to the Local and Municipal Department.

Fort St. George,
28*th October* 1895.

(Signed) J. PENNYCUICK, Col., R.E.,
Secretary to Govt., P.W.D.

Order—No. 2140 M., dated 21st December 1895.

In G.O., No. 1651 M., dated 7th November 1894, the Government decided to abandon for the present the drainage scheme proposed by Mr. Cousins, as it was estimated to cost as much as 61 lakhs in the first instance and nearly $7\frac{3}{4}$ lakhs annually for maintenance, interest and sinking fund, and it was thought that his idea of house-connections was impracticable. The Commissioners were therefore requested to report the steps which should be taken to put the existing system of disposal of rubbish and night-soil in the town on a satisfactory footing. In regard to water-supply, however, the Government was of opinion that the scheme prepared by Mr. Cousins, and estimated to cost 25 lakhs to carry out and four lakhs annually to work, might be adopted, with the modifications suggested by Colonel Pennycuick and Mr. Jones, and accordingly desired the Commissioners to report the measures which they would propose to finance the scheme, to which the hydraulic survey of the town proposed by Colonel Pennycuick and Mr. Jones was considered to be an indispensable preliminary.

2. The Commissioners were also requested, in G.O., No. 661 M., dated 16th April 1895, to state whether they were still prepared to tax the imports of petroleum consumed in Madras in order to raise the funds required for carrying out the sanitary improvements under consideration.

3. As sufficient funds are not available for the execution of both the drainage and water-supply projects, the Municipal Commissioners consider that the drainage scheme should have the preference. The Chief Engineer, for whose remarks the papers were referred, sees no reason to modify his opinion that it would be better to devote all available funds to carry out a complete scheme of water-supply on the lines suggested by Mr. Cousins in preference to a drainage scheme. The Government, on reconsideration, agrees with the Commissioners in this matter, especially as the Commissioners do not leave the water-supply out of consideration altogether, but propose to spend some lakhs upon it.

4. The proposals submitted by the Commissioners for the satisfactory disposal of rubbish and night-soil have been disposed of in G.O., Mis. No. 2123 M., dated 19th December 1895.

As regards drainage, the Commissioners have considered two other schemes—one proposed by Mr. Ellis and the other by Mr. Loane—in both of which the objections raised against Mr. Cousins' scheme are met by omitting house-connections for the present. Mr. Ellis suggests that the larger drains of Mr. Cousins' scheme be laid down exactly as planned by him in such parts of the town as call for immediate action and that the other parts which are in a less insanitary condition be taken up later on. This scheme is estimated to cost 20 lakhs in the first instance and Rs. 1,54,780 annually to work. On the other hand, Mr. Loane's scheme, which is new, is estimated to cost 28 lakhs at first and Rs. 1,57,580 annually, though the latter sum may be reduced by Rs. 25,000 when the sewage farms begin to yield a profit. Mr. Loane proposes a sewer from Mylapore to Manalli, a distance of $6\frac{1}{2}$ miles,

along a new alignment, and with pipes and gradients different from those of Mr. Cousins. The Commissioners prefer this scheme, as they say that it provides for the drainage of the whole town on the lines laid down by Mr. Cousins, with the exception of the substitution of the main for the brick sewer. This assertion, however, is based on a misapprehension of the principles of the scheme, which is complete in itself, differs in many important details from Mr. Cousins' scheme, and cannot be extended so as to embrace it when funds are available. With regard to water-supply also the Commissioners desire to adopt the main portions of a scheme proposed by Mr. Loane in preference to that of Mr. Cousins. According to this it is proposed (1) to raise the bund of the Red Hills tank by three feet to the level existing before the breach in 1884, so as to store a much larger volume of water, (2) to raise the sides of the existing channel by two feet so as to increase the supply, (3) to remove the villages lying within the water-spread of the tank, and (4) to alter such of the existing branches in the town as may be found necessary after the hydraulic survey. These works are estimated to cost seven lakhs. The Chief Engineer to Government, however, objects very strongly to the raising of the tank bund, as the whole question was carefully considered in 1884 and the arguments in favour of the lowering of the bund—a work which was then carried out—are, in his opinion, irresistible. Colonel Pennycuick recommends a scheme which has been proposed by Mr. Ellis after completion of the hydraulic survey of the town, providing for the partial improvement of the distribution, purification and quantity of the supply at a cost of nearly $6\frac{3}{4}$ lakhs. The Government prefers the adoption of both the drainage and water-supply schemes proposed by Mr. Ellis, as they are in reality parts of the schemes proposed by Mr. Cousins and approved by the Chief Engineer and can be easily extended so as to embrace the whole of these schemes when funds are available.

5. The Commissioners are not now in favour of the proposed tax on petroleum, but suggest the increase of the present rates of taxation, &c., in certain cases and request the Government to make a grant of 10 lakhs from Provincial Funds. The Government, however, is of opinion that the question of financing the schemes to be carried out can be better dealt with after complete schemes for the works now decided upon have been prepared, and the President will be requested to submit them as soon as possible. Meanwhile, information will be obtained as to the methods, rates and incidence of taxation obtaining in the municipalities of Calcutta, Bombay and Rangoon.

6. The special attention of the Municipal Commissioners will be called to paragraphs 20, 21 and 26 of Mr. Ellis' report on the hydraulic survey of the town, regarding the present condition of the pipes and the improvement of the head-works at Kilpauk, which call for very early consideration.

7. The President will be requested to report the details of the expenditure on pumping, referred to in paragraph 4 of Mr. Loane's memorandum of the 25th May 1895, as in the absence of these the Chief Engineer is of opinion that it is incredible that so large a sum as Rs. 20,000 per annum could have been spent on the work unless there was an extraordinary waste of money somewhere.

(True Extract.)

J. F. PRICE,
Chief Secretary.

To the President, Municipal Commission, Madras.
" Public Works Department.
" Sanitary Commissioner.
" Sanitary Engineer.
Editors' Table.

Exd. A. Raitt.

Govt. of {1895} Madras.

LOCAL AND MUNICIPAL.

Issued

Recd. Encl.

G.O., No. 2140 M., 21st Dec. 1895.

DECEMBER.

Drainage and Water-Supply Schemes.

Passing orders on the — of the City of Madras, and requesting the President to report on the details of the expenditure on pumping.

Local & Munl. (1896) Department.

CURRENT No. 3140 M

From

THE PRESIDENT, Municipal Commission, Madras.

SECRETARIAT GOVERNMENT 20. NOV. 1896 LOCAL & MUNICIPAL DEPARTMENT

G. No. 571

Order

Dated 19th November 1896

Received 20-11-96

Registered 20-11-96

Enclosures 2.

Spare copies

SUBJECT.

Forwarding extract from the proceedings of a special meeting of the Commissioners held on 18th November 1896 re the adoption of the report of the drainage Committee, and informing that proposals for the water-supply improvement will shortly be submitted.

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

Genl. Dept. 13

Read also the following papers

G. No. 541

MUNICIPALITY OF MADRAS.

General Department,

Madras, 19th November 1896.

Local and Municipal Dept. 3140/96

From

LIEUT.-COL. G. M. T. MOORE, C. I. E.,

President, Municipal Commission.

To

The Secretary to Government,

Local and Municipal Department,

Fort Saint George.

SIR,

Enclosures 2

In forwarding the accompanying extract from the proceedings of a Special Meeting of the Commissioners held on the 18th November 1896, together with the Report of the Committee referred to, I have the honor to request that Government will be pleased to reconsider G.O. No. 2140 M. dated 21st December 1895, in the view of the proposals of the Committee, adopted by the Commissioners.

2. If this be acceded to, the drainage of Mylapore and the sewers in Ice House Road and Sydenham's Road can be put in hand at once with the 3 ½ lakhs kindly contributed by Government.

3. Proposals as to the improvement of the Water Supply will be submitted shortly.

I have the honor to be,

Sir,

Your most obedient servant,

G. M. Moore Lt. Co

President, M.C.

Extract referred to

G.O.No.2140 M. (L & M) dated 21st December 1895, passing orders on the Drainage and the Water Supply Schemes for the City of Madras and the Report of the Committee appointed by the Commissioners thereon.

Proposed by M.R.Ry P.Subramania Iyer Avargal and seconded by M.R.Ry V.C.Desika Charriar Avargal

"That the report of the Committee be adopted and submitted to Government for sanction".

Carried nem con.

Proposed by Surgeon Lt.-Col.G.L.Walker and seconded by M.R.Ry P.Subramania Iyer Avargal

"That the hearty thanks of the Commissioners be accorded to the Committee for their labours in connection with the submission of this report".

Carried nem con.

Report of the Committee appointed by the Commissioners at their Meeting held on 3rd March 1896, to consider G. O., No. 2140 M, Local and Municipal, dated 21st December 1895, passing orders on the Drainage and Water supply schemes of the City of Madras.

Members.

Lt.-Col. G. M. J. Moore, C. I. E., *President.*

M. R. Ry. R. N. Pragasa Mudaliar, Avargal.

Surgeon Lt.-Col. J. Maitland.

The Hon'ble P. Rungiah Naidu Garu.

M. R. Ry. V. Varadappa Naidu Garu.

„ P. Theagaroya Chetty Garu.

H. Ormerod, Esq.

The Committee held five meetings, of which one was at Manally.

The Committee, before expressing an opinion upon the system of House connections advocated by Mr. Loane, that is connecting the front of the houses with the sewer instead of the backyards as proposed by Mr. Cousins, considered it desirable to have a practical test. Accordingly it was determined to lay a 9" sewer down Parish Venkatachella Iyer Street, Black Town, discharging into No. I sewer, and connect the houses with it.

2. 11 house connections were made and the sewer laid in September 1896 at a cost of Rs. 2,910.

3. They also deemed it advisable to have a plan and levels taken of the proposed site for the Sewage Farm at Manally on the west of the Cochrane Canal, and an estimate of the cost of preparing the land.

4. It was found that the land available was approximately 270 Cawnies, but 130 only were dealt with, and the estimate, taking the value of the land at Rs. 600 per Cawny, amounted to Rs, 3,91,934.

5. The Committee inspected this site and were satisfied that it was not a suitable one for several reasons, the principal one being that there was no outfall for surplus sewage which would have to be discharged into the Canal. Taking into consideration the fact that as much land as could be required was available to extend the existing Black Town Farm towards the North, the soil of which has proved to be eminently adapted to Sewage farming, and that the cost of extending the main from Manally to the present Outfall channel would be about Rs. 1,55,000 and that the cost of 130 Cawnies in that locality would not be more than Rs 1,56,000, making a total of Rs. 3,11,000 against Rs. 3,91,934 for the Manally Sewage Farm, and in the view of the opinion expressed by the Committee appointed by Government in 1890 to the following effect—"They consider the existence of this Farm to be in no way objectionable, and as land for its extension is available to a practically unlimited extent, *no better final outfall could be obtained*"—the Committee recommend that the final outfall should be at the present Black Town Farm.

6. The Committee advocate the High Level Iron Main from Triplicane to Black Town Farm with Pumping stations at Kistnampett, Chintadripettah, Langs Gardens, Choolay and Tondiarpett. That the sewers should be laid with provision for house connections where found suitable—the connections referred to above

in Parish Vencatachella Iyer street having proved very satisfactory-that existing side drains may be connected with the sewers, that side drains should be constructed where house connections are unsuitable.

7. The Committee have not so far dealt with Mylapore but they recommend that the grant of 3½ lakhs given by Government should be devoted to this purpose and that Mylapore should be taken in hand *at once* and drained on the house connection system, the sewage being turned on to a temporary Sewage Farm on Barber's Bridge Rubbish Depôt, to be eventually led into the Outfall main at Triplicane.

8. The accompanying abstract shows that excluding Mylapore the total cost of construction would be Rs. 28,81,100.

9. Mr. Loane's original estimate including Mylapore, carrying the Outfall main to Manally, amounted to Rs. 27,25,000.

10. It will, however, be seen that this abstract provides Rs. 2,49,000 for extension of Sewage Farms to an extent of 208 acres, and also for an increased length of Outfall calculated above to cost Rs. 1,55,000, making a total of Rs. 4,04,000, which if added to the Rs. 27,25,000 gives a total of Rs. 31,29,000 or almost the same as the present figure.

11. It is, however, proposed to alter the line of the Outfall main by not taking it to Manally, but crossing the Canal at Basin Bridge, down Basin Bridge Road and Old Jail Street along Monegar Choultry Road, across to Suria Narayana Chetty Street, thence straight north to the northern limit of the Farm. This will do away with the present open Outfall channel and a portion of the existing 24" main.

12. It will be seen that out of the 3½ lakhs given by Government, the drainage of Mylapore is only estimated to cost Rs. 3,00,000.

13. The Committee recommend that the remaining Rs. 50,000 be utilized as follows :—

14. That the drain along Ice House Road, which from where it turns off to the south, round the Hindu Burial and Burning ground, is nothing but an ordinary ditch drain, should at once be converted into a pipe sewer in anticipation of its forming one of the components of the Triplicane section. This is estimated to cost about Rs. 35,000.

15. That the present open masonry and ditch drain along Sydenham's Road be also converted into a pipe sewer leading into D'Mellows Road Farm in anticipation of its forming one of the components of the Choolay Section—thus abolishing the long complained of nuisance in the People's Park—this is estimated to cost about Rs. 15,000.

16. With reference to para 6 of the report, the Committee would recommend that the High Level Iron Main be the first work undertaken and that a sum of 12 lakhs be allotted in the first instance.

(Signed) G. M. J. MOORE,
(„) P. THEAGARAYA CHETTY.
(„) R. N. PRAGASA MUDALIAR.
(„) P. RUNGIAH NAIDU.
(„) V. VARADAPPA NAIDU.
(„) H. ORMEROD.
(„) J. MAITLAND.

MUNICIPAL OFFICE,
MADRAS,
6th November 1896.

ABSTRACT REFERRED TO

To

THE PRESIDENT,

M. M. C.

SIR,

With reference to the proposals made by the Drainage Committee, the cost of execution and maintenance of the works may be sub-divided as under. The cost of pumping has been included, but it has been found that the rental of the Farm pays for the pumping when sufficient area is provided and the sewage not allowed to run to waste.

	Maintenance per annum.	Construction.
	Rs.	Rs.
Mylapore.		
Drainage and house connections		3,00,000
Cost of Pumping to Barber's Bridge Farm...	5,000	
Conservancy for flushing	5,350	
	10,350	3,00,000
Chintadripett and North Triplicane.		
Outfall main from Black Town to Chintadripett		7,16,500
Sewers		2,68,000
House connections 5,000		1,00,000
Pumping machinery 2/45 I. H. P. Engines and Boilers		20,000
Engine house, well and Drivers' quarters		17,000
Extension of Farm 70 acres at Rs. 1,200		84,000
Cost of pumping Rs. 31,000—Rs. 6,000*	25,000	
Conservancy for flushing &c.	7,500	
	32,500	12,05,500
Meersapett and South Triplicane.		
Sewers		2,10,000
House connections 3,500		70,000
Pumping machinery 2/40 I. H. P. Engines and Boilers		16,000
Engine house, well and Drivers' quarters		17,000
Extension of outfall		81,000
Extension of Farm 40 acres at Rs, 1,200		48,000

* Existing charges.

Drainage

[5]
700—6-4-96.

LOCAL AND MUNICIPAL DEPARTMENT.

Papers to be read in Proceedings:—

Again G.O., ~~dated~~ No. 2140M. 21-12-1895, ~~No.~~

Current No 3140M of 1896, dated 19-11-1896 from the President, Municipal Commrs, Madras.

Current No. of 189 ; dated from the

Rd Order. No. 209 M. 12-2-97

In the circumstances stated, the scheme for the drainage of Madras as proposed by the Commissioners which, excluding the subsidiary project for ~~that of~~ Mylapore, is estimated to cost Rs 2881000 is approved.

2. The Commissioners propose to undertake at once the drainage of Mylapore on the house connection system and to lay pipe sewers along Ice House road and Sydenham's road at a total cost of Rs 350000, and to appropriate towards the cost of these works the Provincial grant of 3½ lakhs which they have in hand. These proposals are sanctioned. The President is requested to arrange for the commencement of the works without delay.

After submitting a report until experience

6/2/97

3. It is observed that the house connections now suggested by the Commissioners are not to be used for the discharge into the sewer of foecal matter from the latrines. There does not however appear to be any reason why this should not be done. The Commissioners are requested to state whether it will not be possible to do alter their design as to provide also for night soil conservancy.

(From orders)

V.R. 2/2/97

4. The questions connected with the financing of the main scheme will be dealt with later on

S.K. 4/2/97

To
The President, Municipal Commrs. [illegible]
- Sanitary Board. 5
- Sanitary Commissioner 3
- Sanitary Engineer 3
- Public Works Department 19
- Finance Dept 1

Editors' Table.

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